

# LANARK COUNTY CLIMATE ACTION PLAN

*A climate change mitigation strategy*

October 2023



PARTNERS FOR **CLIMATE PROTECTION**

## Letter from the CAO

Dear Lanark County residents,

In recent years, climate change has become increasingly visible in Lanark County and across the globe. The impacts are being felt close to home as we experience long-lasting heat waves, the destruction of severe thunderstorms, powerful ice storms, and unprecedented wildfire seasons. These extreme weather events put strain on our infrastructure, economy, and environment, and have serious consequences for the livelihood of our community members.

On behalf of Lanark County staff, I am pleased to present the Lanark County Climate Action Plan. This plan was created in collaboration with our local municipalities, community stakeholders, and community members, and led by County Council. Many great ideas, insights, discussions, and fields of knowledge were brought forward to help build this plan. I look forward to continuing to learn how we can best respond to the evolving climate with advancements in innovation and technologies.

With extreme weather events becoming more common, the County of Lanark recognizes the urgent need to reduce our greenhouse gas emissions, prepare for climate change impacts, and become a regional leader in climate action. The Climate Action Plan outlines the goals and strategies Lanark County will take to reduce the climate impact of our buildings, transportation, waste, and land use, while also providing opportunities for local climate action. This is no small task, and the challenges of climate change can be overwhelming. However, with the continued support of our local municipalities, councillors, staff, and community members, we are eager to begin implementing the goals within this plan.

To see a meaningful reduction in greenhouse gas emissions, municipalities must act. Lanark County is committed to empowering its citizens and providing resources to learn, improve, and adapt to the climate crisis. I look forward to overseeing the implementation of this plan and participating as an individual in Lanark County.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kurt Greaves', with a long horizontal line extending to the right.

Kurt Greaves

## Acknowledgements

### 2021-2022 Climate Action Committee Members

John Fenik	Chair (June 2021 to February 2022), Town of Perth
Rickey Minnille	Chair (February 2022 to November 2022), Mississippi Mills
Susan Brandum	Climate Network Lanark
Gord Harrison	Climate Network Lanark
Richard Kidd	Beckwith Township
Ross Rankin	Town of Carleton Place
Paul Kehoe	Drummond/North Elmsley Township
Jeannie Kelso	Lanark Highlands
Tony Hendriks	Town of Perth
Shawn Pankow	Town of Smiths Falls
Bob Argue	Tay Valley Township
Kathryn Maton	Mississippi Mills
Klaas Van Der Meer	Montague Township
Michelle Rabbetts	Lanark County
Kurt Greaves	Lanark County
Jasmin Ralph	Lanark County

### 2023 Climate Action Working Group Members

Toby Randell	Chair, Town of Carleton Place
Judy Brown	Town of Perth
Rickey Minnille	Mississippi Mills
Rob Rainer	Tay Valley Township
Elizabeth Gallant	Lanark County
Kurt Greaves	Lanark County
Jasmin Ralph	Lanark County
Community representatives from Climate Network Lanark, Smiths Falls, and each of the local municipalities are included as needed dependent on the topic and scope of items discussed.	

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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

Collective action is required to address climate change. In 2019, Lanark County joined the Partners for Climate Protection (PCP) program and committed to acting on climate change through the creation and implementation of a climate action plan. The Lanark County Climate Action Plan provides an outline of goals aimed at achieving emission reductions while ensuring the resilience of our local communities.

### Climate Change in Lanark County

The effects of climate change are becoming increasingly more prominent in Lanark County. Some impacts we can expect to see as a result of climate change include:

- 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
- Disruptions to the economy as infrastructure and assets are threatened
- Soil erosion and nutrient loss, impacting local agricultural systems
- Increased risk of flooding and fire

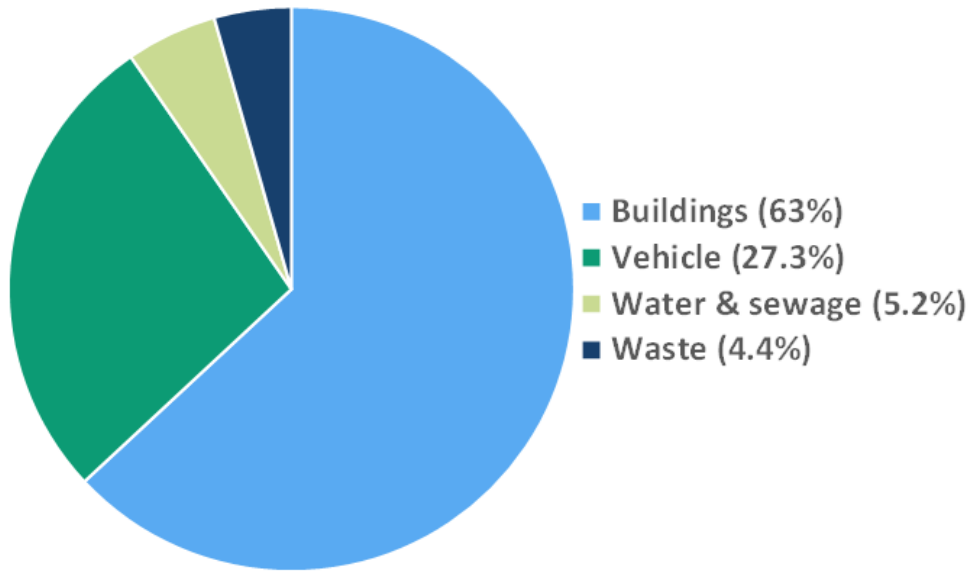
### Guiding Principles

The Climate Action Committee developed a set of seven guiding principles to guide the development of the Lanark County Climate Action Plan. The guiding principles serve as the vision for the plan and provide a framework for current and future additions to the Climate Action Plan.

- 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**

### Corporate Climate Action Plan

In 2019, 2,462 tonnes of CO<sub>2</sub>e were emitted from Lanark County corporate operations. The two largest sources of corporate greenhouse gas emissions are County buildings and vehicles. Recognizing that different actions require varying levels of time, resources, and support, Lanark County set mid- and long-term corporate emission reduction targets of 25% below 2019 levels by 2030 and 80% below 2019 levels by 2050.

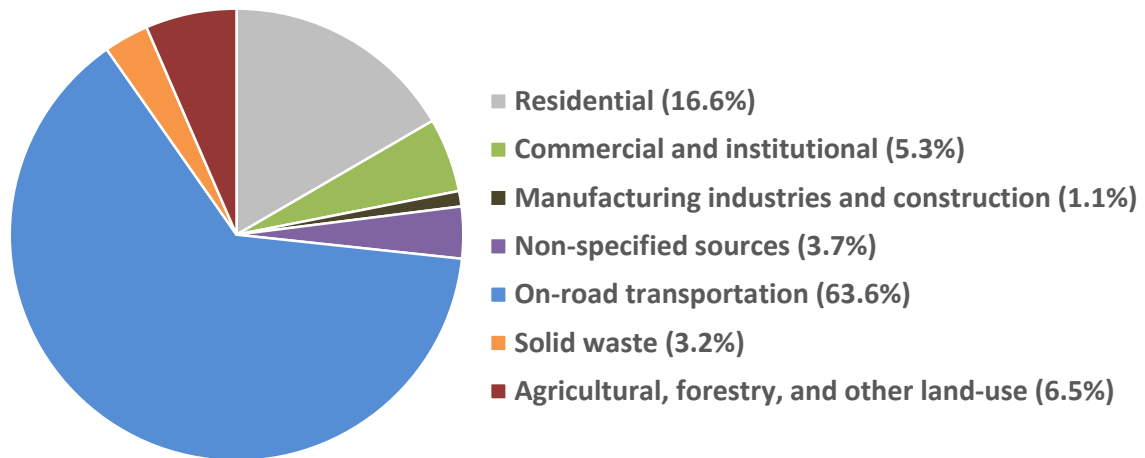


The Corporate Climate Action Plan has 29 goals that fall under the following 7 themes:

Theme	Summary of Goals
Education	Assessing the climate impact of council decisions, raising staff awareness, and encouraging staff to reduce energy consumption in the office.
Buildings and energy	Improving and optimizing building efficiency and assessing opportunities to utilize renewable energy where possible.
Lanark County Housing Corporation	Assessing the efficiency of the Lanark County Housing Corporation building portfolio to reduce fossil fuel consumption and optimize energy efficiency where possible through deep retrofits, appliance upgrading, and renewable energy sources.
Natural heritage and resources	Protecting our natural heritage and resources that sequester carbon to maintain resiliency in the changing climate.
Transportation and equipment	Transitioning to electric fleet, increasing electric vehicle infrastructure at County buildings, and purchasing electric power tools and equipment.
Waste diversion and management	Reducing plastic waste and improving the corporation's waste diversion.
Planning	Planning for and acting on the anticipated impacts of climate change through plans and policy change.

### Community Climate Action Plan

In 2019, 696,972 tonnes of CO<sub>2</sub>e were emitted from the Lanark County community as a whole. The two largest sources of community greenhouse gas emissions are on-road transportation and residential buildings. Recognizing that different actions require varying levels of time, resources, and support, Lanark County set mid- and long-term community emission reduction targets of 10% below 2019 levels by 2030 and 80% below 2019 levels by 2050.



The Community Climate Action Plan has 21 goals that fall under the following 5 themes:

Theme	Summary of Goals
Transportation	Transitioning to and promoting low carbon transportation through exploring low-carbon fuels, electric vehicles, active transportation, carpooling and rural transit options to reduce single occupancy vehicle trips.
Buildings and energy	Developing a home energy retrofit program, increasing energy/water retrofits in the industrial, commercial, and institutional sector.
Natural Heritage and Resources	Protecting our natural heritage and resources that sequester carbon to maintain resiliency in the changing climate.
Waste Diversion and Management	Identifying sustainable solid waste and recycling solutions and optimizing organic waste diversion.
Planning	Planning for and acting on the anticipated impacts of climate change through policy change

### Implementing the Climate Action Plan

Lanark County will adopt 6 main implementation strategies to successfully implement the Lanark County Climate Action Plan.

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

To respond quickly and effectively to the climate crisis, Lanark County will prioritize 8 major climate initiatives for the current Council term (2023 – 2026).

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

### Monitoring and Reporting

Progress of the Climate Action Plan will be reported regularly at the bimonthly meetings of the Climate Action Working Group. An annual progress report of the Climate Action Plan will be provided to County Council and made public at the end of each year.

The Climate Action Plan will be reviewed every two years which will include an inventory update and review of emission reduction targets. 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.

### The Way Forward

Lanark County aims to identify ways to overcome the limitations presented to the climate action plan. Understanding the sequestration of carbon in Lanark County will help to improve the understanding of Lanark County's carbon footprint. In addition, taking Lanark County's geography and population into consideration when exploring initiatives will be an important component to selecting and implementing actions.

Reducing Lanark County's greenhouse gas emissions provides opportunities to improve the overall sustainability of our community. Many of the initiatives in the climate action plan provide not only benefits to our climate and environment, but also opportunities for social, cultural, and economic development. Engaging the Lanark County community to implement climate actions will be vital to achieving community reductions. Building partnerships with municipalities, businesses, organizations, schools, and individuals will be necessary to engage the community in a meaningful way.

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## List of Acronyms

<b>AD-CHP</b>	Anaerobic digestion – combined heat and power
<b>ALUS</b>	Alternative Land Use Services
<b>BAU</b>	Business as usual
<b>CAO</b>	Chief Administrative Officer
<b>CO<sub>2</sub>e</b>	Carbon dioxide equivalent
<b>EV</b>	Electric vehicle
<b>FCM</b>	Federation of Canadian Municipalities
<b>GHG</b>	Greenhouse gas
<b>GMF</b>	Green Municipal Fund
<b>ICLEI</b>	International Council for Local Environmental Initiatives
<b>IESO</b>	Independent Electricity System Operator
<b>KPI</b>	Key performance indicator
<b>LCHC</b>	Lanark County Housing Corporation
<b>LGLDHU</b>	Lanark Leeds District Health Unit
<b>MVCA</b>	Mississippi Valley Conservation Authority
<b>PCP</b>	Partners for Climate Protection
<b>RNG</b>	Renewable Natural Gas
<b>RVCA</b>	Rideau Valley Conservation Authority
<b>SCOP</b>	Sustainable Communities Official Plan
<b>SMART</b>	Specific, measurable, attainable, realistic, time-bound

## 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 Omàwìwininiwag (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 forested. 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<sup>1</sup>. 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.

