

Lanark County Climate Action Plan

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We would like to acknowledge all local municipalities, community members, Climate Network Lanark, Greenscale Incorporated, and Sustainable Kingston for their contributions to the development and preparation of the Lanark County Climate Action Plan, as well as Bob Argue for his contributions to the development of the Lanark County Climate Lens for all council decisions. The collective knowledge and insight of all members was critical to developing a framework to reduce greenhouse gas emissions and reduce the impact of climate change in Lanark County.

Executive Summary

To be completed.

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Introduction and Overview

About Lanark County

Lanark County has a population of 75,760 and is located southwest of Ottawa on the traditional territory of the Omàwiniwiniwag (Algonquin) (Figure 1). Lanark County is an upper-tier municipality comprised of eight thriving lower-tier municipalities: Lanark Highlands, Mississippi Mills, Carleton Place, Drummond North Elmsley, Perth, Tay Valley, Beckwith, Montague; and one separated town: Smiths Falls.

Lanark County has a rich geographic landscape. Situated on Precambrian and Paleozoic bedrock, Lanark County covers over 300,000 hectares of which nearly 58% is forested¹. Lanark County spans both the Rideau Valley and Mississippi Valley Watersheds and is home to over 100 lakes, rivers, and waterfalls, and at least 47 provincially significant wetlands^{2,3}. This landscape supports a diversity of flora and fauna and provides the vast agricultural, recreational, economic, and social opportunities for which Lanark County is known.

Holding the title of the Maple Syrup Capital of Ontario, Lanark County is rich in history and rooted in traditions. The rural areas and quaint towns depict the heritage of this region through their preserved architecture and infrastructure.



Figure 1. Map of Lanark County.

Lanark County's Climate Commitment

As municipal governments influence or control roughly half of Canada's greenhouse gas emissions, they are in a unique position to be leaders in climate change mitigation and adaptation initiatives⁴.

Municipalities can use their regulatory power to effectively address climate change and greenhouse gas emissions through land-use planning, community energy planning, zoning, by-laws, grants, and funding opportunities. While municipal governments can play a strong role in climate leadership, all levels of government and community members will need to participate in climate action to see meaningful

¹ The Geology of Lanark County, 2009 <https://lanarkcountytourism.com/wpcontent/uploads/2014/08/LanarkCountyGeology.pdf>

² About Lanark County, <https://lanarkcountytourism.com/about-lanark-county/>

³ Keddy, P.A. (2008), Earth, Water, Fire: An Ecological Profile of Lanark County, Arnprior, Ontario: General Store Publishing House, p. Map 14

⁴ Climate and sustainability, Federation of Canadian Municipalities, <https://fcm.ca/en/focus-areas/climate-and-sustainability>

reductions in greenhouse gas emissions. The creation of the Lanark County Climate Action Plan provides the County, municipalities, and community members with methods to collectively create a more resilient community for the future.

Lanark County is dedicated to working collaboratively with its nine member municipalities to improve and support sustainability in the county. In 2012, Lanark County adopted its first [Sustainable Communities Official Plan](#) (SCOP) to integrate sustainable practices into land use policies. Lanark County identified climate change and air quality as a main theme of the SCOP; thus, the County committed to reducing greenhouse gas emissions and other air pollutants, while also planning for changes in the climate and natural environment. To achieve these commitments, Lanark County began the process of developing a Climate Action Plan with the Partners for Climate Protection (PCP) program in 2019.

Partners for Climate Protection Program

The PCP program from [ICLEI—Local Governments for Sustainability \(ICLEI Canada\)](#) and the [Federation of Canadian Municipalities](#) assists municipalities in taking action against climate change by reducing municipal greenhouse gas emissions. The PCP program uses a five-step framework to guide municipalities towards carbon reductions:

Milestone 1 – Creating a greenhouse gas emissions inventory and forecast

Milestone 2 – Setting an emissions reduction target

Milestone 3 – Developing a local action plan

Milestone 4 – Implementing the local action plan

Milestone 5 – Monitoring progress and reporting results

The publication of the Lanark County Climate Action Plan marks the completion of Milestone 3 of the PCP program. Lanark County is now in the process of implementing the Climate Action Plan, while also helping local municipalities develop their own corporate Climate Action Plans and achieve their climate goals.

The plan's primary objectives are to work with stakeholders to reduce greenhouse gas emissions within Lanark County, while also preparing the community for present and future changes.

Climate Action Plan Development

The Lanark County Climate Action Plan is divided into two main sections: 1) the Corporate Climate Action Plan, which outlines how the County will address climate change and reduce greenhouse gas emissions from its municipal operations, and 2) the Community Climate Action Plan, which outlines how the County will address climate change and reduce greenhouse gas emissions from the community at large.

Since 2019, community representatives, municipal staff, and local organizations have worked together to develop the framework and set the trajectory of the Climate Action Plan (Figure 2). The Climate Action Committee was active from June 2021 to November 2022 and was made up of representatives from all lower-tier municipalities and the Town of Smiths Falls, Climate Network Lanark, and Lanark County. Together, the Climate Action Committee provided strategic direction for the development of

Lanark County’s Climate Action Plan and recommendations for climate action initiatives in Lanark County. The Climate Action Working Group emerged in February 2023 and will continue for the remainder of this Council term (2023-2026). The working group is made up of three elected officials from Lanark County Council, members of the Executive Management Team of the County, and Lanark County staff. Representatives from each lower-tier municipality, the Town of Smiths Falls, and Climate Network Lanark are included as needed dependent on the topic and scope of the item discussed. The Climate Action Working Group provides direction for the implementation and reporting of Lanark County’s Climate Action Plan.

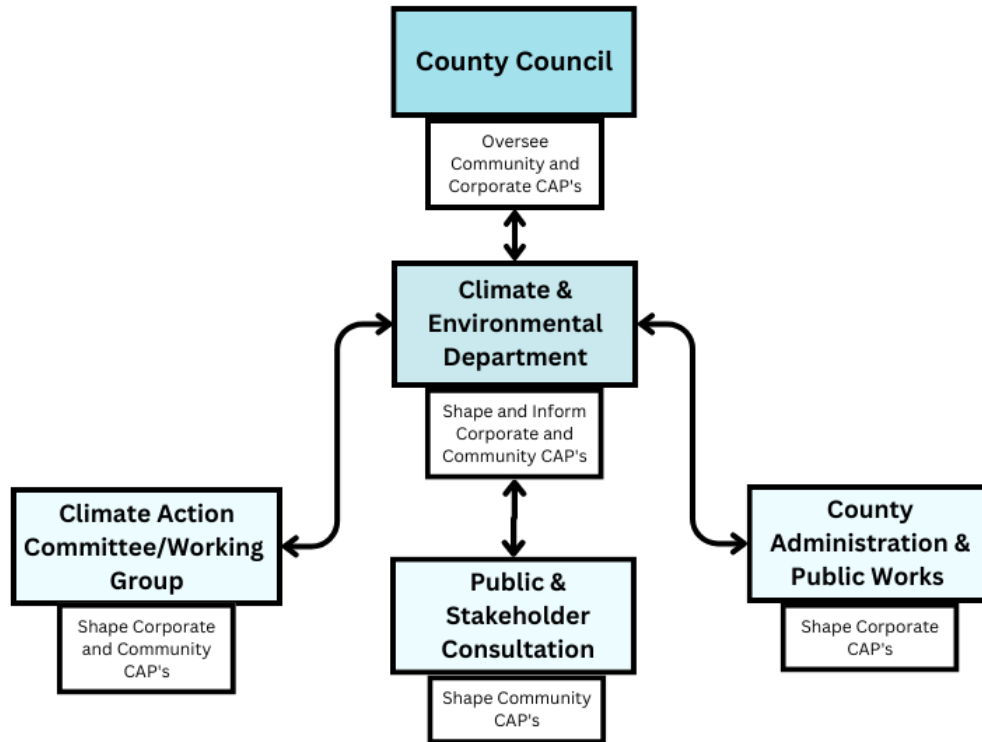


Figure 2. Collaborative structure of the corporate and community Climate Action Plans.

Public and stakeholder consultation has been an important component of creating the Climate Action Plan. Feedback from community members and local organizations has been included in the plan to ensure the interests of Lanark County citizens are represented. In October 2021, a stakeholder survey was sent to local organizations including those in the health, education, trades, business, energy, agriculture and food security, and natural resource sectors. The responses from this stakeholder survey were incorporated into the Climate Action Plan. In November 2022, Lanark County hosted a climate action information session where the public could learn about the Climate Action Plan and ongoing initiatives. The first draft of the Climate Action Plan was also made available for a six-week public comment period before being finalized.

As we proceed with the implementation of the Climate Action Plan, engagement will be critical in meeting our emission reduction targets. Partnerships with local businesses and organizations will be key in mobilizing citizens to act against climate change. County staff will continue to strive to create meaningful opportunities for all community members to become more informed and involved with

climate action. Key avenues of community engagement will be the [Lanark County Climate Action Information Page](#), newsletter, County website, educational seminars, public events, and other media outlets.

Sustainable Lanark

Lanark County maintains its commitment to the 19 themes of Sustainable Lanark as identified in the Sustainable Communities Official Plan (SCOP), which include age-friendly communities, healthy communities, safety, and diversity⁵. As climate change affects different communities in diverse ways and can exacerbate existing societal issues, it is important that these core themes of Sustainable Lanark are integrated into the Climate Action Plan to reduce the disproportionate effects of climate change.