### Lanark County's Climate Commitment

Climate change is a national and international issue. As part of the United Nations Framework Convention on Climate Change, Canada agreed to the principle of “common but differentiated responsibility and respective capabilities”<sup>2</sup>. This acknowledges the fact that developed countries have the greatest emissions intensities, while the greatest impacts of climate change are felt by developing countries. Centered around global equity, this principle means that developing countries, such as Canada, have a greater capacity to reduce their emissions, and thus share a moral responsibility to take the lead on climate change mitigation.

In Canada, municipal governments influence or control roughly half of the country's greenhouse gas emissions, meaning they are in a unique position to be leaders in climate change mitigation and adaptation initiatives<sup>3</sup>. 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 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 local 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

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<sup>1</sup> Keddy, P.A. (2008). *Earth, Water, Fire: An Ecological Profile of Lanark County*. Arnprior, Ontario: General Store Publishing House, p. Map 14

<sup>2</sup> United Nations. (1992). *United Nations Framework Convention on Climate Change*. Retrieved from <https://unfccc.int/resource/docs/convkp/conveng.pdf>

<sup>3</sup> Federation of Canadian Municipalities. (n.d.). *Climate and sustainability*. Retrieved from <https://fcm.ca/en/focus-areas/climate-and-sustainability>

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.

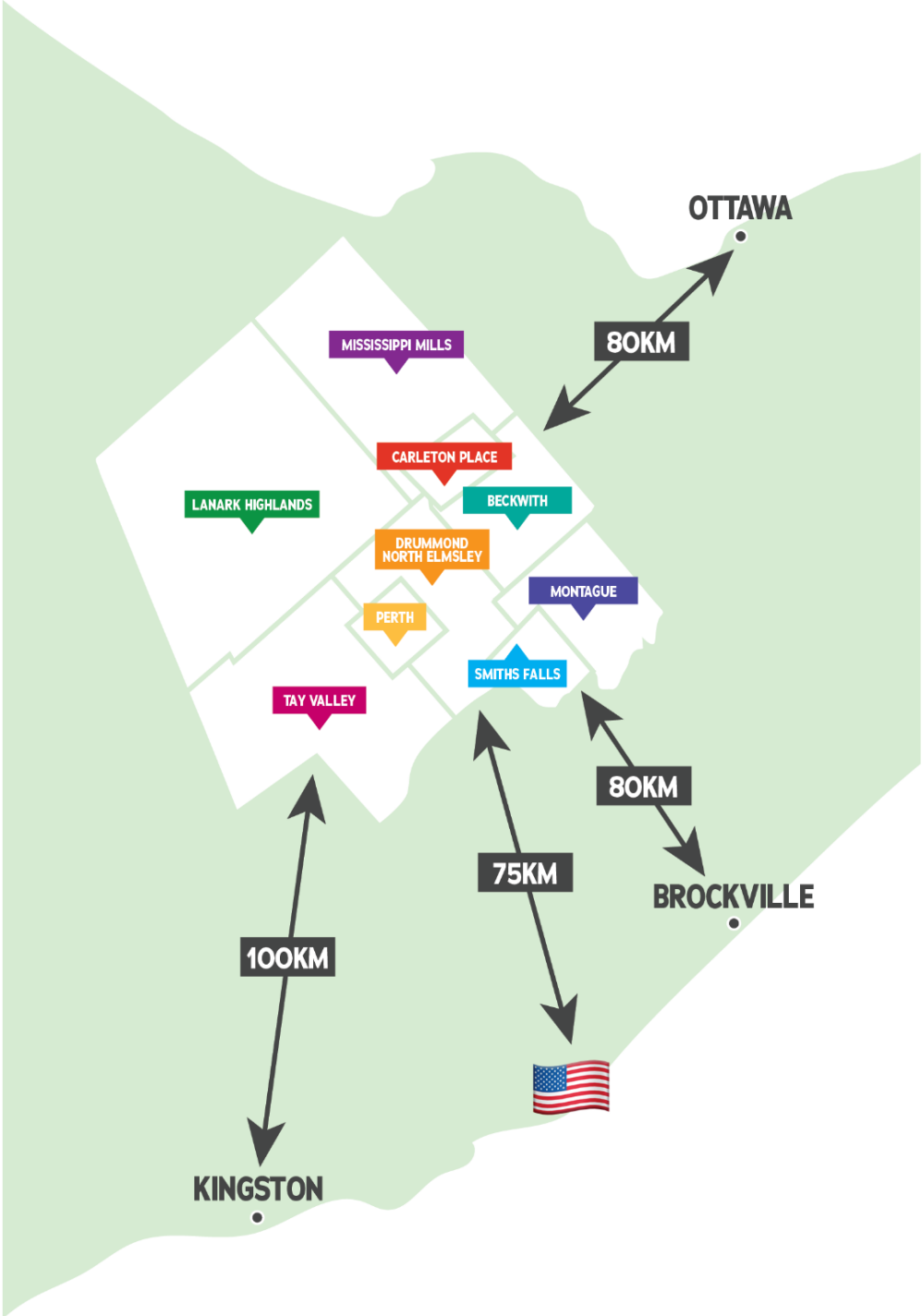


Figure 1. Map of Lanark County.

## 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. Requirements for approval from PCP:

- A summary of community and corporate inventory that follows the PCP Protocol
- Emission intensity values or coefficient values
- Summary of data sources
- Description of methodological assumptions, omissions, and other relevant data
- A 10-year business-as-usual emissions forecast

**Milestone 2** – Setting an emissions reduction target. Requirements for approval from PCP:

- A description of targets, including baseline year, target year, and percentage change from baseline year
- A council resolution that adopts the targets set, including the baseline year, target year, and percentage change from baseline year

**Milestone 3** – Developing a local action plan. Requirements for approval from PCP:

- Description of the activities that will help you achieve your target reductions
- Description of how the public or internal stakeholders participated in developing the plan
- Description of the costs and/or funding sources
- Names of the municipal departments and/or organization(s) responsible for the plan and the actions outlined in it

**Milestone 4** – Implementing the local action plan. Requirements for approval from PCP:

- Description of the degree to which measures in your local action plan have been implemented (include implementation partners, financing mechanisms, and variations from the original plan)
- The implementation schedule

**Milestone 5** – Monitoring progress and reporting results. Requirements for approval from PCP:

- An updated corporate or community inventory for the current (or near current) year
- Quantification of the GHG reduction impact of each measure outlined in your local action plan
- Report on how stakeholders and decision makers have been included through the milestone process

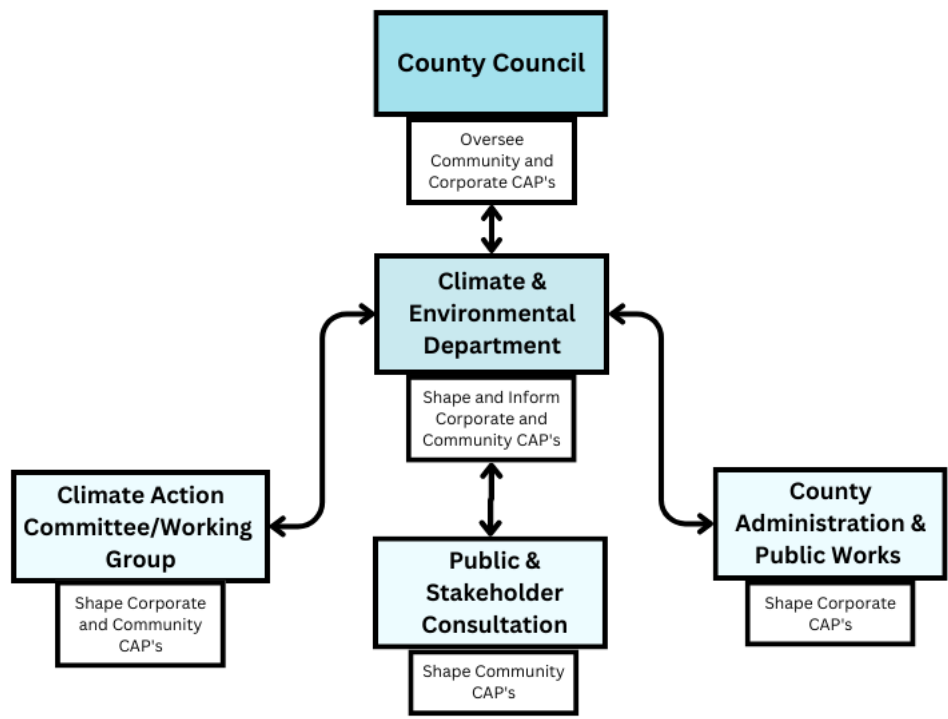
The publication of the Lanark County Climate Action Plan marks the completion of Milestone 3 of the PCP program. The plan's primary objectives are to work with stakeholders to reduce greenhouse gas

emissions within Lanark County, while also preparing the community for present and future changes. Lanark County is now in the process of implementing the Climate Action Plan, including corporate and community initiatives.

### 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. In June 2023, the first draft of the Climate Action Plan was made available for a seven-week public comment period. A survey was created to gather feedback on the plan. The public comment period was advertised through a media release, radio interview (Lake 88.1), three public events, and social media. Local municipalities were also requested to provide feedback on the plan. 71 comments were received from the public through the survey and email and seven out of the nine local municipalities provided feedback. The results of the public comment period were incorporated into the final draft of the plan.

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.

### **Guiding Principles**

The Climate Action Committee decided on a set of seven guiding principles to guide the development of the Lanark County Climate Action Plan. The guiding principles serve as the vision for the plan and provide a framework for current and future additions to the Climate Action Plan.

- 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**

### **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 diversity<sup>4</sup>. 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.

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<sup>4</sup> Lanark County. (2012). *Sustainable Communities Official Plan*. Retrieved from <https://www.lanarkcounty.ca/en/doing-business/resources/documents/Planning/Microsoft-Word---SCOP---Adopted-with-approved-MMAH-Modifications-June-18-2013.pdf>

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 illness<sup>5</sup>

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, ongoing collaboration with community groups seeking equity and justice will be a necessary component of the evolution of this plan and the creation of a climate change adaptation plan. Adaptation to climate change will be an important component to future revisions of both new and existing plans.

### **Local Municipal Climate Action Plans**

Each local municipality is responsible for developing their own corporate climate action plan. Each local municipality can choose to adopt the Lanark County community climate action plan and its goals and targets or create their own plan specific to their community using the County's plan as a guiding framework. To achieve meaningful and measurable results, it is important that municipalities select SMART goals for their climate action plans – specific, measurable, attainable, relevant, and time-bound. Lanark County is available to assist local municipalities in the development of their community and/or corporate climate action plans.

When developing climate action plans, it is recommended that each local municipality organize their plans by the same themes as those laid out in this plan. Themes help organize plans by clustering actions into understandable headings. Once completed, each local municipalities' corporate and community climate action plans can be included as chapters of this plan which outline the following information:

- *Planning for change* – a discussion of each municipality's baseline greenhouse gas emissions, emissions forecasts, and emission reduction targets.
- *Taking action* – detailed goals for each theme.
- *Implementing the plan* – description of how the goals will be implemented over time.

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<sup>5</sup> Government of Canada. (2022). *Who is most impacted by climate change*. Retrieved from <https://www.canada.ca/en/health-canada/services/climate-change-health/populations-risk.html>

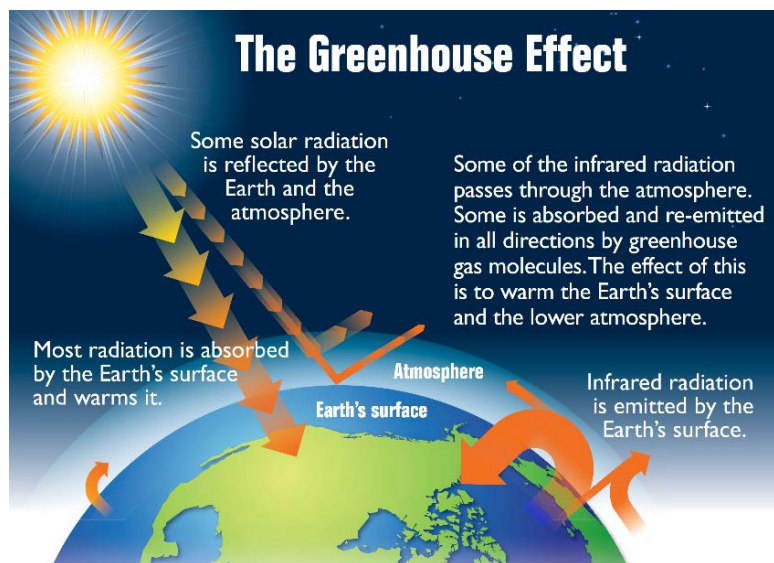


# A Changing Climate

## 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 storms<sup>6</sup>. 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 gas<sup>7</sup>. 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 warm<sup>8</sup>. 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 (CO<sub>2</sub>), 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 adapt<sup>9</sup>.



**Figure 3.** The greenhouse effect<sup>10</sup>.

<sup>6</sup> Government of Canada. (2019). *Causes of climate change*. Retrieved from <https://www.canada.ca/en/environment-climate-change/services/climate-change/causes.html>

<sup>7</sup> United Nations. (n.d.). *What Is Climate Change?* Retrieved from <https://www.un.org/en/climatechange/what-is-climate-change#:~:text=Climate%20change%20refers%20to%20long,activity%20or%20large%20volcanic%20eruptions>

<sup>8</sup> Ibid 7

<sup>9</sup> Ibid 7

<sup>10</sup>Energy Education. (n.d.). *Greenhouse effect*. Retrieved from [https://energyeducation.ca/encyclopedia/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 region<sup>11</sup>.

### **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 melt<sup>12</sup>.

### **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 areas<sup>13</sup>. Additionally, a warmer climate results in more water vapor in the air which can lead to greater than average snowfall in some areas<sup>14</sup>.

### **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 levels<sup>15</sup>. 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 water<sup>16</sup>.

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<sup>11</sup> NASA. (2017). *Weather or climate change?* Retrieved from <https://climate.nasa.gov/explore/ask-nasa-climate/2632/weather-or-climate-change/>

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

<sup>13</sup> Science. (2021). *Linking Arctic variability and change with extreme winter weather in the United States.* Retrieved from <https://www.science.org/doi/10.1126/science.abi9167>

<sup>14</sup> EPA. (2022). *Frequently Asked Questions About Climate Change.* Retrieved from <https://www.epa.gov/climatechange-science/frequently-asked-questions-about-climate-change#weather-climate>

<sup>15</sup> Scientific Reports. (2019). *Vulnerability to climate change of islands worldwide and its impact on the tree of life.* Retrieved from <https://www.nature.com/articles/s41598-019-51107-x>

<sup>16</sup> Council of Canadian Academies. (2019). *Canada’s Top Climate Change Risks.* Retrieved from <https://www.cca-reports.ca/reports/prioritizing-climate-change->

## Climate Change in Lanark County

Due to Canada's high northern latitude and large land mass, it is warming twice as fast as the global average and at an even greater rate in the Canadian Arctic<sup>17</sup>. While both human activities and natural climatic variations are factors in the observed warming in Canada, it is likely that more than half of the observed warming is due to human activities. As the climate continues to shift across Canada, the impacts will be felt locally 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 2012, the average annual temperature in Ontario increased by 1.5°C<sup>18</sup>. By 2050, it is estimated that the average annual temperature in Ontario could increase by another 2.5°C to 3.7°C<sup>19</sup>.

By 2050, if no action is taken to mitigate climate change, Lanark County could experience<sup>20</sup>:

- 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 21 day decrease in the number of frost days, meaning we will only experience 134 days per year which go below 0°C
- A 15 day decrease in the number of icing days, meaning we will only experience 58 days per year where the temperature will remain below 0°C
- A 31 day increase in the number of days above 30°C, bringing the total to 95 days per year

These climate projections come from the Climate Atlas of Canada, which uses 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. 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 change<sup>21</sup>:

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[risks/#:~:text=Canada%E2%80%99s%20Top%20Climate%20Change%20Risks%20identifies%2012%20major,life%2C%20northern%20communities%2C%20physical%20infrastructure%2C%20and%20water.%20](#)

<sup>17</sup> Government of Canada. (2019). *Canada's Changing Climate Report*. Retrieved from [https://natural-resources.canada.ca/sites/www.nr.can.gc.ca/files/energy/Climate-change/pdf/CCCR\\_FULLREPORT-EN-FINAL.pdf](https://natural-resources.canada.ca/sites/www.nr.can.gc.ca/files/energy/Climate-change/pdf/CCCR_FULLREPORT-EN-FINAL.pdf)

<sup>18</sup> Government of Ontario. (2023). *Ontario Provincial Climate Change Impact Assessment*. Retrieved from [Ontario Provincial Climate Change Impact Assessment Technical Report - January 2023](https://www.ontario.ca/page/ontario-provincial-climate-change-impact-assessment-technical-report-january-2023)

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

<sup>20</sup> Climate Atlas of Canada. (n.d.). <https://climateatlas.ca/>

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

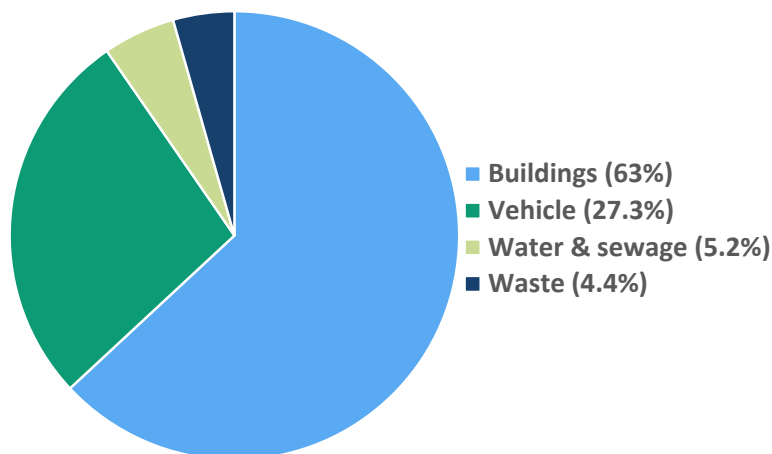
- Heat and drought, impacting local water supply and agricultural practices
- More ice storms, threatening safety and damaging infrastructure
- Damage to infrastructure, risking critical water, sanitary, and power systems
- Loss of native biodiversity, increasing the introduction of invasive species, 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
- Disruptions to the economy as infrastructure and assets are threatened
- Soil erosion and nutrient loss impacting local agricultural systems
- Increased risk of flooding and fire

## Planning for Corporate Change

### Corporate Emissions Inventory

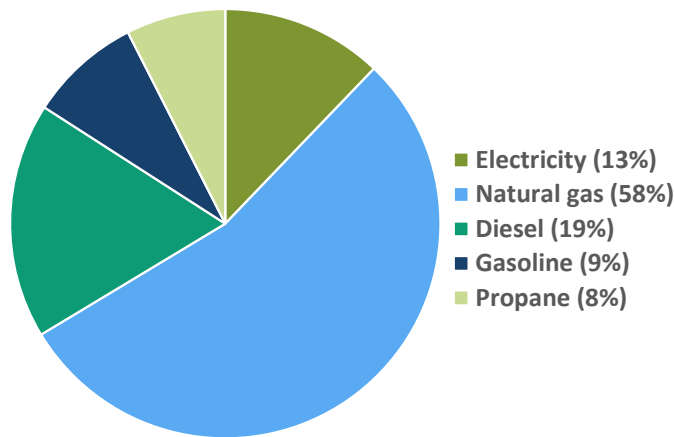
To achieve Milestone 1 of the Partners for Climate Protection Program, Lanark County completed a corporate greenhouse gas emissions inventory for our base year (2019). The corporate inventory was completed following the [PCP protocol](#), which outlines a set of clear accounting and reporting guidelines for developing greenhouse gas inventories within the context of the PCP program. 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 CO<sub>2</sub>e 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 include the Administration and Public Works offices, Lanark Lodge long-term care facility, four public works garages, and the Lanark County Housing Corporation (LCHC) portfolio. Together, these buildings account for 63% of total emissions (Figure 4). Corporate vehicles are the second largest source of corporate emissions, accounting for 27% of emissions.



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

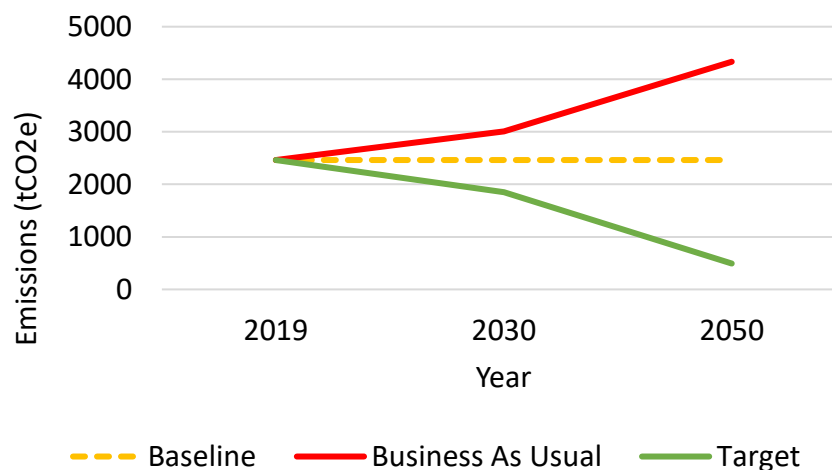
Natural gas is the energy source responsible for the largest proportion (58%) of greenhouse gas emissions in Lanark County’s corporate operations (Figure 5). The remaining greenhouse gas emissions are sourced from diesel (19%), electricity (13%), gasoline (9%), and propane (<1%).



**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 actions 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 CO<sub>2</sub>e (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. The corporate business as usual forecast can be updated to reflect future 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 amounts 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, 29 goals were identified to reduce Lanark County's corporate greenhouse gas emissions and build resilience to the impacts of climate change. Each corporate goal has information on potential benefits, cost and funding source, start time, approximate timeframe for completion, department or person responsible, key performance indicators, and estimated greenhouse gas reductions. The goals may evolve over time as the plan progresses.

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

- 1. Education**
- 2. Buildings and energy**
- 3. Lanark County Housing Corporation**
- 4. Transportation and equipment**
- 5. Natural Heritage and resources**
- 6. Waste diversion and management**
- 7. Planning**

Refer to Appendix B for descriptions of costs and timeframe for completion.

### 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.

<b>Goal 1.1 - Modify all Council reports to include a section for the climate impact that uses the climate tool</b>	
Potential Benefits	Reduce fossil fuels, encourage a climate conscious culture
Cost and Funding Source	None
Person or Department Responsible	Chief Administrative Officer / Clerk
Start Time	In progress; 2023
Approximate Timeframe for Completion	Ongoing
Key Performance Indicators	# of projects/decisions assessed
Expected GHG Reduction	Indirect; Medium
<b>Goal 1.2 - Raise staff awareness of corporate climate initiatives through mini campaigns and training programs</b>	
Potential Benefits	Encourage a climate conscious culture
Cost and Funding Source	Low; Climate Change Budget
Person or Department Responsible	Climate Environmental Department
Start Time	2023
Approximate Timeframe for Completion	Ongoing
Key Performance Indicators	# of staff trained, # of campaigns
Expected GHG Reduction	Indirect; Low
<b>Goal 1.3 - Launch an Off Nightly/Mini campaign to encourage staff to turn off computers, printers, and lights over night or when not in use</b>	
Potential Benefits	Reduce energy costs, encourage a climate conscious culture
Cost and Funding Source	Low; Climate Change Budget
Person or Department Responsible	Climate Environmental Department
Start Time	2024
Approximate Timeframe for Completion	Short-term
Key Performance Indicators	Energy consumption data
Expected GHG Reduction	Indirect; Low

**Theme 2 – Buildings and Energy**

Corporate buildings are responsible for the largest source of corporate greenhouse gas emissions (63%). To reach the corporate emissions reduction targets, it will be necessary to carry out energy retrofits on all buildings, reducing energy demand and facilitating the rapid decrease of fossil fuel usage. Through building envelope and system improvements, built environment energy demands could be reduced significantly to the point where renewable energy generation could feasibly bring corporate buildings to Net Zero Ready or Net Zero Energy performance.