According to the Government of Canada, the health of vulnerable communities may be at an increased risk due to climate change. These communities include:

- Seniors
- Youth and children
- Indigenous people
- Racialized populations
- People with disabilities
- People who are pregnant
- Emergency first responders
- People in northern and remote communities
- People who are socially and economically disadvantaged
- People who are immunocompromised and or living with a pre-existing illness⁶

Inevitably, despite Lanark County's best efforts to reduce our greenhouse gas emissions, increases in heat and extreme weather events will still happen. To ensure the resilience of our communities, including those most vulnerable, on-going collaboration with community groups seeking equity and justice will be a necessary component of the evolution of this plan. Adaptation to climate change will be an important component to future revisions of both new and existing plans.

⁵ Lanark County (2012), *Sustainable Communities Official Plan* <https://www.lanarkcounty.ca/en/doing-business/resources/documents/Planning/Microsoft-Word---SCOP---Adopted-with-approved-MMAH-Modifications-June-18-2013.pdf>

⁶ Government of Canada (2022), *Who is most impacted by climate change* (<https://www.canada.ca/en/health-canada/services/climate-change-health/populations-risk.html>)

A Changing Climate

Introduction to Climate Change

Climate change is the long-term shift in weather conditions measured by changes in temperature, precipitation, winds, and other indicators. Climate change can involve changes in average conditions, as well as changes in the frequency and severity of extreme weather events such as heat waves, flooding, droughts, and storms⁷. These shifts in climate conditions can occur naturally due to changes in the sun's activity or large volcanic eruptions. However, since the 1800s, human activities have been the main cause of climate change, primarily due to the burning of fossil fuels like coal, oil, and gas⁸. As fossil fuels are burned through activities like driving, heating homes, and powering equipment, greenhouse gases are released into the atmosphere. Greenhouse gases are also released through other human practices such as waste management (e.g., solid waste sent to landfills), land-use decisions (e.g., development and forestry), and agricultural activities (e.g., livestock and manure management).

Greenhouse gases get their name because when they are released in the atmosphere, they act as an insulator, trapping the sun's heat and keeping the Earth's surface warm⁹. This process is referred to as the "greenhouse effect" because greenhouse gases make the earth warmer, just as a greenhouse is warmer than its surroundings (Figure 3). As humans increase the concentration of greenhouse gases, particularly carbon dioxide (CO₂), more heat is trapped in the atmosphere and the Earth's temperature rises. Since humans are emitting greenhouse gases at a rate faster than ever before, climate change threatens to warm the planet to levels that have never been experienced in the history of human civilization, making it extremely challenging for human societies and the natural world to adapt¹⁰.

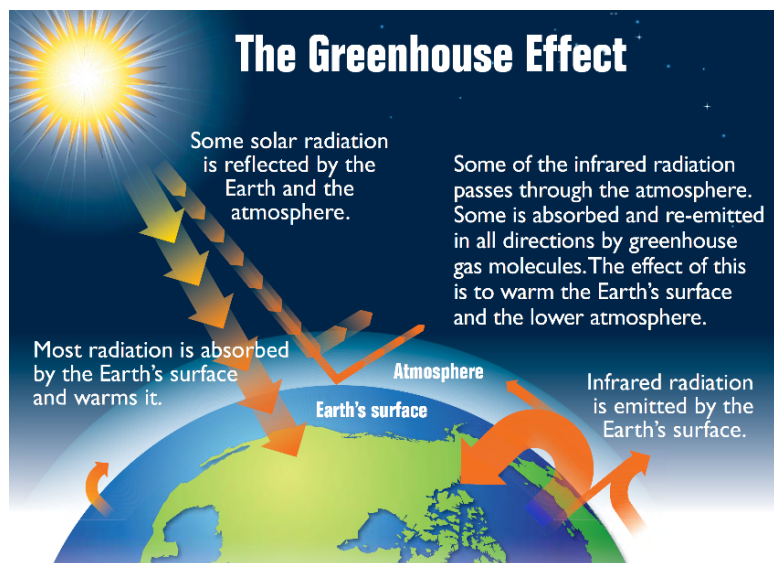


Figure 3. The greenhouse effect¹¹.

⁷ Government of Canada (2019), *Causes of climate change* <https://www.canada.ca/en/environment-climate-change/services/climate-change/causes.html>

⁸ United Nations, *What Is Climate Change?* (<https://www.un.org/en/climatechange/what-is-climate-change#:~:text=Climate%20change%20refers%20to%20long,activity%20or%20large%20volcanic%20eruptions>)

⁹ Ibid 7

¹⁰ Ibid 7

¹¹ Energy Education, *Greenhouse effect* https://energyeducation.ca/encyclopedia/Greenhouse_effect

What is the difference between weather and climate?

Weather refers to the day-to-day state of the atmosphere relative to a place and time. Weather can be described by the heat, dryness, sunshine, cloud cover, wind, and rain conditions of a place at a certain time. Weather is more variable than climate and is usually assessed for a localized area over a short period of time (i.e., minutes, hours, days, weeks). Climate, however, refers to the long-term weather conditions in a place or region over a long period of time. An assessment of climate is usually 30 years or more. To differentiate between the two concepts, climate can be described as “what you expect”, whereas weather is “what you get”. As climate change progresses, weather patterns change which results in a shift in what you can expect in the region¹².

What is the difference between global warming and climate change?

The terms “global warming” and “climate change” are often used interchangeably, but they are not the same. Global warming is a term that describes the long-term increase in global average surface temperature. Global warming is only one aspect of climate change. Climate change more broadly describes the long-term changes that are happening to our planet such as rising sea levels, increased frequency and severity of extreme weather events, and accelerated ice melt¹³.

Why do some places experience record-breaking cold and snowfall if the climate is warming?

A warming climate results in the disruption of the Earth’s natural processes. Extreme cold in areas is due to the decreasing stability of the polar vortex. Polar vortices are low-pressure systems located in the north and south poles. The low pressure of this vortex typically keeps cold air contained in the arctic regions. As the arctic warms, the pressure in the vortex weakens resulting in the expansion of the polar vortex into more temperate areas¹⁴. Additionally, a warmer climate results in more water vapor in the air which can lead to greater than average snowfall in some areas¹⁵.

Why be concerned about a degree or two change in the average global temperature?

Even though one or two degrees seems insignificant, this increase in average global temperature can create widespread changes with negative impacts on natural and human systems in Lanark County and around the world. For example, some oceanic island countries are at risk of losing their entire nations due to rising sea levels¹⁶. In Canada, some of the top climate change risks include changes to agriculture and food systems, coastal communities, ecosystems, fisheries, forestry, geopolitical dynamics, governance and capacity, human health and wellness, Indigenous ways of life, northern communities, physical infrastructure, and water¹⁷.

¹² NASA (2017), *Weather or climate change?* <https://climate.nasa.gov/explore/ask-nasa-climate/2632/weather-or-climate-change/>

¹³ NASA (2022), *What’s the difference between climate change and global warming?* <https://climate.nasa.gov/faq/12/whats-the-difference-between-climate-change-and-global-warming/>

¹⁴ Science (2021), *Linking Arctic variability and change with extreme winter weather in the United States* <https://www.science.org/doi/10.1126/science.abi9167>

¹⁵ EPA (2022), *Frequently Asked Questions About Climate Change* <https://www.epa.gov/climatechange-science/frequently-asked-questions-about-climate-change#weather-climate>

¹⁶ Scientific Reports (2019), *Vulnerability to climate change of islands worldwide and its impact on the tree of life* <https://www.nature.com/articles/s41598-019-51107-x>

¹⁷ Council of Canadian Academies (2019), *Canada’s Top Climate Change Risks* <https://www.cca-reports.ca/reports/prioritizing-climate-change-risks/#:~:text=Canada%E2%80%99s%20Top%20Climate%20Change%20Risks%20identifies%2012%20major,life%2C%20northern%20communities%2C%20physical%20infrastructure%2C%20and%20water.%20>

Climate Change in Lanark County

Heat waves, floods, droughts, and storms have always been present in Ontario and Lanark County. However, the frequency and intensity of these extreme weather events are shifting. These changes threaten our local health, safety, environment, and economy. Between 1948 and 2008, the average annual temperature in Ontario increased by 1.5°C¹⁸. By 2050, it is estimated that the average annual temperature in Ontario could increase by another 2.5°C to 3.7°C¹⁹. These changes are expected to be felt locally in Lanark County.

Climate projections are simulations of Earth's future climate conditions based on assumptions of the concentrations of greenhouse gases and other atmospheric constituents. These projections capture the relationships between human actions, emissions, and climate change to help us plan and adapt to future climate conditions.

By 2050, if no action is taken to mitigate climate change, Lanark County could experience²⁰:

- A 2.1°C increase in average annual temperature
- A 14% increase in length of the frost-free season
- Roughly 5 heat waves per year (at least 3 days or longer exceeding 30°C)
- A 2 day increase in the length of heat waves, resulting in heat waves lasting around 6 days
- 15 extremely hot days (+32°C) per year
- An 8% increase in maximum 3-day precipitation
- A 15 day decrease in the number of frost days, meaning we will only experience 58 days below 0°C per year
- A 64 day increase in the number of days above 30°C, bringing the total to 95 days per year

While these changes may seem small, they will have widespread and unpredictable environmental, social, and economic consequences.

Impacts of Climate Change

Without intervention, climate change will impact all aspects of life in Lanark County. The following list, though not exhaustive, summarizes the key risks and impacts that Lanark County may experience as a result of climate change²¹.