<b>Goal 2.1 - Plan for the rebuild or retrofit of all County buildings to be net-zero</b>	
Potential Benefits	Reduce fossil fuel, reduce energy costs, reach net-zero
Cost and Funding Source	High; County Budget, Green Municipal Fund Capital Funding



Person or Department Responsible	Chief Administrative Officer
Start Time	To be determined
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	Pre- and post-energy audit data, completed feasibility study
Expected GHG Reduction	Direct; High
<b>Goal 2.2 - Conduct a building automation system maintenance/commissioning</b>	
Potential Benefits	Reduce fossil fuels, reduce energy costs
Cost and Funding Source	Low; County Budget
Person or Department Responsible	Facilities Coordinator
Start Time	In progress
Approximate Timeframe for Completion	Short-term
Key Performance Indicators	Maintenance reports
Expected GHG Reduction	Direct; Medium
<b>Goal 2.3 - Install solar systems on municipal buildings where possible</b>	
Potential Benefits	Increase renewable energy generation, reduce fossil fuels
Cost and Funding Source	High; County Budget
Person or Department Responsible	Facilities Coordinator
Start Time	In progress; 2018
Approximate Timeframe for Completion	Ongoing
Key Performance Indicators	# of panels installed
Expected GHG Reduction	Direct; Medium
<b>Goal 2.4 - Install motion sensors for indoor lighting and automatic timers on all equipment that can be turned off at night</b>	
Potential Benefits	Reduce energy costs
Cost and Funding Source	Low; County Budget
Person or Department Responsible	Facilities Coordinator
Start Time	In progress; 2009
Approximate Timeframe for Completion	Short-term
Key Performance Indicators	Energy consumption data, # of timers/sensors installed
Expected GHG Reduction	Direct; Low
<b>Goal 2.5 - Optimize heating and cooling efficiency in all County buildings to reduce energy consumption</b>	
Potential Benefits	Reduce fossil fuels, reduce energy costs
Cost and Funding Source	Low; County Budget
Person or Department Responsible	Facilities Coordinator
Start Time	To be determined upon replacement schedules
Approximate Timeframe for Completion	Short-term
Key Performance Indicators	Energy consumption data



Expected GHG Reduction	Direct; Medium
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### Theme 3 – 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 building portfolio consists of a combination of low-rise complexes, single-family homes, and attached and semi-detached homes. 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 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.

<b>Goal 3.1 - Encourage energy efficient practices by increasing tenant education (e.g., providing energy efficient tips through mailing list, posters in common spaces, reporting improvements to tenants, etc.)</b>	
Potential Benefits	Improve efficiency, reduce energy costs
Cost and Funding Source	Low; Climate Change Budget
Person or Department Responsible	Climate Environmental Department / Social Services Department
Start Time	2024
Approximate Timeframe for Completion	Ongoing
Key Performance Indicators	# of tenants engaged, # of resources created
Expected GHG Reduction	Indirect; Low
<b>Goal 3.2 - Complete energy audits to identify the most effective energy-saving opportunities and prioritize projects when possible</b>	
Potential Benefits	Identify opportunities to improve efficiency and reduce energy costs and greenhouse gas emissions
Cost and Funding Source	High; Canada Mortgage and Housing Corporation (Canada Greener Affordable Housing), Deep Retrofit Accelerator Initiative, Green Municipal Fund (Sustainable Affordable Housing), Social Services Budget, Climate Change Budget
Person or Department Responsible	Social Services Department
Start Time	2024
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	# of buildings audited, pre-energy retrofit audit data
Expected GHG Reduction	Indirect; High
<b>Goal 3.3 - 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)</b>	
Potential Benefits	Reduce fossil fuels, reduce energy costs, increase tenant comfort
Cost and Funding Source	Medium; Green Municipal Fund (Sustainable Affordable Housing), Social Services Budget

Person or Department Responsible	Social Services Department
Start Time	In progress; 2016
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	# of units improved, R-values, consumption data
Expected GHG Reduction	Direct; High
<b>Goal 3.4 - 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.)</b>	
Potential Benefits	Reduce fossil fuels, improve efficiency, reduce energy costs
Cost and Funding Source	Medium; Social Services Budget
Person or Department Responsible	Social Services Department
Start Time	In progress; 2016
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	# of units improved, consumption data
Expected GHG Reduction	Direct; Medium
<b>Goal 3.5 – Replace appliances beyond their service life with Energy Star models</b>	
Potential Benefits	Reduce fossil fuels, improve efficiency, reduce energy costs
Cost and Funding Source	Medium; Social Services Budget
Person or Department Responsible	Social Services Department
Start Time	In progress; 2016
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	# of appliances replaced
Expected GHG Reduction	Direct; Medium
<b>Goal 3.7 - Construct new buildings to be energy efficient</b>	
Potential Benefits	Reduce fossil fuels, reduce energy costs
Cost and Funding Source	High; Green Municipal Fund (Sustainable Affordable Housing), Social Services Budget
Person or Department Responsible	Social Services Department
Start Time	To be determined
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	Building certifications
Expected GHG Reduction	Direct; High
<b>Goal 3.8 - Consider electric heat pumps in the replacement of electrical baseboards and gas furnaces/boilers at end of life</b>	
Potential Benefits	Reduce fossil fuels, reduce energy costs, increase tenant comfort
Cost and Funding Source	High; Green Municipal Fund (Sustainable Affordable Housing), Social Services Budget
Person or Department Responsible	Social Services Department
Start Time	2024

Approximate Timeframe for Completion	Long-term
Key Performance Indicators	# of heat pumps installed
Expected GHG Reduction	Direct; High
<b>Goal 3.9 - Explore the conversion of areas to pollinator habitat or food production on managed properties</b>	
Potential Benefits	Increase pollinator habitat, reduce emissions from mowing and maintenance, increase food security, increase resident engagement
Cost and Funding Source	Low; Climate Change budget
Person or Department Responsible	Climate Environmental Department / Social Services Department
Start Time	2024
Approximate Timeframe for Completion	Ongoing
Key Performance Indicators	Area of land converted
Expected GHG Reduction	Direct; Low

#### Theme 4 – 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 and hybrid options.

<b>Goal 4.1 - Upgrade 16 gas and 3 diesel fleet vehicles to electric vehicles by 2030 when electric vehicles are available/vehicles reach end of life</b>	
Potential Benefits	Reduce fossil fuels, increase EV uptake
Cost and Funding Source	High; Public Works Budget, Federal Incentives for Zero-Emission Vehicles Program, Green Municipal Fund Capital Funding
Person or Department Responsible	Director of Public Works
Start Time	In progress; 2023
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	# of vehicles replaced
Expected GHG Reduction	Direct; High
<b>Goal 4.2 - Install electric vehicle charging stations at the County buildings for County fleet charging and for staff, councillors or the public to use</b>	
Potential Benefits	Reduce fossil fuels, encourage a climate conscious culture
Cost and Funding Source	Medium; Public Works / Climate Change Budget, Natural Resources Canada Zero-Emission Vehicle Infrastructure, Green Municipal Fund Capital Funding
Person or Department Responsible	Facilities Coordinator
Start Time	In progress; 2022
Approximate Timeframe for Completion	Short-term
Key Performance Indicators	# of chargers, usage data

Expected GHG Reduction	Indirect; Low
<b>Goal 4.3 - The procurement of new or replacement equipment or power tools be electric, unless an electric option is not available</b>	
Potential Benefits	Reduce fossil fuels
Cost and Funding Source	Medium; Public Works Budget
Start Time	2024
Person or Department Responsible	Director of Public Works
Approximate Timeframe for Completion	Short-term
Key Performance Indicators	# of equipment procured, usage data
Expected GHG Reduction	Direct; Medium

## Theme 5 – Natural Heritage and Resources

Protecting and increasing the coverage of natural features helps to mitigate climate change and promote biodiversity. Since 2018, Lanark County has taken steps to help support pollinators, wildlife, and increase tree coverage. Continuing this work on available county-owned properties will contribute to reaching our corporate climate targets.

<b>Goal 5.1 - Increase the tree canopy on County properties (e.g., LCHC properties, County offices etc.)</b>	
Potential Benefits	Sequester carbon, protect natural resources, improve biodiversity, improve climate change mitigation, improve climate change adaptation, preserve and/or improve ecosystem services
Cost and Funding Source	Low; Climate Change Budget, Public Works Budget
Person or Department Responsible	Climate and Environmental Department
Start Time	In progress
Approximate Timeframe for Completion	On-going
Key Performance Indicators	# of trees planted
Expected GHG Reduction	Direct; Low (carbon offsets)
<b>Goal 5.2 - Increase carbon sequestration and pollinator habitat on county properties and road allowances</b>	
Potential Benefits	Sequester carbon, protect natural resources, improve biodiversity, improve climate change mitigation, preserve and/or improve ecosystem services
Cost and Funding Source	Low; Climate Change Budget, Public Works Budget
Person or Department Responsible	Climate and Environmental Department
Start Time	In progress; 2016
Approximate Timeframe for Completion	On-going
Key Performance Indicators	Acres of restored land
Expected GHG Reduction	Direct; Low (carbon offsets)
<b>Goal 5.1 - Explore approaches that incorporate natural systems and green infrastructure into site improvements, greenspaces, and stormwater management (e.g., rain gardens, trees etc.)</b>	
Potential Benefits	Sequester carbon, protect natural resources, improve biodiversity, improve climate change mitigation, preserve and/or improve ecosystem services
Cost and Funding Source	Low; Climate Change Budget, Public Works Budget

Person or Department Responsible	Climate and Environmental Department
Start Time	2024
Approximate Timeframe for Completion	On-going
Key Performance Indicators	# of projects
Expected GHG Reduction	Direct; Low

## Theme 6 – 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.

<b>Goal 6.1 - Join the Blue Communities Project and phase out the sale of bottled water in municipal facilities and at municipal events</b>	
Potential Benefits	Reduce plastic waste, encourage a climate conscious culture
Cost and Funding Source	Low; CC Budget
Person or Department Responsible	Climate Environmental Department and Local Municipalities
Start Time	2024
Approximate Timeframe for Completion	Short-term
Key Performance Indicators	Reduction/elimination of bottled water
Expected GHG Reduction	Indirect; Low
<b>Goal 6.2 - Install water refill stations in all municipal buildings to replace water coolers</b>	
Potential Benefits	Reduce fossil fuels from water transportation, reduce plastic waste
Cost and Funding Source	Low; County Budget
Person or Department Responsible	Facilities Coordinator
Start Time	In progress; 2023
Approximate Timeframe for Completion	Mid-term
Key Performance Indicators	# of bottles saved (water refill station data)
Expected GHG Reduction	Indirect; Low
<b>Goal 6.3 - Launch an enhanced recycling program for plastic, glass, metal and food waste (e.g., Terracycle 25% of waste)</b>	
Potential Benefits	Increase recycling, divert waste from landfills
Cost and Funding Source	Low; County Budget
Person or Department Responsible	Climate Environmental Department
Start Time	2024
Approximate Timeframe for Completion	Short-term
Key Performance Indicators	# of kgs recycled, programs joined
Expected GHG Reduction	Indirect; Low
<b>Goal 6.4 - Purchase 100% recycled paper and enact policies and procedures to reduce the overall use of paper</b>	
Potential Benefits	Reduce waste, encourages a climate conscious culture

Cost and Funding Source	Low; County Budget
Person or Department Responsible	All departments
Start Time	To be determined
Approximate Timeframe for Completion	Short-term
Key Performance Indicators	Purchasing data
Expected GHG Reduction	Indirect; Low

**Theme 7 - 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. To build momentum, it is imperative that policies, plans, and processes at the county level include climate change considerations. Updating existing plans to reflect the risks associated with climate change and the importance of natural infrastructure in adaptation and mitigation will help inform decision making.