- Heat and drought, impacting local water supply and agricultural practices
- More ice days, threatening safety and damaging infrastructure
- Damage to infrastructure, risking critical water, sanitary, and power systems
- Loss of native biodiversity, increasing the introduction of invasive species, pests, and disease
- Mental health challenges caused by climate change stressors
- Illness and disease due to increased heat stress and poor air quality
- Increase in zoonotic and vector borne diseases

¹⁸ Ontario Ministry of Health and Long Term Care (2016), *Ontario Climate Change and Healthy Modelling Study Report*. [Ontario Climate Change and Health Vulnerability and Adaptation Assessment Guidelines \(gov.on.ca\)https://www.health.gov.on.ca/en/common/ministry/publications/reports/climate_change_toolkit/climate_change_health_modelling_study.pdf](https://www.health.gov.on.ca/en/common/ministry/publications/reports/climate_change_toolkit/climate_change_health_modelling_study.pdf)

¹⁹Government of Ontario (2021), *Climate change* <https://www.ontario.ca/page/climate-change>

²⁰ Climate Atlas of Canada, <https://climateatlas.ca/>

²¹ Environment and Climate Change Canada (2019), *Canada in a Changing Climate Report* <https://changingclimate.ca/CCCR2019>.

- Disruptions to the economy as infrastructure and assets are threatened
- Soil erosion and nutrient loss impacting local agricultural systems

Planning for Corporate Change

Corporate Emissions Inventory

To achieve Milestone 1 of the Partners for Climate Protection Program, Lanark County completed a corporate greenhouse gas emissions inventory for our base year (2019). The sectors that the corporate greenhouse gas emissions inventory tracks include corporate buildings, vehicles, water and sewage, and waste. The inventory identifies which corporate sectors use the most energy and have the greatest emissions and, thus, can be used to focus resources and emission reduction strategies accordingly. The greenhouse gas inventory also provides an important benchmark from which to measure the success of the Corporate Climate Action Plan over time.

In 2019, 2,462 tonnes of CO₂e were emitted from Lanark County corporate operations. Corporate greenhouse gas emissions were estimated using electricity and gas bills, fuel reports, and waste collection tonnage reports. The largest source of corporate emissions are County-owned buildings, which account for 63% of total emissions (Figure 4). Corporate vehicles are another large source of corporate emissions, accounting for 27% of corporate emissions.

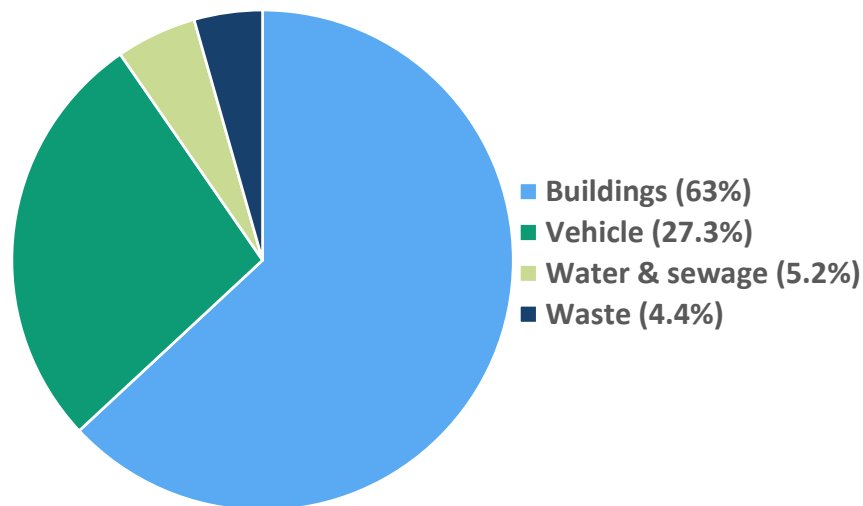


Figure 4: Lanark County's corporate greenhouse gas emissions by sector from the baseline year 2019.

Natural gas is the energy source responsible for the largest proportion (58%) of greenhouse gas emissions in Lanark County's corporate operations (Figure 5). The remaining greenhouse gas emissions are sourced from diesel (19%), electricity (13%), gasoline (9%), and propane (<1%).

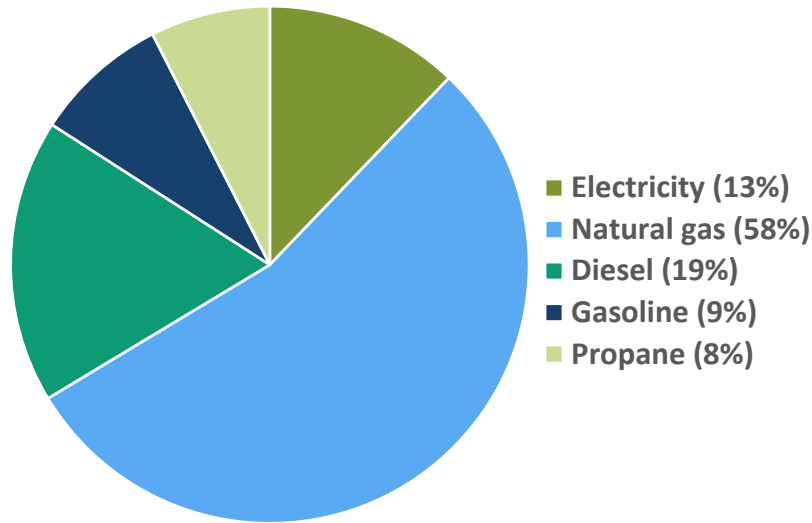


Figure 5. Lanark County's corporate greenhouse gas emissions by energy source.

Corporate Business as Usual Forecast

Business as usual (BAU) scenarios are created to help understand what would happen to greenhouse gas emissions if no action were taken. These scenarios are valuable in setting targets as any target must offset the forecasted growth in emissions. Without action, it is projected that the corporate greenhouse gas emissions will rise by 76% by 2050, for a total of 4333 tonnes CO₂e (Figure 6). The business as usual forecast assumes that corporate emissions will grow linearly with population growth. Since not all corporate sectors are expected to expand significantly by 2050 (e.g., administration and public works buildings), the current assumption of a one-to-one relationship between corporate emissions and population growth is likely an overestimation. Thus, the corporate business as usual forecast will be adjusted to reflect proposed plans for Lanark County corporate operations.

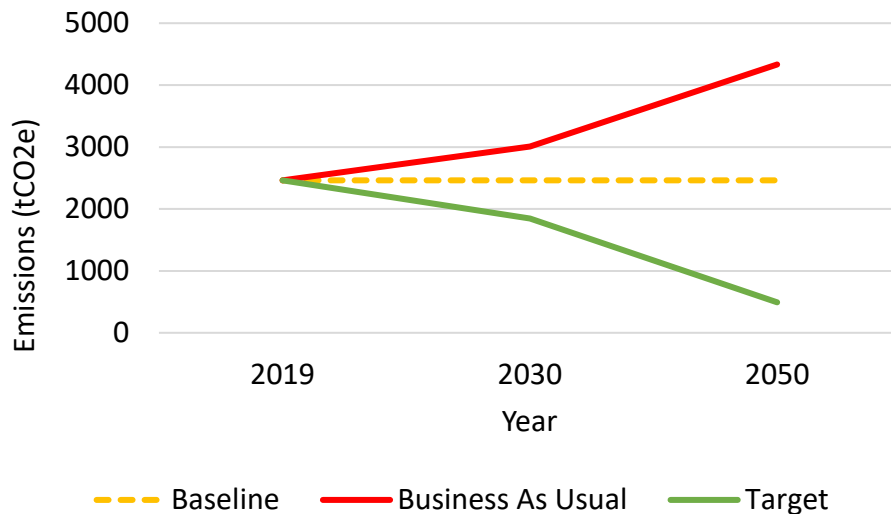


Figure 6. Lanark County corporate greenhouse gas emissions under different scenarios (baseline, business as usual, targets).

Corporate Emissions Reduction Targets

Lanark County's 2019 greenhouse gas emissions inventory will serve as the baseline for corporate emissions reduction targets. Recognizing that different mitigation actions take varying levels of time to develop, gain traction, and result in a measurable change in greenhouse gas emissions, Lanark County will adopt mid- and long-term emissions reduction targets. Lanark County has set the following corporate emissions reduction targets:

25% below 2019 levels by 2030

80% below 2019 levels by 2050

The mid- and long-term targets will be assessed regularly and have the potential to be increased upon progress and technological advancements.

Taking Action - Corporate Climate Action Plan

Overview and Structure

The Corporate Climate Action Plan outlines how Lanark County will reduce greenhouse gas emissions in its corporate operations and services including County-owned buildings, fleet, streetlights, water and sewage treatment, and solid waste. While these emissions make up a small proportion of all of Lanark County's emissions, creating a corporate Climate Action Plan presents an opportunity for the County to demonstrate leadership in climate action.

During the Corporate Climate Action Plan development process, 24 goals were identified to reduce Lanark County's corporate greenhouse gas emissions and build resilience to the impacts of climate change. Working with the Lanark County Climate Action Committee, these goals were refined and prioritized based on the following four guiding principles:

- 1. Create a climate conscious culture and community**
- 2. Eliminate fossil fuels**
- 3. Optimize energy/water efficiency and increase renewable energy generation**
- 4. Sustainably manage waste towards a circular economy**

These guiding principles serve as the vision for the plan and provide a framework for current and future additions to the Climate Action Plan.

The Corporate Climate Action Plan is organized by five major themes which seek to address the greatest areas of greenhouse gas emissions within the corporation of Lanark County:

- 1. Education**
- 2. Transportation and equipment**
- 3. Buildings and energy**
- 4. Waste diversion and management**
- 5. Lanark County Housing Corporation**

Theme 5 outlines actions that can be taken through the improvement of the Lanark County Housing Corporation (LCHC). The LCHC provides over 500 dwellings for low-income tenants in 29 developments

across the County²². County staff are currently working to identify opportunities and secure funding to reduce the climate impact of the LCHC and create opportunities for tenants to participate in climate change mitigation and adaptation.

Each corporate goal has information on potential benefits, cost and funding source, department or person responsible, approximate timeframe for completion, and estimated greenhouse gas reductions. The goals may evolve over time as the plan progresses.

Theme 1 – Education

Education is the first theme of the Corporate Climate Action Plan. Reducing corporate emissions will be a collective effort of all Lanark County staff and decision makers. By building their knowledge, attitudes, and behaviours towards climate change, Lanark County will be able to respond more promptly to reach our emission reduction targets.

Goal 1.1 - Modify all Council reports to include a section for climate impact to assess every Council decision using the climate lens tool for whether it reduces or eliminates the use of fossil fuels and adheres to the four pillars of Sustainable Lanark	
Potential Benefits	Reduce fossil fuels, encourage a climate conscious culture
Cost & Funding Source	None
Person or Department Responsible	CAO / Clerk
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Indirect; Medium
Goal 1.2 - Raise staff awareness of corporate climate initiatives through mini campaigns	
Potential Benefits	Encourage a climate conscious culture
Cost & Funding Source	None
Person or Department Responsible	Climate Environmental Department
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Indirect; Low
Goal 1.3 - Raise staff awareness of corporate climate initiatives through mini campaigns	
Potential Benefits	Encourage a climate conscious culture
Cost & Funding Source	None
Person or Department Responsible	Climate Environmental Department
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Indirect; Low

²² Lanark County (2020), Tenant Resources <https://www.lanarkcounty.ca/en/family-and-social-services/tenant-resources.aspx>

Theme 2 – Transportation and Equipment

Corporate fleet, which includes Lanark County owned vehicles and equipment, is the second largest emitting corporate sector, responsible for 27.3% of corporate greenhouse gas emissions. Transitioning to electric vehicles and equipment will be essential in reaching our corporate emission reduction targets. Where electric options are not available, the County will explore the use of low-carbon fuel.

Goal 2.1 - Upgrade 16 gas and 3 diesel fleet vehicles to electric vehicles by 2030 when electric vehicles are available/vehicles reach end of life	
Potential Benefits	Reduce fossil fuels, increase EV uptake
Cost & Funding Source	High; Public Works Budget
Person or Department Responsible	Director Public Works
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Direct; High
Goal 2.2 - Install electric vehicle charging stations at the County administration buildings for County fleet charging and for staff, councillors or the public to use	
Potential Benefits	Reduce fossil fuels, encourage a climate conscious culture
Cost & Funding Source	Medium; Public Works / Climate Change Budget
Person or Department Responsible	Facilities Coordinator
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Indirect; Low
Goal 2.3 - The procurement of any replacement or new County fleet or equipment be electric in nature, unless an electric option is not available	
Potential Benefits	Reduce fossil fuels
Cost & Funding Source	Medium; Public Works Budget
Person or Department Responsible	Director Public Works
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Direct; Medium
Goal 2.4 - All new hand power tool purchases to be electric	
Potential Benefits	Reduce fossil fuels
Cost & Funding Source	Low; Public Works Budget
Person or Department Responsible	Director Public Works
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Direct; Low

Theme 3 – Buildings and Energy

Corporate buildings, which include County offices, Lanark Lodge, and the Lanark County Housing Corporation (LCHC) portfolio, are responsible for the largest source of corporate greenhouse gas emissions (63%). To reach the corporate emissions reduction targets, it will be necessary to reduce fossil fuel usage, improve energy efficiency, and increase renewable energy generation in corporate buildings.

Goal 3.1 - Plan for the rebuild of all County buildings to be net-zero	
Potential Benefits	Reduce fossil fuel, reduce energy costs, reach net-zero
Cost & Funding Source	High; County Budget
Person or Department Responsible	CAO
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Direct; High
Goal 3.2 - Conduct a building automation system maintenance/commissioning	
Potential Benefits	Reduce fossil fuels, reduce energy costs
Cost & Funding Source	Low; County Budget
Person or Department Responsible	Facilities Coordinator
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Direct; Medium
Goal 3.3 - Install solar systems on municipal buildings where possible	
Potential Benefits	Increase renewable energy generation, reduce fossil fuels
Cost & Funding Source	Medium; County Budget
Person or Department Responsible	Facilities Coordinator
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Direct; Medium
Goal 3.4 - Install motion sensors for indoor lighting and automatic timers on all equipment that can be turned off at night	
Potential Benefits	Reduce energy costs
Cost & Funding Source	Low; County Budget
Person or Department Responsible	Facilities Coordinator
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Direct; Low
Goal 3.5 - Optimize heating and cooling efficiency in all County buildings to reduce energy consumption	
Potential Benefits	Reduce fossil fuels, reduce energy costs
Cost & Funding Source	None
Person or Department Responsible	Facilities Coordinator
Approximate Timeframe for Completion	Short-term

Expected GHG Reduction	Direct; Medium
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Theme 4 – Waste Diversion and Management

Although waste accounts for only 4% of corporate emissions, Lanark County will continue to improve our waste management practices to reduce the amount of waste that enters the landfill.

Goal 4.1 - Join the Blue Communities Project and phase out the sale of bottled water in municipal facilities and at municipal events	
Potential Benefits	Reduce plastic waste, encourage a climate conscious culture
Cost & Funding Source	None
Person or Department Responsible	Climate Environmental Department & Local Municipalities
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Indirect; Low
Goal 4.2 - Install water refill stations in all municipal buildings to replace water coolers	
Potential Benefits	Reduce fossil fuels from water transportation, reduce plastic waste
Cost & Funding Source	Low; County Budget
Person or Department Responsible	Facilities Coordinator
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Indirect; Low
Goal 4.3 - Launch an enhanced recycling program for plastic, glass, metal and food waste (e.g., Terracycle 25% of waste)	
Potential Benefits	Increase recycling, divert waste from landfills
Cost & Funding Source	Low; County Budget
Person or Department Responsible	Climate Environmental Department
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Indirect; Low
Goal 4.4 - Purchase 100% recycled paper	
Potential Benefits	Reduce waste, encourages a climate conscious culture
Cost & Funding Source	Low; County Budget
Person or Department Responsible	All departments
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Indirect; Low

Theme 5 – Lanark County Housing Corporation

The Lanark County Housing Corporation (LCHC) is captured within the corporate buildings sector in the greenhouse gas emissions inventory and accounts for 47% of corporate emissions alone. The LCHC

provides over 500 dwellings for low-income tenants, in 29 developments across the County. The affordable housing sector faces unique challenges in undertaking energy efficiency projects including, but not limited to, an aging housing stock and limited staff and resource capacity. The Climate and Environmental Department will continue to work with the LCHC to help reduce its climate impact.

Goal 5.1 - Complete energy audits to identify the most effective energy-saving opportunities and prioritize projects when possible	
Potential Benefits	Identify opportunities to improve efficiency and reduce energy costs and greenhouse gas emissions
Cost & Funding Source	High; GMF / Social Services Budget / Climate Change Budget
Person or Department Responsible	Social Services Department
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Indirect; High
Goal 5.2 - Construct new buildings to be energy efficient	
Potential Benefits	Reduce fossil fuels, reduce energy costs
Cost & Funding Source	High; GMF / Social Services Budget
Person or Department Responsible	Social Services Department
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Direct; High
Goal 5.3 - Consider electric heat pumps in the replacement of electrical baseboards and gas furnaces/boilers at end of life	
Potential Benefits	Reduce fossil fuels, reduce energy costs, increase tenant comfort
Cost & Funding Source	High; GMF / Social Services Budget
Person or Department Responsible	Social Services Department
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Direct; High
Goal 5.4 - Improve building envelope performance to reduce demand on heating and cooling systems, reduce energy loss, and increase tenant comfort (e.g., increase existing insulation, replace windows and doors with high efficiency models as needed)	
Potential Benefits	Reduce fossil fuels, reduce energy costs, increase tenant comfort
Cost & Funding Source	Medium; Social Services Budget
Person or Department Responsible	Social Services Department
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Direct; High
Goal 5.5 - Improve domestic hot and cold water system efficiency to reduce energy costs and losses (e.g., upgrading to high efficiency systems when system is at end of life, installing pipe insulation and tank insulator blankets etc.)	
Potential Benefits	Reduce fossil fuels, improve efficiency, reduce energy costs
Cost & Funding Source	Medium; Social Services Budget

Person or Department Responsible	Social Services Department
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Direct; Medium
Goal 5.6 - Replace appliances beyond their service life with Energy Star models	
Potential Benefits	Reduce fossil fuels, improve efficiency, reduce energy costs
Cost & Funding Source	Medium; Social Services Budget
Person or Department Responsible	Social Services Department
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Direct; Medium
Goal 5.7 - Encourage energy efficient practices by increasing tenant education (e.g., providing energy efficient tips through mailing list, posters in common spaces etc.)	
Potential Benefits	Improve efficiency, reduce energy costs
Cost & Funding Source	None
Person or Department Responsible	Climate Environmental Department / Social Services Department
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Indirect; Low
Goal 5.8 - Explore the conversion of areas to pollinator habitat on managed properties	
Potential Benefits	Increase pollinator habitat, reduce emissions from mowing and maintenance, increase resident engagement
Cost & Funding Source	Low; CC budget
Person or Department Responsible	Climate Environmental Department / Social Services Department
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Direct; Low

Planning for Community Change

Community Emissions Inventory

To achieve Milestone 1 of the Partners for Climate Protection Program, Lanark County completed a community greenhouse gas emissions inventory for our base year (2019). The sectors that the community emissions inventory tracks include stationary energy, transportation, waste, agriculture, and forestry. The greenhouse gas inventory identifies which community sectors use the most energy and have the greatest emissions and, thus, can be used to focus resources and emission reduction strategies accordingly. The community greenhouse gas inventory also provides an important basis from which to measure the success of the Community Climate Action Plan over time.