<b>Goal 7.1 - Revise the Asset Management Plan to include natural assets (e.g., watersheds, wetlands, forests, lakes etc.)</b>	
Potential Benefits	Better preparedness for the future
Cost and Funding Source	Medium; County Budget, Climate Change Budget, FCM (Municipal Asset Management Program)
Person or Department Responsible	Climate and Environmental Department, Planning Departments of the County and local municipalities, CAO, RVCA, MVCA community stakeholders
Start Time	2025
Approximate Timeframe for Completion	Mid-term
Key Performance Indicators	Completion of Asset Management Plan
Expected GHG Reduction	Indirect; Low
<b>Goal 7.2 - Update Emergency Plan to include protocols for major natural disasters and weather events (e.g., evacuation routes, shelter locations, etc.)</b>	
Potential Benefits	Better preparedness for the future
Cost and Funding Source	Medium; County Budget, Climate Change Budget
Person or Department Responsible	Climate and Environmental Department, Planning Departments of the County and local municipalities, CAO, RVCA, MVCA community stakeholders
Start Time	2025
Approximate Timeframe for Completion	Mid-term
Key Performance Indicators	Completion of Emergency Plan
Expected GHG Reduction	None
<b>Goal 7.3 - 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)</b>	
Potential Benefits	Better preparedness for the future
Cost and Funding Source	Medium; County Budget, Climate Change Budget
Person or Department Responsible	Climate and Environmental Department, Planning Departments of the County and local municipalities, CAO, RVCA, MVCA community stakeholders
Start Time	2024

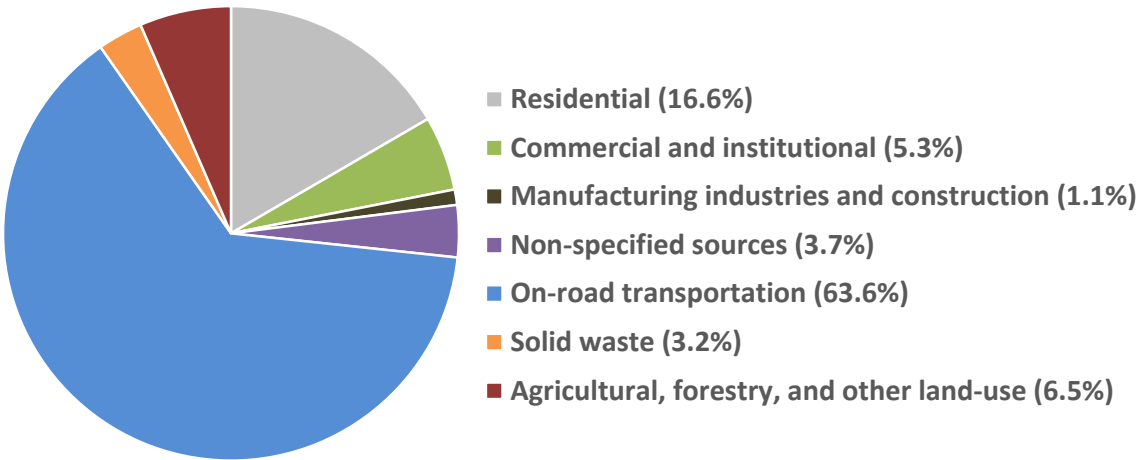
Approximate Timeframe for Completion	Mid-term
Key Performance Indicators	Completion of Adaptation Plan
Expected GHG Reduction	None

## Planning for Community Change

### Community Emissions Inventory

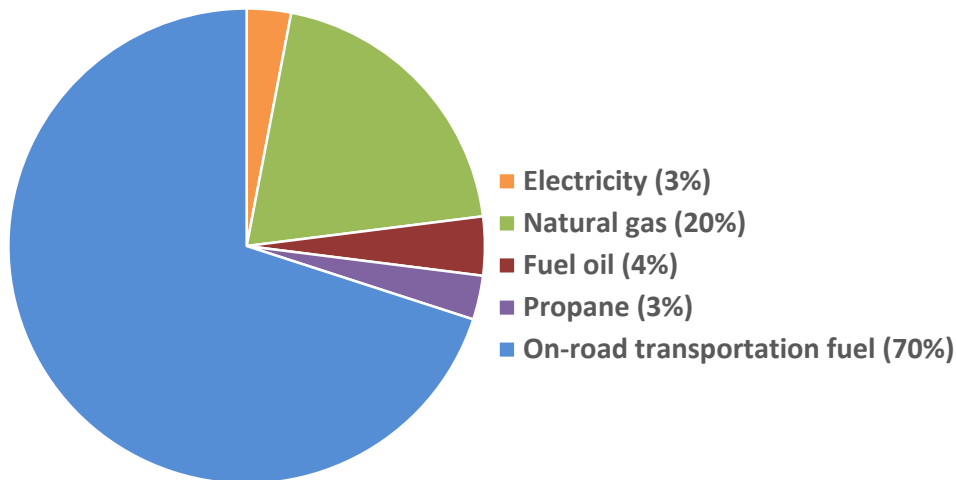
To achieve Milestone 1 of the Partners for Climate Protection Program, Lanark County completed a community greenhouse gas emissions inventory for our base year (2019). The community inventory was completed following the [PCP protocol](#), which outlines a set of clear accounting and reporting guidelines for developing greenhouse gas inventories within the context of the PCP program. 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 CO<sub>2</sub>e 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 Inc. 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%).



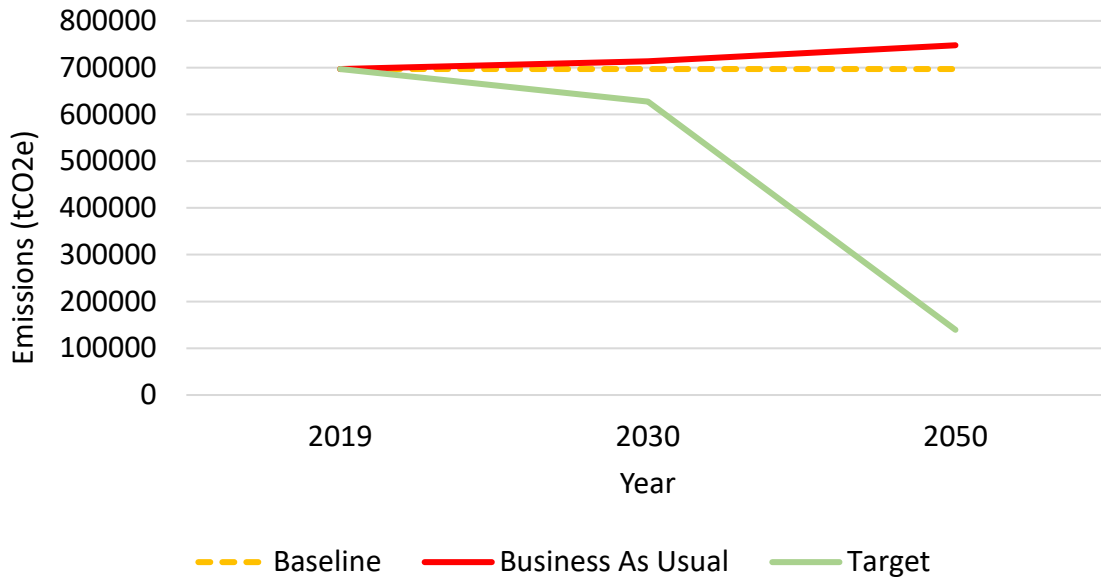
**Figure 8.** Lanark County's community greenhouse gas emissions by energy source.

### Community Business as Usual Forecast

Business as usual (BAU) scenarios are created to help understand what would happen to greenhouse gas emissions if no actions were taken (Figure 9). Without action, by 2050, it is projected that community emissions will increase to 747,821 tonnes CO<sub>2</sub>e. These scenarios are valuable in setting targets as any target must offset the forecasted growth in emissions.

The BAU forecast is based on the best available data showing an estimated 1.84% annual county-wide population growth rate for 2019. Applying this population growth rate to all greenhouse gas inventory sectors results in a 20% increase in total forecasted emissions for the mid-term (2019 to 2030) and a 76% increase in the long-term (2019 to 2050). Assuming this simplified one-to-one relationship between population growth and emissions likely overestimates future emissions. Thus, the Lanark County community BAU forecast broke down projected emissions by sector under various assumptions outlined in Table 3 of Appendix A. The BAU annual growth rate in the transportation, residential, and stationary energy sectors was initially dampened to 0.92%, equal to half the expected population growth rate due to the assumption that there is not a linear relationship between population growth and emissions in these sectors. For example, new homes may house 2 to 5 people, while there may only be 1 or two vehicles per household. Similarly, 2 people in the same house do not necessarily use twice as much energy as a one-person household. With an assumed decrease in emissions of 0.75% per year in the transportation, residential, and stationary energy sectors due to projected fuel efficiency and building code improvements, this translates to a net BAU growth of 0.17% per year in those sectors. The BAU forecast assumes a 1.84% annual GHG growth rate in the community solid waste/wastewater sector and a 0% annual GHG growth rate in the agriculture/forests sector.





**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, 21 goals were identified to reduce Lanark County’s greenhouse gas emissions and build resilience to the impacts of climate change. 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 forward with each goal. Each community goal also has information on potential benefits, cost and funding source, start time, approximate timeframe for

completion, department or person responsible, key performance indicators, and estimated greenhouse gas reductions. Goals and recommended approaches may evolve over time as the plan and technology progress.

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**

Refer to Appendix B for descriptions of costs and timeframe for completion.

### 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. Transitioning to electric transportation and finding innovative transit solutions suitable for rural communities will be integral to reducing greenhouse gas emissions within the transportation sector.

<b>Goal 1.1 - Increase electric vehicle uptake and local charging infrastructure for public access</b>	
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 electric vehicles that encourages vehicle owners to take advantage of electric vehicle subsidy programs
Potential Benefits	Reduce fossil fuels, increase electric vehicle uptake
Cost and Funding Source	High; Natural Resources Canada Zero Emission Vehicle Infrastructure Program, Lanark County EV Fund
Person or Department Responsible	Climate and Environmental Department, local municipalities
Start Time	2024
Approximate Timeframe for Completion	Mid-term
Key Performance Indicators	# of stations installed, engagement data, charging station usage data, # of municipalities utilizing funding
Expected GHG Reduction	Direct; Medium
<b>Goal 1.2 - Electrify municipal and community fleet vehicles as part of their replacement cycle</b>	
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 and Funding Source	High; Incentives for Zero-Emission Vehicles Program, Green Municipal Fund Capital Funding
Person or Department Responsible	Climate and Environmental Department; partner with Lanark Transportation
Start Time	In progress; 2023

Approximate Timeframe for Completion	Long-term
Key Performance Indicators	# of new electric vehicles, # of municipalities utilizing funding
Expected GHG Reduction	Direct; High
<b>Goal 1.3 - Explore the use of low-carbon fuels (e.g., biodiesel blends) in suitable municipal fleet vehicles</b>	
Recommended Approach	Connect with municipalities who use biodiesel 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 and Funding Source	To be determined
Person or Department Responsible	Climate and Environmental Department and local municipalities
Start Time	In progress; 2023
Approximate Timeframe for Completion	Mid-term
Key Performance Indicators	Completion of feasibility study, # of participating vehicles, # of liters procured/used
Expected GHG Reduction	Direct; Medium
<b>Goal 1.4 – Update the Transportation Master Plan to include active transportation</b>	
Recommended Approach	Encourage active transportation (e.g., 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 and Funding Source	Medium; Public Works Budget
Person or Department Responsible	Public Works, Planning Department, CAO, local municipalities, partner with health unit
Start Time	2024
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	km of trails, km of paved shoulders, # of policies/plans changed or incorporated
Expected GHG Reduction	Indirect; Low
<b>Goal 1.5 - Reduce single occupancy automated vehicle trips by providing local transit, carpooling and ridesharing solutions suitable for rural communities</b>	
Recommended Approach	Establish a Transportation Working Group to 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 and Funding Source	High; Green Municipal Fund Capital Funding, Infrastructure Canada Rural Transit Solutions Fund

Person or Department Responsible	Chief Administrative Officer, Climate and Environmental Department; partner with Lanark Transportation
Start Time	In progress; 2023
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	Development of working group, Community Carpool website data
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. Due to the age of the housing and building stock in Lanark County, there is an opportunity for deep retrofits to improve energy efficiency and affordability for home-owners, tenants, and building-owners, while also reducing greenhouse gas emissions.