In 2019, 696,972 tonnes of CO₂e were emitted from the Lanark County community as a whole. Community greenhouse gas emissions were estimated using total electricity and gas data from Hydro One, Enbridge, and Ottawa River Power Corp.; vehicle registration and vehicle kilometres travelled data

from the Clean Air Partnership; waste data from each municipality; and forest carbon sequestration and livestock emission estimates from Greenscale. On-road transportation is the largest source of greenhouse gas emissions in the community, accounting for 63.6% of total emissions (Figure 7). The second largest source of community emissions is residential buildings, which account for 16.6% of community emissions.

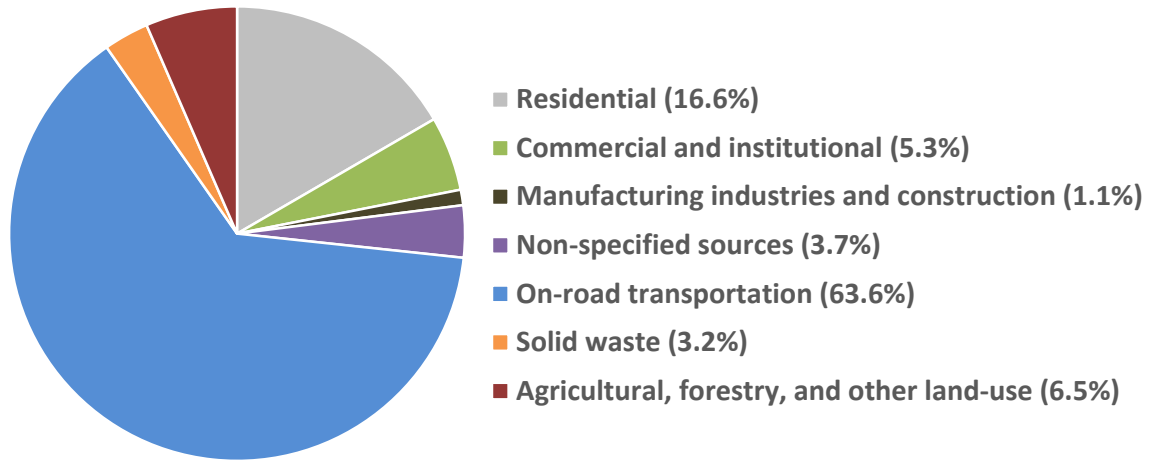


Figure 7: Lanark County's community greenhouse gas emissions by sector from the baseline year 2019.

On-road transportation fuel is the energy source responsible for the largest proportion (70%) of greenhouse gas emissions from Lanark County as a whole (Figure 8). The remaining greenhouse gas emissions are sourced from natural gas (20%), electricity (3%), fuel oil (4%), and propane (3%).

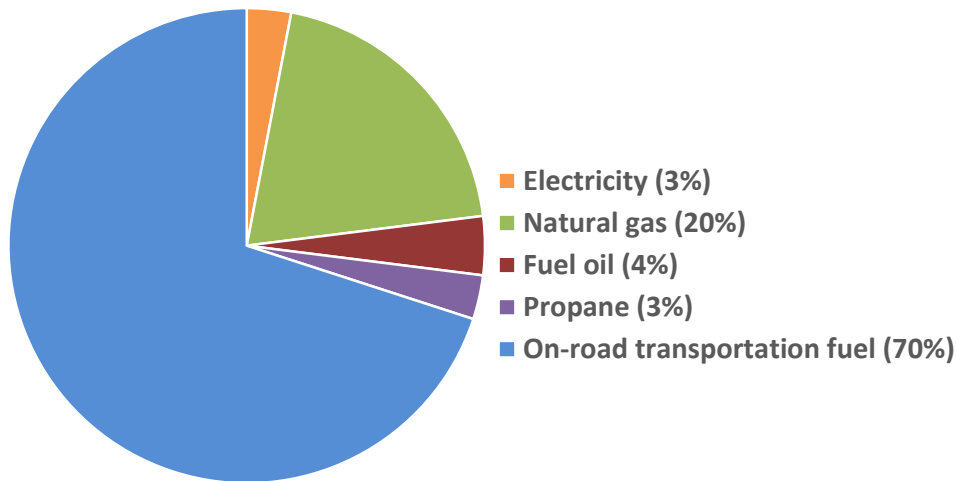


Figure 8. Lanark County's community greenhouse gas emissions by energy source.

Community Business as Usual Forecast

Business as usual (BAU) scenarios are created to help understand what would happen to greenhouse gas emissions if no action were taken. Without action, by 2050, it is projected that community emissions will increase to 747,821 tonnes CO₂e. The emissions are based on several assumptions including the

expected growth rate of this area. These scenarios are valuable in setting targets as any target must offset the forecasted growth. The community BAU scenario assumes a 0.92% annual compounded growth in all sectors except solid waste/wastewater (1.84%) and agriculture/forests (0%). It factors in a 0.75% reduction in transportation and stationary energy sectors, taking into consideration efficiency improvements and increased carbon intensity of the provincial electricity grid, which reflects a net BAU growth of 0.17% per year for those two sectors.

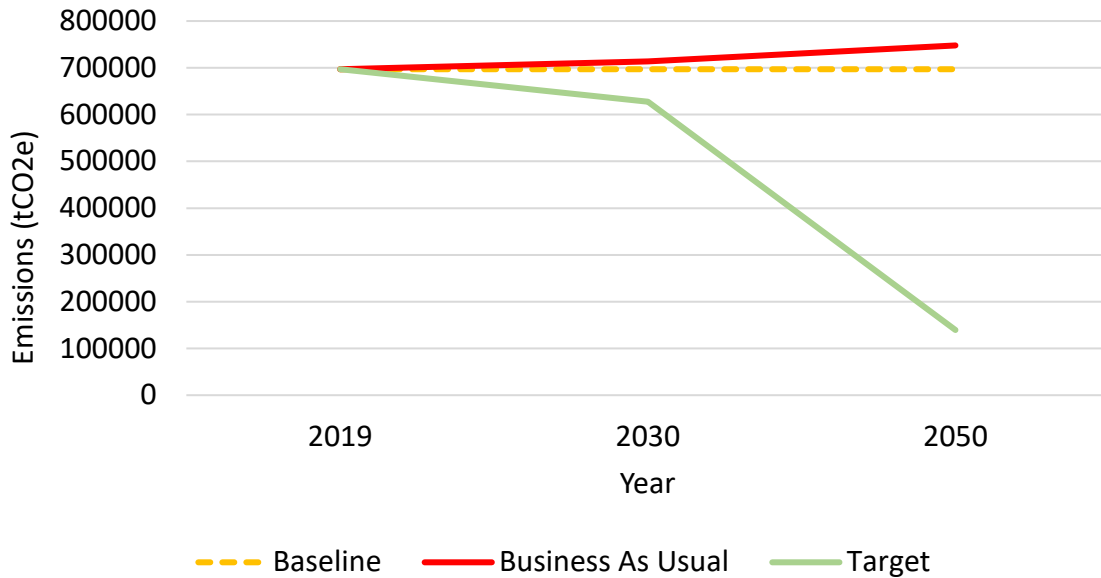


Figure 9. Community greenhouse gas emissions under different scenarios (baseline, business as usual, emission reduction targets).

Community Emissions Reduction Targets

Lanark County’s 2019 greenhouse gas emissions inventory will serve as the baseline for community emission reduction targets. Recognizing that different mitigation actions take varying levels of time to develop, gain traction, and result in a measurable change in greenhouse gas emissions, Lanark County will adopt mid- and long-term emissions reduction targets. Lanark County has set the following community emissions reduction targets:

10% below 2019 levels by 2030

80% below 2019 levels by 2050

The mid- and long-term targets will be assessed regularly and have the potential to be increased upon progress and technological advancements.

Taking Action - Community Climate Action Plan

Overview and Structure

The Community Climate Action Plan outlines how Lanark County will reduce greenhouse gas emissions in the community at large. Community sources of greenhouse gas emissions include stationary energy (residential, commercial, institutional, and industrial); transportation; and waste.

During the Community Climate Action Plan development process, a variety of goals were identified to reduce Lanark County’s greenhouse gas emissions and build resilience to the impacts of climate change. Through a deliberative process with the Lanark County Climate Action Committee, these goals were refined and prioritized based on the following four guiding principles:

1. Create a climate conscious culture and community
2. Eliminate fossil fuels
3. Optimize energy/water efficiency and increase renewable energy generation
4. Advance the use of nature-based solutions in climate change management
5. Sustainably manage waste towards a circular economy
6. Collaborate with community stakeholders
7. Increase funding, accessibility, and education

The Community Climate Action Plan is organized by five major themes:

1. Transportation
2. Buildings and Energy
3. Natural Heritage and Resources
4. Waste Diversion and Management
5. Planning

The Community Climate Action Plan consists of 21 goals. Each community goal consists of a recommended approach, which outlines specific actions to help implement and achieve the goal. The recommended approaches do not outline each action needed to achieve the goal, but rather act as a guide for progressing towards each goal in the interim version of the Climate Action Plan. Recommended approaches may evolve over time as the plan and technology progress.

Theme 1 – Transportation

On-road transportation is the largest emitting community sector, responsible for 63.6% of community greenhouse gas emissions. Due to the geographic size and dispersed nature of Lanark County, community members, particularly commuters and those living in rural areas, are highly dependent on personal vehicles for transportation. The goals outlined in this section address how Lanark County aims to reduce emissions in the transportation sector.

Goal 1.1 - Increase electric vehicle uptake and local charging infrastructure for public access	
Recommended Approach	Contract companies to install chargers on public streets, and municipal buildings or property to increase public access to charging
	Launch an educational campaign for a electric vehicles that encourages vehicle owners to take advantage of electric vehicle subsidy programs
Potential Benefits	Reduce fossil fuels, increase electric vehicle uptake
Cost & Funding Source	Medium; Provincial gas tax and NRCan Zero Emission Vehicle Infrastructure Program
Person or Department Responsible	County and local municipalities
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Direct; Medium
Goal 1.2 - Electrify municipal and community fleet vehicles as part of their replacement cycle	

Recommended Approach	Partner with Lanark Transportation Association to electrify fleet
	Encourage local municipalities to take advantage of electric vehicle subsidy programs
Potential Benefits	Reduce fossil fuels, increase electric vehicle uptake
Cost & Funding Source	NRCan Zero Emission Vehicle Infrastructure Program
Person or Department Responsible	Climate and Environmental Department; partner with Lanark Transportation
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Direct; High
Goal 1.3 - Explore the use of low-carbon fuels (e.g., biodiesel blends) in suitable municipal fleet vehicles	
Recommended Approach	Connect with municipalities who use biodiesel as a means to reduce greenhouse gas emissions (e.g., City of Brampton, York Region, Guelph, Kingston etc.)
	Combine local municipalities' procurement needs for biodiesel for use in heavy-duty diesel fleets
Potential Benefits	Reduce fossil fuels
Cost & Funding Source	TBD
Person or Department Responsible	County and local municipalities
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Direct; Medium
Goal 1.4 - Develop an Active Transportation Master Plan as part of the Official Plan	
Recommended Approach	Encourage active transportation (i.e. walking and cycling) by coordinating and expanding accessible trails, comfortable walking routes, safe pedestrian crossing, and cycling infrastructure such as connecting trails and paved shoulders
	Facilitate policy changes to create 15-minute communities that are less car-dependent than conventional subdivisions
	Partner with school boards to create walking school bus program
Potential Benefits	Reduce fossil fuels, improve public health and accessibility
Cost & Funding Source	Medium; Public Works
Person or Department Responsible	Public Works, Planning Department, CAO, partner with local public health unit
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Indirect; Low
Goal 1.5 - Reduce single occupancy automated vehicle trips by providing local transit, carpooling and ridesharing solutions suitable for rural communities	
Recommended Approach	Investigate and plan to adopt innovative public transit systems that are being implemented in similar small towns and rural communities
	Launch a county-wide carpool program that also encourages carpooling by promoting and strengthening the local carpool lot network
Potential Benefits	Reduce fossil fuels, improve accessibility
Cost & Funding Source	TBD
Person or Department Responsible	CAO, Climate and Environmental Department; partner with Lanark Transportation

Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Direct; Medium

Theme 2 – Buildings and Energy

Residential, commercial, industrial, and institutional buildings are responsible for 21.9% of community emissions, largely due to the use of natural gas. The following 5 goals outline how Lanark County plans to address emissions within community buildings.

Goal 2.1 - Develop and support the delivery of a local home energy retrofit program	
Recommended Approach	Investigate and develop a municipal loan or municipally led financing program for deep energy retrofits
	Organize energy retrofit training sessions and workshops for contractors and residents
	Update the list of energy efficiency programs on the county website
	Expand the existing Insulate Lanark program
	Establish neighborhood action networks to advise homeowners on actions they can take to improve the energy efficiency of their homes
Potential Benefits	Reduce fossil fuels, increase energy efficiency, reduce costs, improve home comfort, increase participation in programs and incentives
Cost & Funding Source	High; GMF (home energy retrofit program) and CC budget, Canada Greener Homes Grant
Person or Department Responsible	Climate and Environmental Department, Climate Network Lanark, CAO
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Direct; High
Goal 2.2 - Launch a campaign to increase energy/water retrofits within the industrial, commercial, and institutional sector	
Recommended Approach	Raise awareness of available funding opportunities for energy/water retrofits
Potential Benefits	Reduce fossil fuels, increase energy efficiency, reduce costs, increase participation in programs and incentives
Cost & Funding Source	Low; County Resources
Person or Department Responsible	Climate and Environmental Department
Approximate Timeframe for Completion	Short-term
Expected GHG Reduction	Direct; High
Goal 2.3 - Establish green building standards that enforce climate resilient and adaptive building designs to increase energy efficiency	
Recommended Approach	Provide incentives and/or recognition to builders and building owners for achieving high performing energy and water efficiency standards
	Stimulate the development of high-performance new building construction towards net-zero
Potential Benefits	Reduce fossil fuels, reduce energy cost, stakeholder, and community engagement
Cost & Funding Source	Medium; Canada Greener Homes Grant, CC budget

Person or Department Responsible	Climate and Environmental Department
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Indirect; High
Goal 2.4 - Encourage ground mount solar photovoltaics (PV) developments where suitable (for net metering and microgrids) and solar thermal for domestic hot water use	
Recommended Approach	Identify underutilized municipal and private lands that could be suitable for ground-mounted solar PV (e.g., large parking lots, industrial/business parks, brownfields)
	Connect with local renewable energy co-ops for financing and local investment opportunities
Potential Benefits	Reduce fossil fuels, reduce energy costs, increase renewable energy generation
Cost & Funding Source	None
Person or Department Responsible	Climate and Environmental Department
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Direct; High
Goal 2.5 - Explore opportunities to utilize other renewable fuel sources and technologies where feasible	
Recommended Approach	Engage and provide information to citizens on renewable fuel sources and technologies they can utilize
	Explore cooperative purchasing approaches to procure a regional supply of renewable natural gas (RNG)
Potential Benefits	Reduce fossil fuels
Cost & Funding Source	None
Person or Department Responsible	Climate and Environmental Department
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Indirect; High

Theme 3 – Natural Heritage and Resources

Natural features, including wetlands, forests, and other green spaces are important carbon sinks within Lanark County. These spaces will also play an important role in climate adaptation as they offer essential services including stormwater management, water filtration, air quality improvements, and heat reduction. Lanark County will continue to work to protect our natural features while also increasing our understanding of them.

Goal 3.1 - Increase the managed forested area and tree canopy within Lanark County	
Recommended Approach	Collaborate with local municipalities to create an urban forest/reforest strategy (1 Million Trees Program) and/or a tree preservation policy
Potential Benefits	Sequester carbon, protect natural resources, increase forest cover, improve public health and access to greenspace, improve biodiversity
Cost & Funding Source	Medium; CC budget and local municipal budgets

Person or Department Responsible	Climate and Environmental Department, County Planner, and local municipalities; Partner with RVCA
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Indirect; Medium (Carbon offsets)
Goal 3.2- Conduct studies to determine and protect the carbon sequestration and climate resilience value of wetlands, greenspaces and other naturalized areas within the County	
Recommended Approach	Support the identification, protection, restoration, and creation of wetlands
	Work with local Conservation Authorities, NGOs, and lake associations to protect watershed health (i.e., through promotion of stewardship practices, water resources management, hazard mitigation, land-use planning, and drinking water source protection)
	Promote backyard pollinator habitat creation with native plants to protect native biodiversity and store carbon in the soil
	Protect and restore areas that have high carbon sequestration and biodiversity values by providing funding and resources to support local organizations committed to supporting landowner stewardship (ALUS Lanark)
Potential Benefits	Sequester carbon, protect natural resources, increase forest cover, improve public health and access to greenspace, improve biodiversity
Cost & Funding Source	Medium; CC budget, Public Works budget
Person or Department Responsible	Climate and Environmental Department, County Planner and local municipalities; Partner with RVCA, MVCA Ducks Unlimited, Climate Network Lanark, The Land Between, Lake Associations, Canadian Wildlife Federation, ALUS
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Indirect; Medium
Goal 3.3 - Include the use of green infrastructure and natural heritage to serve local needs as the County continues to develop	
Recommended Approach	Work with local municipalities, Indigenous Peoples, agencies, NGOs, and others to map, assess, protect, restore, manage, and monitor natural heritage systems where a key approach is to strengthen related land use policies and practices
	Enforce urban design and redevelopment approaches that incorporate natural systems and green infrastructure into site improvements, greenspaces, and stormwater management
Potential Benefits	Sequester carbon, protect natural resources, restore degraded land, improve landscape connectivity, prevent carbon loss from land use change, improve biodiversity, improve climate change mitigation, preserve and/or improve ecosystem services
Cost & Funding Source	None
Person or Department Responsible	Climate and Environmental Department, County planner, local municipalities; partner with The Land Between and Ducks Unlimited Canada
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Indirect; Low
Goal 3.4 - Allow cooperative farming and community gardening on suitable County-owned lands and encourage local farms to produce more food for local consumption	