As communities are expected to experience more frequent incidents of extended power outages due to severe weather, increasing access to renewable energy in buildings and homes will be key to climate change adaptation.

<b>Goal 2.1 - Develop and support the delivery of a local home energy retrofit program including those offered by partner non-profits and private companies</b>	
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
	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 and Funding Source	High; Green Municipal Fund Capital Funding, County Budget, Climate Change Budget
Person or Department Responsible	Climate and Environmental Department, Climate Network Lanark, Chief Administrative Officer
Start Time	In progress; 2023
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	Amount of funding secured/allocated, launch of program, # of participants, # of trainings supported, # of homeowners engaged
Expected GHG Reduction	Direct; High
<b>Goal 2.2 - Establish a campaign to increase energy/water retrofits within the industrial, commercial, and institutional sector</b>	
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 and Funding Source	Low; Climate Change Budget
Person or Department Responsible	Climate and Environmental Department
Start Time	2025

Approximate Timeframe for Completion	Short-term
Key Performance Indicators	# of businesses and industries engaged, # of retrofits completed
Expected GHG Reduction	Indirect; High
<b>Goal 2.3 - Establish green building standards that enforce climate resilient and adaptive building designs to increase energy efficiency and reduce greenhouse gas emissions</b>	
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 and Funding Source	Medium; Climate Change Budget
Person or Department Responsible	Climate and Environmental Department, Planning Department, Local municipal planners, partner with Lanark Leeds Home Builders Association and developers
Start Time	To be determined
Approximate Timeframe for Completion	Mid-term
Key Performance Indicators	Development of green building standards
Expected GHG Reduction	Indirect; High
<b>Goal 2.4 - Encourage solar photovoltaics (PV) developments where suitable (for net metering and microgrids) and solar thermal for domestic hot water use</b>	
Recommended Approach	Identify underutilized county, municipal, or private lands and buildings that could be suitable for 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, increase climate resiliency
Cost and Funding Source	Medium; Green Municipal Fund Capital Funding
Person or Department Responsible	Climate and Environmental Department, Planning Department, CAO, Partner with Independent Electricity System Operator (IESO) and Hydro One
Start Time	2025
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	Completion of feasibility study, # of areas identified
Expected GHG Reduction	Direct; High
<b>Goal 2.5 - Explore opportunities to utilize other renewable energy sources and technologies</b>	
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 energy (e.g., renewable natural gas (RNG), solar, wind)
Potential Benefits	Reduce fossil fuels
Cost and Funding Source	Medium; Green Municipal Fund Capital Funding
Person or Department Responsible	Climate and Environmental Department
Start Time	2024
Approximate Timeframe for Completion	Long-term

Key Performance Indicators	Completion of feasibility study, # of people engaged
Expected GHG Reduction	Indirect; High

### Theme 3 – Natural Heritage and Resources

Natural features, including wetlands, forests, and other green spaces are important carbon sinks. These spaces also play an important role in climate adaptation as they offer essential services including stormwater management, water filtration, air quality improvements, and heat reduction. Protecting and increasing the coverage of these features across Lanark County is critical as the impacts of climate change are expected to negatively influence biodiversity and ecosystem services.

In the most recent report of the Ontario Provincial Climate Change Impact Assessment, Eastern Ontario is expected to experience high climate related risks associated with livestock and crop production by 2050<sup>22</sup>. Diversifying our local food system and helping farmers adapt to our changing environment is fundamental to supporting local food security and sovereignty.

This section summarizes the approaches that the County will take to protect and improve both natural heritage and agriculture in Lanark County

<b>Goal 3.1 - Increase the managed forested area and tree canopy within Lanark County</b>	
Recommended Approach	Collaborate with local municipalities to create an urban forest/reforest strategy (e.g., Lanark County 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 and Funding Source	Medium; Climate Change Budget, local municipal budgets, Federal Two Billion Trees Program
Person or Department Responsible	Climate and Environmental Department, County Planner, and local municipalities; Partner with RVCA and MVCA
Start Time	In progress; 2020
Approximate Timeframe for Completion	Mid-term
Key Performance Indicators	Area of managed forest, # of trees planted, development of strategy and/or policy
Expected GHG Reduction	Indirect; Medium (carbon offsets)
<b>Goal 3.2 - Protect the carbon sequestration and climate resilience value of wetlands, greenspaces, and other naturalized areas within the County</b>	
Recommended Approach	Work with local municipalities, Indigenous Peoples, agencies, NGOs, and others to identify, map, assess, protect, restore, manage and monitor natural heritage systems (i.e., wetlands, forests, lakes, etc.) where a key approach is to strengthen related land use policies and practices
	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)

<sup>22</sup>Government of Ontario (2023), *Ontario Provincial Climate Change Impact Assessment* [Ontario Provincial Climate Change Impact Assessment Technical Report - January 2023](#)

	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 (e.g., ALUS Lanark)
Potential Benefits	Sequester carbon, protect natural resources, increase forest cover, improve public health and access to greenspace, improve biodiversity
Cost and Funding Source	Medium; Climate Change 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
Start Time	In progress; 2023
Approximate Timeframe for Completion	Ongoing
Key Performance Indicators	# of acres protected, # of acres restored, # of people engaged, # of ALUS projects supported
Expected GHG Reduction	Indirect; Medium (carbon offsets)
<b>Goal 3.3 - Include the use of green infrastructure and natural heritage to serve local needs as the County continues to develop</b>	
Recommended Approach	Encourage 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 and Funding Source	Medium; Climate Change Budget, local municipal budgets, Green Municipal Fund Capital Funding
Person or Department Responsible	Climate and Environmental Department, County planner, local municipalities; partner with The Land Between and Ducks Unlimited Canada
Start Time	2026
Approximate Timeframe for Completion	Ongoing
Key Performance Indicators	# of sites with green infrastructure
Expected GHG Reduction	Indirect; Low
<b>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</b>	
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
	Identify County, municipal, and private lands available for cooperative farming and community gardening
Potential Benefits	Produce local food for local consumption, reduce food transportation emissions, farmer engagement
Cost and Funding Source	Low; Climate Change Budget
Person or Department Responsible	Climate and Environmental Department, Chief Administrative Officer, partner with local organizations
Start Time	2026

Approximate Timeframe for Completion	Ongoing
Key Performance Indicators	# of sites established, # of people engaged
Expected GHG Reduction	Indirect; Low
<b>Goal 3.5 - Promote the adoption of sustainable livestock and crop management practices</b>	
Recommended Approach	Advance ecological, regenerative agriculture and 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 and Funding Source	Low, Climate Change Budget
Person or Department Responsible	Climate and Environmental Department; partner with agricultural organizations (e.g., ALUS Lanark)
Start Time	2026
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	# of farmers engaged, # of participants trained
Expected GHG Reduction	Indirect; Medium
<b>Goal 3.6 - Promote biogas energy recovery for use in aerobic digestion - combined heat and power (AD-CHP) systems on farms</b>	
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 and Funding Source	Low; Climate Change Budget
Person or Department Responsible	Climate and Environmental Department, partner with farmers and Canadian Biogas Association
Start Time	2026
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	Completion of feasibility study
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. In Lanark County, each local municipality is responsible for managing the waste produced in their community. Lanark County will continue to assist local municipalities and community members in improving their waste management practices to support a circular economy.

<b>Goal 4.1 - Identify sustainable solid waste and recycling solutions for municipalities</b>	
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
	Explore recycling programs for renewable technology components at the end of their life (e.g., solar panels, batteries)
Potential Benefits	Divert solid waste and recyclables from landfills, reduce methane production, sustainable waste management, community engagement
Cost and Funding Source	Medium; local municipal budgets, Climate Change Budget, Green Municipal Fund Capital Funding
Person or Department Responsible	Climate and Environmental Department, Chief Administrative Officer, local municipalities
Start Time	2025
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	Completion of local municipal waste audits, amount of waste diverted, # of participants in recycling program
Expected GHG Reduction	Direct; Medium
<b>Goal 4.2 - Optimize organic waste diversion</b>	
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, biochar, 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 and Funding Source	Medium; Climate Change Budget, local municipal budgets, Green Municipal Fund Capital Funding
Person or Department Responsible	Climate and Environmental Department, local municipalities
Start Time	In progress; 2023
Approximate Timeframe for Completion	Ongoing
Key Performance Indicators	Tonnes of organic waste diverted, # of participating municipalities
Expected GHG Reduction	Direct; Medium
<b>Goal 4.3 - Explore utilizing organic waste and treated biosolids for 3rd party Renewable Natural Gas (RNG) production</b>	
Recommended Approach	Identify regional opportunities for Lanark County municipalities to participate in RNG production
Potential Benefits	Reduce fossil fuels, renewable fuel
Cost and Funding Source	Low; Climate Change Budget

Person or Department Responsible	Climate and Environmental Department, local municipalities, partner with Enbridge
Start Time	2024
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	Completion of feasibility study
Expected GHG Reduction	Indirect; Medium
<b>Goal 4.4 - Advance combined heat and power in anaerobic waste and water treatment facilities</b>	
Recommended Approach	Explore the feasibility of utilizing biogas fueled combined heat and power systems for energy use on site in waste and water treatment facilities
Potential Benefits	Reduce fossil fuels, renewable fuel
Cost and Funding Source	Low; Climate Change Budget, local municipal budgets, Green Municipal Fund Capital Funding
Person or Department Responsible	Climate and Environmental Department and local municipalities
Start Time	2026
Approximate Timeframe for Completion	Long-term
Key Performance Indicators	Completion of feasibility study
Expected GHG Reduction	Indirect; Low

**Theme 5 - Planning**

Climate change adaptation means planning for and acting on the anticipated 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. To build momentum, it is imperative that policies, plans, and processes include climate change considerations. Updating existing plans to reflect the risks associated with climate change and the importance of natural infrastructure in adaptation and mitigation will help inform decision making and create a community that is resilient to climate change.

<b>Goal 5.1 - Incorporate climate change into County and municipal plans</b>	
Recommended Approach	Consult with Indigenous communities on future revisions of Asset Management Plans to include natural assets (e.g., watersheds, wetlands, forests)
	Update Emergency Plans to include protocols for major natural disasters and weather events (i.e., evacuation routes, shelter locations)
	Develop a strategy to create an inclusive adaptation plan that captures 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 and Funding Source	Low; County budget, Climate Change Budget, FCM (Municipal Asset Management Program)
Person or Department Responsible	Climate and Environmental Department, Planning Departments of the County and local municipalities, LGLDHU, CAO, RVCA, MVCA, community stakeholders
Start Time	2024
Approximate Timeframe for Completion	Long-term

Key Performance Indicators	Number of County and municipal plans revised with climate change as a consideration
Expected GHG Reduction	Indirect; Low

## Actions You Can Take

Reducing greenhouse gas emissions requires both large and small actions from individuals. Across Lanark County, individuals can take action to reduce the climate impact of their transportation, their home and kitchen, yard and greenspace, belongings, and day to day activities. Some key actions include:

- Greening your transport through active transportation, carpooling, and/or purchasing an electric or hybrid vehicle when it's time to replace your vehicle.
- Improving your home's energy efficiency by completing various home retrofits including upgrading your windows and doors, adding insulation, switching your heating system, etc..
- Naturalizing your yard by reducing the area of maintained lawn or by planting native trees and other plants.
- Reducing your waste by purchasing only as much as you need, buying second-hand or renewable products, composting your organic waste, and purchasing locally.
- Getting involved in community groups to inspire local change and mobilize climate action.
- Staying informed on local, provincial, national, and international climate action to help you understand what can be done to address climate change.