Recommended Approach	Encourage local farms to produce more food for local consumption by advocating for funding and municipal by-laws that support local food storage infrastructure, abattoirs, food processing, and on-farm slaughter
	Make County lands available for cooperative farming and community gardening
Potential Benefits	Produce local food for local consumption, reduce food transportation emissions, farmer engagement
Cost & Funding Source	None
Person or Department Responsible	Climate and Environmental Department, CAO
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Indirect; Low
Goal 3.5 - Promote the adoption of sustainable livestock and crop management practices	
Recommended Approach	Advance ecological agriculture practices and sustainable livestock management practices through some form of public-private partnership
	Explore options to provide training and/or agronomic consultation
	Seek and support financial supports for farmers to invest in no-till agriculture equipment
Potential Benefits	Sequester carbon, protect natural resources, restore degraded land
Cost & Funding Source	None
Person or Department Responsible	Climate and Environmental Department; partner with agricultural organizations
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Indirect; Medium
Goal 3.6 - Promote biogas energy recovery for use in aerobic digestion - combined heat and power (AD-CHP) systems on farms	
Recommended Approach	Explore the creation of a biogas farmers' cooperative and other strategic partnerships that aim to increase education and affordability of implementing these types of systems
Potential Benefits	Sequester carbon
Cost & Funding Source	None
Person or Department Responsible	Climate and Environmental Department
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Indirect; Low

Theme 4 – Waste Diversion and Management

Waste only accounts for 3.2% of Lanark County’s community emissions. However, emissions from the waste sector are projected to grow the most proportionally from 2019 – 2050 when compared to other sectors due to the roughly one-to-one relationship between population growth and waste production. Lanark County will continue to assist local municipalities and community members in improving their waste management practices to support a circular economy.

Goal 4.1 - Identify sustainable solid waste and recycling solutions for municipalities	
Recommended Approach	Conduct a waste audit that includes all organic materials and recyclables and evaluates GHG produced in the transportation of materials to the waste sites
	Divert municipal solid waste from landfills by investigating waste conversion or recycling solutions such as Sustane Technologies Inc. proposal to build a facility in Renfrew County
	Launch soft plastics recycling system
Potential Benefits	Divert organic waste and recyclables from landfills, reduce methane production, sustainable waste management, community engagement
Cost & Funding Source	TBD
Person or Department Responsible	Climate and Environmental Department, CAO, local municipalities
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Direct; Medium
Goal 4.2 - Optimize organic waste diversion	
Recommended Approach	Explore opportunities to improve organic waste diversion and provide compost and resources to residents, businesses, farmers, and other stakeholders (e.g., fungal dominant compost, yard waste, scrap wood)
	Promote online platforms that allow residents, farmers, and businesses to connect with people in Lanark County who will receive and compost their organic waste (e.g., Sharewaste)
	Create a unifying plan for organic waste management systems that benefits from a large reach/bulk buying and that promotes additional household organic waste management systems (e.g., Pay As You Throw)
	Broker food rescue partnerships between social organizations, farms, and food industries through organizations such as Second Harvest, which also offers funding
Potential Benefits	Divert organic waste from landfills, reduce methane production, community engagement, reduce municipal costs
Cost & Funding Source	Medium; County resources and local municipalities
Person or Department Responsible	Climate and Environmental Department, local municipalities
Approximate Timeframe for Completion	Mid-term
Expected GHG Reduction	Direct; Medium
Goal 4.3 - Explore utilizing organic waste and treated biosolids for 3rd party Renewable Natural Gas (RNG) production	
Recommended Approach	Identify regional opportunities for Lanark County municipalities to participate in RNG production
Potential Benefits	Reduce fossil fuels, renewable fuel
Cost & Funding Source	None
Person or Department Responsible	Climate and Environmental Department and local municipalities
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Indirect; Medium
Goal 4.4 - Advance combined heat and power in anaerobic Waste and Water Treatment Facilities (WWTF)	

Recommended Approach	Explore the feasibility of utilizing biogas fueled CHP systems for energy use on site in WWTF
Potential Benefits	Reduce fossil fuels, renewable fuel
Cost & Funding Source	None
Person or Department Responsible	Climate and Environmental Department and local municipalities
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Indirect; Low

Theme 5 - Planning

Climate change adaptation means planning for and acting on the anticipating impacts of climate change. By taking action to plan for and adapt to the changing climate, Lanark County can build a stronger and more resilient community.

Goal 5.1 - Incorporate community stakeholders in climate adaptation planning	
Recommended Approach	Consult with Indigenous communities on future revisions of the Asset Management Plan to incorporate natural assets (e.g., watersheds, wetlands, forests) Establish a strategy to create an inclusive adaptation plan that captures Lanark County's risks and vulnerabilities to climate change (e.g., health, food security/sovereignty, environmental hazards, improved land-use, safety measures)
Potential Benefits	Better preparedness for the future, increased transparency, inclusivity, and consideration
Cost & Funding Source	None
Person or Department Responsible	Climate and Environmental Department, Planning Departments of the County and local municipalities, CAO, community stakeholders
Approximate Timeframe for Completion	Long-term
Expected GHG Reduction	Indirect; Low

Implementing the Plan

Key Implementation Strategies

Lanark County is moving forward to develop and implement the actions outlined in the Lanark County Climate Action Plan. To successfully implement the Climate Action Plan, see reductions in our corporate and community greenhouse gas emissions, and overcome barriers, implementing the plan requires a strategic approach.

In 2019, the Clean Air Partnership released a report on the main drivers and barriers to the implementation of municipal Climate Action Plans in Ontario²³. The report identified five primary cross-sectoral drivers of climate action implementation: funding, community partnerships, staff capacity, institutionalizing climate action, and the strategic prioritization of climate initiatives. This report also

²³ Clean Air Partnership (2019), Assessing the State of Climate Action in Ontario Municipalities: Drivers and Barriers to Implementation Report. <https://www.cleanairpartnership.org/wp-content/uploads/2019/04/Drivers-and-Barriers-to-Implementation-Report-V4.pdf>

identified low-climate literacy as one of the main barriers to successful implementation of Ontario municipalities' Climate Action Plans.

Lanark County will adopt six main implementation strategies to successfully implement the Lanark County Climate Action Plan. Five of the implementation strategies align with the implementation drivers identified by the Clean Air Partnership and one strategy is focused on community engagement and education to ensure that the Lanark County Climate Action Plan remains community-centered:

1. Leveraging funding
2. Building community partnerships
3. Increasing staff capacity
4. Institutionalizing climate action
5. Strategically prioritizing climate initiatives
6. Effectively engaging and educating community

Leveraging Funding

Securing funding is a critical driver of successful climate action implementation as identified by the Clean Air Partnership. Lanark County will implement the Climate Action Plan by leveraging available funding programs from the federal and provincial governments, as well as third-party organizations.

Available funding programs that Lanark County can capitalize on to support climate initiatives include:

- [Natural Resources Canada - Zero Emission Vehicle Infrastructure Program](#)
- [FCM - Green Municipal Fund](#)
- [Government of Canada – Disaster Mitigation and Adaptation Fund](#)
- [Government of Canada – Rural Transit Solutions Fund](#)
- [Municipal Asset Management Program | FCM](#)

Lanark County will continue to monitor and seek funding as more opportunities become available.

Lanark County will also advance the implementation of climate initiatives by educating community members, businesses, and local organizations on available funding and incentive opportunities. These may include funding opportunities from federal and provincial governments, conservation authorities, and organizations such as Enbridge Gas and Hydro One. A list of active funding programs will be available in the Appendix.

Building Partnerships

To effectively implement climate initiatives and reduce greenhouse gas emissions, climate action needs to be a shared responsibility between local governments and community organizations such as utilities groups, non-governmental organizations, conservation authorities and groups, educational institutions, and other interested parties. Developing long-term partnerships, whether local in origin or expanding beyond the County, is key to effective implementation of municipal Climate Action Plans as they leverage the skills and expertise of the partner organization.

Establishing strong community partnerships maximizes efficiency, reach, cost-effectiveness, and credibility of climate initiatives. As climate initiatives are implemented from the Lanark County Climate

Action Plan, we will work to develop community partnerships to help expand their reach and success. Examples of potential community partners include:

- Utilities groups
- Community groups
- Non-profit organizations
- Local schools
- Conservation authorities
- Local businesses and associations
- Academic institutions
- Other municipalities

The following partnerships have already been developed and can continue to expand over the implementation period: Climate Network Lanark, ALUS Lanark, EnviroCentre, Sustainable Kingston, and Greenscale. Lanark County will continue to maintain these partnerships while seeking additional opportunities to further enrich climate initiatives.

While implementing the Lanark County Climate Action Plan, it will also be critical to stay informed about ongoing innovation, funding opportunities, and technological developments through organizations such as the Clean Air Partnership, Canadian Green Building Council, Efficiency Canada, and QUEST Canada, as well as other sectoral stakeholders and academic institutions.

Increasing Staff Capacity

Having adequate municipal staff to coordinate climate initiatives, liaise with community partners, coordinate outreach, raise awareness of ongoing climate programs, and apply to and administer grants is integral to successfully implement the Lanark County Climate Action Plan. Dedicated climate staff will also increase the capacity to integrate greenhouse gas reduction objectives into a greater number of municipal policies, plans, and programs.

It is recommended that County Council continue to support the funding for the Climate and Environmental Department, as it is integral to the successful implementation of the Climate Action Plan. Additionally, County Council should consider allocating a portion of the budget to a grant administrator dedicated to monitoring, selecting, and applying for applicable funding streams. Due to the time-intensive nature of securing and monitoring funded projects, it is noted by other Ontario municipalities that having a grant administrator has been advantageous to the success of their climate action plans²⁴.

Institutionalizing Climate Action

Embedding Lanark County's commitment to climate action into formalized plans, policies, and decision-making processes will be key to implementing the Climate Action Plan. Without this level of accountability, the Climate Action Plan poses the risk of being seen as separate from core business activities and decisions. The adoption of the Lanark County Climate Lens was the first step in incorporating climate change risks and impacts into Council decisions. The Climate Lens was designed to make climate change a local municipal priority, make staff and councilors aware of the climate impact of their decisions, and increase the transparency of decision-making.

Moving forward, Lanark County can further institutionalize climate action by incorporating climate goals and initiatives into relevant official plans and budgets; for example, those relating to land-use, asset

²⁴ Ibid 24

management, development, and adaptation and emergency planning. These plans often have strong overlap with Climate Action Plans and can act as official support to its implementation.

To keep the Climate Action Plan relevant and continuous, staff from the Climate and Environmental Department will regularly report to Council on progress and accomplishments. The Climate Action Plan will also be reviewed every 4 years to stay up to date with current technological developments and opportunities.

Strategically Prioritizing Climate Initiatives

To effectively manage the implementation of the Lanark County Climate Action Plan and use resources efficiently, it is necessary to prioritize a subset of climate initiatives to focus efforts and resources on for each Council term. Prioritizing climate initiatives makes it easier to secure funding, gain wider support from decision makers, and maximize climate benefits²⁵.

Effectively engaging and educating community

Throughout the duration of the implementation of the Climate Action Plan, Lanark County staff will work with community partners to continuously raise awareness of climate change and its impacts, ongoing climate initiatives, and opportunities for involvement including public funding opportunities. A communication strategy will need to be developed collaboratively with community partners and the Climate Action Working Group. It will need to include key messaging and communications approaches for various audiences including the general public, local municipalities, community organizations, and local businesses. Examples of engagement avenues include annual meetings, an online presence (i.e., website and social media), traditional media, working with existing networks and organizations, and public events. Hiring a communications intern/student could be beneficial regarding the long-term engagement of this plan.

Priority Goals

To respond quickly and effectively to the climate crisis, Lanark County will prioritize eight major climate initiatives for the current Council term (2023 – 2026). As on-road transportation represents the majority (63%) of community greenhouse gas emissions and 27.3% of corporate emissions, a significant amount of County effort and resources will be directed towards reducing emissions within the transportation sector.

1. Support the adoption of electric vehicles
2. Transition to low-carbon transportation when electric is not a viable solution
3. Advance transportation demand management programming and infrastructure
4. Increase the use of local and renewable energy generation and security
5. Improve energy efficiency of existing buildings
6. Sequester carbon and protect natural resources
7. Optimize organic waste diversion
8. Create a climate conscious community culture

²⁵ Ibid 24

The 8 priority climate initiatives encompass 10 priority community goals and 4 priority corporate goals that will be focused on for the current Council term (Table 1).

Table 1. Priority climate initiatives and goals for the current Council term (2023-2026).

Major Climate Initiative	Priority Community Goal	Priority Corporate Goal
Support the adoption of electric vehicles	1.1 Increase electric vehicle uptake and local charging infrastructure for public access	2.1 Upgrade 16 gas and 3 diesel fleet vehicles to electric vehicles by 2030 when electric vehicles are available/vehicles reach end of life
	1.2 Electrify municipal and community fleet vehicles as part of their replacement cycle	2.3 The procurement of any replacement or new County fleet or equipment be electric in nature, unless an electric option is not available
Advance transportation demand management programming and infrastructure	1.4 Develop an Active Transportation Master Plan as part of the Official Plan	N/A
	1.5 Reduce single occupancy automated vehicle trips by providing local transit, carpooling, and ridesharing solutions suitable for rural communities	
Transition to low-carbon transportation when electric is not a viable solution	1.3 Explore the use of low-carbon fuels (e.g., biodiesel blends) in suitable municipal fleet vehicles	Community goal 1.3 includes Lanark County corporate fleet
Increase the use of local and renewable energy generation and security	2.5 Explore opportunities to utilize other renewable fuel sources and technologies where feasible	N/A
Improve energy efficiency of existing buildings	2.1 Develop and support the delivery of a local home energy retrofit program	3.5 Optimize heating and cooling efficiency in all County buildings to reduce energy consumption
	2.2 Launch a campaign to increase energy/water retrofits within the industrial, commercial, and institutional sector	5.1 Complete energy audits to identify the most effective energy-saving opportunities and prioritize projects when possible
Sequester carbon and protect natural resources	3.1 Increase the managed forested area and tree canopy within Lanark County	N/A

	3.2 Conduct studies to determine and protect the carbon sequestration and climate resilience value of wetlands, greenspaces, and other naturalized areas within the County	
Optimize organic waste diversion	4.2 Optimize organic waste diversion	N/A
	4.3 Explore utilizing organic waste and treated biosolids for third part renewable natural gas (RNG) production	N/A
Create a climate conscious community culture	To be integrated into all climate initiatives through the development of an engagement strategy.	

Oversight and Governance

County Council will be responsible for adopting the Climate Action Plan and supporting the implementation of climate initiatives. The Climate and Environmental Department will continue to oversee the implementation of the plan and will encourage local municipalities to adopt the community Climate Action Plan and create their own corporate Climate Action Plans. The Climate and Environmental Department will also be responsible for liaising with community partners, raising public awareness of climate initiatives, and seeking funding. The Climate Action Working Group will continue to provide direction for the implementation of the plan during the current Council term.

Monitoring and Reporting

Monitoring the implementation of the Climate Action Plan will be critical in reaching the emission reduction targets by allowing us to understand the impact of climate initiatives. Progress of the Climate Action Plan will be reported regularly to the Climate Action Working Group at the bimonthly meetings. An annual progress report of the Climate Action Plan will be provided to County Council at the end of each year.

Measurability and performance indicators will be identified for each goal in the Climate Action Plan as it moves into the implementation stage. Performance indicators could include the number of participants or community members reached, feedback surveys of participants, greenhouse gas emission reduction quantities, return on investment, and contributions to other sustainability goals.

The greenhouse gas emissions inventory will be updated at the end of each Council term to quantify progress and ensure that staff time is focused accordingly during the next Council term. As some initiatives may take years to create a measurable difference in emissions, updating the inventory every 4 years should allow adequate time to see more noticeable reductions in greenhouse gas emissions.

The Climate Action Plan will be reviewed every 4 years, within the first year of each Council term. These reviews will provide an opportunity to adjust the plan through the addition of new goals and removal of those that have been completed. The update and revisions of this plan will ensure that the plan remains

relevant with new information and advancements in technologies and continues to reflect the evolving needs of the community.

Limitations

Understanding the limitations of the Climate Action Plan can provide those responsible for implementation and community members with an understanding of the barriers to overcome during the implementation process. Although some of these limitations may improve as the plan is implemented, some will limit the feasibility of certain goals. As new limitations present themselves over the implementation period, staff will work with the Climate Action Working Group and community partners reach viable solutions.

Greenhouse Gas Accounting

All estimates of Lanark County's greenhouse gas emissions are based off the best available data. Increasing the accuracy of greenhouse gas sources and sinks will be an important part of monitoring and the continued improvement of the plan.

Carbon Sequestration

Although there is sufficient research on understanding the carbon sequestration potential of trees and forests, there is limited data on the carbon sequestration potential of wetlands. Additionally, Lanark County's tree planting and pollinator habitat initiatives need to be assessed in greater detail as they relate to offsetting carbon. Having a more thorough understanding of how Lanark County's natural heritage offsets greenhouse gas emissions will be valuable in improving our future greenhouse gas inventories and reaching long-term climate targets.

Measurability of Climate Initiatives

Some initiatives in the Climate Action Plan will require time to gain traction and show a noticeable impact in the emission inventory. Implementing these actions early in the plan will be important but may not yield high reductions by the mid-term target year (2030). Additionally, implementing certain actions may not result in a measurable decrease in greenhouse gas emissions. For example, education, while integral to the ultimate success of climate initiatives, will pose a challenge in terms of quantifying its impact.

Geography and Population Density

Due to its size and population density, Lanark County faces various challenges in implementing climate initiatives. The dispersed settlement patterns of Lanark County make it highly dependent on vehicles for transportation, making it challenging to implement climate initiatives within the transportation sector. Other challenges in climate action typical of smaller municipalities include the limited financial resources to develop, implement, deliver, and monitor climate initiatives; and the inability to draw upon the expertise and resources present in larger urban centres, making them more dependent on external consultants²⁶. The rural nature and size of municipalities in Lanark County will continue to be addressed throughout the implementation and revision stages of the Climate Action Plan.

²⁶ Federation of Canadian Municipalities, *Small and Rural Communities Climate Action Guidebook*. https://assets-global.website-files.com/6022ab403a6b2126c03ebf95/607d839e9feb3a640fb82fd9_Small%20and%20Rural%20Communities%20Guidebook_EN.pdf

Appendix

To be completed; will detail assumptions, measurement protocols used, and methods to data collection.