For a list of tangible actions you can take, please visit our website:

[https://www.lanarkcounty.ca/en/environmental-initiatives/Take\\_Action\\_.aspx](https://www.lanarkcounty.ca/en/environmental-initiatives/Take_Action_.aspx).

## 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 Ontario<sup>23</sup>. 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 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:

<sup>23</sup> 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>

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.

Examples of 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](#)
- [FCM – Municipal Asset Management Program](#)

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 is provided in Appendix C. The list is subject to change over time. Lanark County will continue to monitor and seek funding as more opportunities become available.

### **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         | • Conservation authorities          |
| • Community groups         | • Local businesses and associations |
| • Non-profit organizations | • Academic institutions             |
| • Local schools            | • 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. As increasing staff capacity may be a limitation of some municipalities, the County is committed to providing support and guidance as they navigate the creation of their own corporate and community climate action plans. 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 plans<sup>24</sup>.

### **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 management, development, 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

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<sup>24</sup> Ibid 24

will also be reviewed every two 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 benefits<sup>25</sup>.

### **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. Similarly, at the planning stage of each goal, an engagement plan will be created. These will 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, training programs, and public events. Hiring a communications coordinator 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. Advance transportation demand management programming and infrastructure
2. Improve energy efficiency of existing buildings
3. Optimize organic waste diversion
4. Support the adoption of electric vehicles and equipment
5. Transition to low-carbon transportation when electric is not a viable solution
6. Sequester carbon and protect natural resources
7. Increase the use of local and renewable energy generation and security
8. Create a climate conscious community culture

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). New goals will be prioritized as time progresses and priorities are achieved.

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<sup>25</sup> Ibid 24

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

<b>Major Climate Initiative</b>	<b>Priority Community Goal</b>	<b>Priority Corporate Goal</b>
Advance transportation demand management programming and infrastructure	1.4 Update the Transportation Master Plan to include active transportation	N/A
	1.5 Reduce single occupancy automated vehicle trips by providing local transit, carpooling, and ridesharing solutions suitable for rural communities	
Improve energy efficiency of existing buildings	2.1 Develop and support the delivery of a local home energy retrofit program including those offered by partner non-profits and private companies	2.5 Optimize heating and cooling efficiency in all County buildings to reduce energy consumption
	2.2 Establish a campaign to increase energy/water retrofits within the industrial, commercial, and institutional sector	3.2 Complete energy audits to identify the most effective energy-saving opportunities and prioritize projects when possible
Optimize organic waste diversion	4.2 Optimize organic waste diversion	N/A
	4.3 Explore utilizing organic waste and treated biosolids for third party renewable natural gas (RNG) production	N/A
Support the adoption of electric vehicles and equipment	1.1 Increase electric vehicle uptake and local charging infrastructure for public access	4.1 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	4.3 The procurement of any replacement or new equipment and power tools be electric, unless an electric option is not available
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
Sequester carbon and protect natural resources	3.1 Increase the managed forested area and tree canopy within Lanark County	N/A
	3.2 Protect the carbon sequestration and climate resilience value of wetlands, greenspaces, and other naturalized areas within the County	

Increase the use of local and renewable energy generation and security	2.5 Explore opportunities to utilize other renewable energy sources and technologies where feasible	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 either adopt or develop their own 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 and allocate resources accordingly.

Progress on each goal can be measured broadly through energy and greenhouse gas emission data, as well as through key performance indicators (KPI) specific to each goal. Example KPI include energy usage data, engagement data (e.g., number of participants in events or projects, number of people reached), and policy development, among others. KPI have been identified for each community and corporate goal. More specific and tailored KPI will be identified during the planning stage of each goal. Collecting empirical data throughout the implementation period will also be necessary to quantify the impact of actions.

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 and made available to the public at the end of each year. This report will outline:

- Progress on key initiatives (e.g., stage of implementation, next steps, etc.)
- Barriers
- Summary of key performance indicators and data (if available)
- Projected timelines

The Climate Action Plan will be reviewed every two years. These reviews will include an inventory update and a review of emission reduction targets. These reviews will also 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.



## Challenges and Limitations

Understanding the challenges and limitations of the Climate Action Plan and climate action in general 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 to 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 and effectively reduce single passenger travel. 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 consultants<sup>26</sup>. Lanark County is available to assist local municipalities where possible in the development and implementation of their climate action plans. 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.

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<sup>26</sup> 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](https://assets-global.website-files.com/6022ab403a6b2126c03ebf95/607d839e9feb3a640fb82fd9_Small%20and%20Rural%20Communities%20Guidebook_EN.pdf)

## Capacity of the Electrical Grid

According to the Independent Electricity System Operator (IESO), Ontario has entered a period of increasing electricity demand after years of declining consumption<sup>27</sup>. The IESO forecasts an annual demand increase of almost two percent over the next 20 years, with the primary drivers being developments in the industrial sector, in particular mining, steel, electric vehicle battery and hydrogen production; greenhouse construction in the agricultural sector; and electrification of the transportation sector. In combination, there is a decreasing electricity supply province-wide due to nuclear retirements and refurbishments, and expiring generation contracts. To address the increasing demand and decreasing supply, the IESO recognizes the importance of securing new energy generation and storage capacity. The IESO will continue to work with electricity sector partners to address future supply challenges in a timely, cost-effective, and flexible way. For more information on how the IESO plans on keeping up with the evolving electrical grid, visit their website at <https://www.ieso.ca/en/Learn/The-Evolving-Grid/Securing-New-Energy-Supply>.

## Appendices

### Appendix A: Local Climate Projections

#### Climate and Temperature Projections

Climate and temperature projections are based on data obtained from the Climate Atlas of Canada (<https://climateatlas.ca/>), which is an interactive tool for citizens, researchers, businesses, and community and political leaders to learn about climate change in Canada. The Climate Atlas sources most of its data from the Pacific Climate Impacts Consortium (PCIC), which uses 24 climate models to

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<sup>27</sup> IESO (2022), *Annual Planning Outlook. Ontario's electricity system needs: 2024-2043*. [Annual Planning Outlook \(ieso.ca\)](https://www.ieso.ca/en/Learn/Annual-Planning-Outlook)

project future climate conditions in response to two emissions scenarios – a low carbon scenario (RCP 4.5) and a high carbon scenario (RCP 8.5; Table 2).

**Table 2: RCP 8.5 - High Carbon scenario for Lanark County**

**RCP 8.5: High Carbon climate future**

GHG emissions continue to increase at current rates

Variable	Period	1976-2005	2021-2050			2051-2080		
		Mean	Low	Mean	High	Low	Mean	High
Precipitation (mm)	annual	866	772	924	1087	796	955	1134
Precipitation (mm)	spring	206	151	227	308	163	241	324
Precipitation (mm)	summer	220	145	225	308	139	220	308
Precipitation (mm)	fall	241	171	251	336	171	256	358
Precipitation (mm)	winter	200	152	221	298	168	238	320
Mean Temperature (°C)	annual	6.5	7.3	8.7	10.1	9.4	10.9	12.7
Mean Temperature (°C)	spring	5.7	5.2	7.6	10.2	7.1	9.6	12.5
Mean Temperature (°C)	summer	19.5	20.1	21.6	23	21.8	23.8	25.9
Mean Temperature (°C)	fall	8.5	9	10.7	12.5	10.9	12.7	14.6
Mean Temperature (°C)	winter	-7.9	-8.4	-5.5	-2.5	-5.8	-2.9	0
Tropical Nights	annual	4	5	13	24	15	31	50
Very hot days (+30°C)	annual	13	15	32	50	33	58	82
Very cold days (-30°C)	annual	1	0	0	1	0	0	0
Date of Last Spring Frost	annual	May 2	April 3	April 22	May 9	March 23	April 13	May 2
Date of First Fall Frost	annual	Oct. 3	Sep. 29	Oct. 18	Nov. 5	Oct. 10	Oct. 29	Nov. 19
Frost-Free Season (days)	annual	152	148	176	206	167	196	229

**Community Business as Usual Forecast**

The community business as usual forecast is based on the best available data showing an estimated 1.84% annual county-wide population growth rate for 2019. Since assuming a one-to-one relationship between population growth rate and all greenhouse gas inventory sectors likely overestimates future emissions, a series of assumptions were made when forecasting emissions (Table 3).

**Table 3: Assumptions made to calculate the BAU scenario**

GHG Inventory Sector	Assumptions	Net Impact on BAU forecast
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Transportation	Newer internal combustion vehicles using gasoline and diesel are required to be made more fuel efficient over time due to existing federal standards and regulations affecting auto manufacturing. <sup>28</sup> This will help decrease fuel consumption per VKT.	Potential decrease in emissions by 1-1.25% per year dampened to 0.75% per year due to increasing GHGs from electricity generation
Residential and ICI stationary energy	New equipment and appliances will be more efficient over time due to existing standards and regulations affecting their manufacturing. A similarly case exists for new buildings constructed to the provincial building code in comparison to historical construction. <sup>29</sup> This will help decrease natural gas and electricity consumption per capita and in local GDP.  According to the IESO, the carbon intensity of the Provincial electricity grid is expected to double from 2019 – 2029 and quadruple by 2043. This increases the emission factors used in estimating GHGs from electricity consumption within Lanark. <sup>30</sup>	
Solid Waste/wastewater	Assumed a one-to-one relationship with population growth in all BAU scenarios.	+1.84% per year
Agriculture (Livestock) / Forests	Area of agricultural land within the county has the potential to decrease over the next few decades due to expanding development as the population increases over time in all scenarios. It is also assumed there is no new managed forest area in any of the forecasts. These assumptions are the same in all four BAU scenarios.	0%

## Appendix B: Cost and timeframe definitions

Each corporate and community goal includes information on cost and approximate timeframe for completion. The cost to the County will be dependent upon external funding and partnership opportunities. The definitions for each cost and timeframe category are as follows:

### Cost

Low = < \$10,000

Medium = \$10,000 - \$100,000

<sup>28</sup> See [CER – Market Snapshot: Vehicle emissions standards will reduce gasoline use \(cer-rec.gc.ca\)](https://www.cer-rec.gc.ca)

<sup>29</sup> See the Demand-Forecast-Module-Data within the Independent Electricity System Operator’s (IESO) 2022 Annual Planning Outlook <https://www.ieso.ca/en/Sector-Participants/Planning-and-Forecasting/Annual-Planning-Outlook>

<sup>30</sup> See IESO 2022 Annual Planning Outlook report (Figure 48) <https://www.ieso.ca/en/Sector-Participants/IESO-News/2022/12/2022-Annual-Planning-Outlook>

High = > \$100,000

**Approximate timeframe for completion**

Short-term = 1-2 years

Mid-term = 3-6 years

Long-term = 7-10 years

Ongoing = more than 10 years

**Appendix C: Available Funding Programs**

The following lists of funding opportunities are not exhaustive and are subject to change. The lists will be revised with each revision of the Climate Action Plan to reflect the current opportunities available.

**Table 4: Funding programs available for corporate actions**

Funding Name	Provider	Description
<b>Applicable Sector: Transportation and Equipment</b>		
Electric Vehicle Incentive Program	Government of Canada	<a href="https://tc.canada.ca/en/road-transportation/innovative-technologies/zero-emission-vehicles/light-duty-zero-emission-vehicles/incentives-purchasing-zero-emission-vehicles">https://tc.canada.ca/en/road-transportation/innovative-technologies/zero-emission-vehicles/light-duty-zero-emission-vehicles/incentives-purchasing-zero-emission-vehicles</a>
<b>Applicable Sector: Buildings and Energy</b>		
Pilot project: Retrofit of municipal facilities	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/study-retrofit-municipal-facilities">https://greenmunicipalfund.ca/funding/study-retrofit-municipal-facilities</a>
Study: Retrofit of municipal facilities		<a href="https://greenmunicipalfund.ca/funding/study-retrofit-municipal-facilities">https://greenmunicipalfund.ca/funding/study-retrofit-municipal-facilities</a>
Capital project: Retrofit of municipal facilities		<a href="https://greenmunicipalfund.ca/funding/capital-project-retrofit-municipal-facilities">https://greenmunicipalfund.ca/funding/capital-project-retrofit-municipal-facilities</a>
Study: New construction of energy-efficient municipal facilities	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/study-new-construction-energy-efficient-municipal-facilities">https://greenmunicipalfund.ca/funding/study-new-construction-energy-efficient-municipal-facilities</a>
Pilot project: New construction of energy-efficient municipal facilities		<a href="https://greenmunicipalfund.ca/funding/pilot-project-new-construction-energy-efficient-municipal-facilities">https://greenmunicipalfund.ca/funding/pilot-project-new-construction-energy-efficient-municipal-facilities</a>
Capital project: New construction of energy-efficient facilities		<a href="https://greenmunicipalfund.ca/funding/capital-project-new-construction-energy-efficient-facilities">https://greenmunicipalfund.ca/funding/capital-project-new-construction-energy-efficient-facilities</a>
Capital project: Water conservation, municipal project	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/capital-project-water-conservation-municipal-project">https://greenmunicipalfund.ca/funding/capital-project-water-conservation-municipal-project</a>

Pilot project: Water conservation, municipal project		<a href="https://greenmunicipalfund.ca/funding/pilot-project-water-conservation-municipal-project">https://greenmunicipalfund.ca/funding/pilot-project-water-conservation-municipal-project</a>
Study: Water conservation, municipal project		<a href="https://greenmunicipalfund.ca/funding/study-water-conservation-municipal-project">https://greenmunicipalfund.ca/funding/study-water-conservation-municipal-project</a>
<b>Applicable Sector: Waste Management and Diversion</b>		
Pilot project: Stormwater quality, municipal project	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/pilot-project-stormwater-quality-municipal-project">https://greenmunicipalfund.ca/funding/pilot-project-stormwater-quality-municipal-project</a>
Study: Stormwater quality, municipal project		<a href="https://greenmunicipalfund.ca/funding/study-stormwater-quality-municipal-project">https://greenmunicipalfund.ca/funding/study-stormwater-quality-municipal-project</a>
<b>Applicable Sector: Lanark County Housing Corporation</b>		
Affordable Multi-Family Residential Program	Enbridge	<a href="https://www.enbridgegas.com/business-industrial/incentives-conservation/programs-and-incentives/retrofits-custom-projects/affordable-multi-family-housing-program">https://www.enbridgegas.com/business-industrial/incentives-conservation/programs-and-incentives/retrofits-custom-projects/affordable-multi-family-housing-program</a>
Planning: Early support grant for sustainable affordable housing projects	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/planning-early-support-grant-sustainable-affordable-housing-projects">https://greenmunicipalfund.ca/funding/planning-early-support-grant-sustainable-affordable-housing-projects</a>
Study: Retrofit or new construction of sustainable affordable housing		<a href="https://greenmunicipalfund.ca/funding/study-retrofit-new-construction-sustainable-affordable-housing">https://greenmunicipalfund.ca/funding/study-retrofit-new-construction-sustainable-affordable-housing</a>
Pilot project: Retrofit or new construction of sustainable affordable housing		<a href="https://greenmunicipalfund.ca/funding?page=2">https://greenmunicipalfund.ca/funding?page=2</a>
National Housing Co-Investment Fund: Renovation	Canadian Mortgage and Housing Corporation-	<a href="https://www.cmhc-schl.gc.ca/professionals/project-funding-and-mortgage-financing/funding-programs/all-funding-programs/co-investment-fund/co-investment-contribution-funding">https://www.cmhc-schl.gc.ca/professionals/project-funding-and-mortgage-financing/funding-programs/all-funding-programs/co-investment-fund/co-investment-contribution-funding</a>
Canada Greener Affordable Housing program		<a href="https://www.cmhc-schl.gc.ca/professionals/project-funding-and-mortgage-financing/funding-programs/all-funding-programs/canada-greener-affordable-housing-program">https://www.cmhc-schl.gc.ca/professionals/project-funding-and-mortgage-financing/funding-programs/all-funding-programs/canada-greener-affordable-housing-program</a>
Deep Retrofit Accelerator Initiative	Government of Canada via Envirocentre	<a href="https://natural-resources.canada.ca/energy-efficiency/buildings/deep-retrofit-accelerator-initiative/24925">https://natural-resources.canada.ca/energy-efficiency/buildings/deep-retrofit-accelerator-initiative/24925</a>

**Table 5:** Funding programs available for community actions

Funding Name	Provider	Description
<b>Applicable Sector: Transportation</b>		
<i>For Municipalities</i>		
Rural Transportation Fund	Government of Canada	<a href="https://www.infrastructure.gc.ca/rural-trans-rural/details-eng.html">https://www.infrastructure.gc.ca/rural-trans-rural/details-eng.html</a>
Study: Transportation networks and commuting options	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/study-transportation-networks-commuting-options">https://greenmunicipalfund.ca/funding/study-transportation-networks-commuting-options</a>
Electric Vehicle Incentive Program	Government of Canada	<a href="https://tc.canada.ca/en/road-transportation/innovative-technologies/zero-emission-vehicles/light-duty-zero-emission-vehicles/incentives-purchasing-zero-emission-vehicles">https://tc.canada.ca/en/road-transportation/innovative-technologies/zero-emission-vehicles/light-duty-zero-emission-vehicles/incentives-purchasing-zero-emission-vehicles</a>
Pilot project: Transportation networks and commuting options	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/pilot-project-transportation-networks-commuting-options">https://greenmunicipalfund.ca/funding/pilot-project-transportation-networks-commuting-options</a>
Capital project: Transportation networks and commuting options		<a href="https://greenmunicipalfund.ca/funding/capital-project-transportation-networks-commuting-options">https://greenmunicipalfund.ca/funding/capital-project-transportation-networks-commuting-options</a>
Study: Reduce fossil fuel use in fleets	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/study-reduce-fossil-fuel-use-fleets">https://greenmunicipalfund.ca/funding/study-reduce-fossil-fuel-use-fleets</a>
Pilot project: Reduce fossil fuel use in fleets		<a href="https://greenmunicipalfund.ca/funding/pilot-project-reduce-fossil-fuel-use-in-fleets">https://greenmunicipalfund.ca/funding/pilot-project-reduce-fossil-fuel-use-in-fleets</a>
Capital project: Reduce fossil fuel use in fleets		<a href="https://greenmunicipalfund.ca/funding/capital-project-reduce-fossil-fuel-use-fleets">https://greenmunicipalfund.ca/funding/capital-project-reduce-fossil-fuel-use-fleets</a>
<b>Applicable Sector: Buildings</b>		
<i>For Homeowners</i>		
Greener Homes Grant	Enbridge/Government of Canada	<a href="https://natural-resources.canada.ca/energy-efficiency/homes/canada-greener-homes-initiative/canada-greener-homes-grant/canada-greener-homes-grant/23441">https://natural-resources.canada.ca/energy-efficiency/homes/canada-greener-homes-initiative/canada-greener-homes-grant/canada-greener-homes-grant/23441</a>
Renovate Lanark	Lanark County	<a href="https://www.lanarkcounty.ca/en/family-and-social-services/renovate.aspx">https://www.lanarkcounty.ca/en/family-and-social-services/renovate.aspx</a>
Home Winterproofing Program	Enbridge	<a href="https://www.enbridgegas.com/residential/rebates-energy-conservation/home-winterproofing-program#:~:text=Free%20energy%20upgrades%20for%20homes%20in%20need%20The,to%20reduce%20energy%20costs%20up%20to%2030%20percent.">https://www.enbridgegas.com/residential/rebates-energy-conservation/home-winterproofing-program#:~:text=Free%20energy%20upgrades%20for%20homes%20in%20need%20The,to%20reduce%20energy%20costs%20up%20to%2030%20percent.</a>

Energy Affordability Program	Save on Energy	<a href="https://www.saveonenergy.ca/For-Your-Home/Energy-Affordability-Program">https://www.saveonenergy.ca/For-Your-Home/Energy-Affordability-Program</a>
Net Metering	Ontario Government	<a href="https://www.ontario.ca/page/save-your-energy-bill-net-metering">https://www.ontario.ca/page/save-your-energy-bill-net-metering</a>
<i>Businesses and ICI</i>		
Small Business Program	Save on Energy	<a href="https://saveonenergy.ca/en/For-Your-Small-Business/Programs-and-Incentives/Small-Business-Program">https://saveonenergy.ca/en/For-Your-Small-Business/Programs-and-Incentives/Small-Business-Program</a>
Existing Building Commissioning program		<a href="https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Existing-Building-Commissioning-Program">https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Existing-Building-Commissioning-Program</a>
Strategic Energy Management program		<a href="https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Strategic-Energy-Management-Program">https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Strategic-Energy-Management-Program</a>
Industrial Energy Efficiency Program		<a href="https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Industrial-Energy-Efficiency-Program">https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Industrial-Energy-Efficiency-Program</a>
Energy Performance Program		<a href="https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Energy-Performance-Program">https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Energy-Performance-Program</a>
Retrofit Program		<a href="https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Retrofit-Program/About">https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives/Retrofit-Program/About</a>
Foodservice distributor discount program		<a href="https://www.saveonenergy.ca/en/For-Business-and-Industry/Programs-and-incentives/Foodservice-Distributor-Discount-Program">https://www.saveonenergy.ca/en/For-Business-and-Industry/Programs-and-incentives/Foodservice-Distributor-Discount-Program</a>
Retrofits and Custom Projects	Enbridge	<a href="https://www.enbridgegas.com/business-industrial/incentives-conservation/programs-and-incentives/retrofits-custom-projects">https://www.enbridgegas.com/business-industrial/incentives-conservation/programs-and-incentives/retrofits-custom-projects</a>
Industrial Custom Engineering Program		<a href="https://www.enbridgegas.com/business-industrial/incentives-conservation/programs-and-incentives/retrofits-custom-projects/industrial-custom-engineering-program">https://www.enbridgegas.com/business-industrial/incentives-conservation/programs-and-incentives/retrofits-custom-projects/industrial-custom-engineering-program</a>
Commercial Custom Retrofit Program		<a href="https://www.enbridgegas.com/business-industrial/incentives-conservation/programs-and-incentives/retrofits-custom-projects/commercial-custom-retrofit-program">https://www.enbridgegas.com/business-industrial/incentives-conservation/programs-and-incentives/retrofits-custom-projects/commercial-custom-retrofit-program</a>
<i>For Municipalities</i>		
Study: Design a local home-energy upgrade financing program	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/study-design-local-home-energy-upgrade-financing-program">https://greenmunicipalfund.ca/funding/study-design-local-home-energy-upgrade-financing-program</a>
Pilot project: Local home-energy upgrade financing program		<a href="https://greenmunicipalfund.ca/funding/pilot-project-local-home-energy-upgrade-financing-program">https://greenmunicipalfund.ca/funding/pilot-project-local-home-energy-upgrade-financing-program</a>



Study: Renewable energy production on a brownfield	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/study-renewable-energy-production-brownfield">https://greenmunicipalfund.ca/funding/study-renewable-energy-production-brownfield</a>
Pilot project: Renewable energy production on a brownfield		<a href="https://greenmunicipalfund.ca/funding/pilot-project-renewable-energy-production-brownfield">https://greenmunicipalfund.ca/funding/pilot-project-renewable-energy-production-brownfield</a>
Capital project: Renewable energy production on a brownfield		<a href="https://greenmunicipalfund.ca/funding/capital-project-renewable-energy-production-brownfield">https://greenmunicipalfund.ca/funding/capital-project-renewable-energy-production-brownfield</a>
Capital project: Water conservation, community project	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/capital-project-water-conservation-community-project">https://greenmunicipalfund.ca/funding/capital-project-water-conservation-community-project</a>
Study: Water conservation, community project		<a href="https://greenmunicipalfund.ca/funding/study-water-conservation-community-project">https://greenmunicipalfund.ca/funding/study-water-conservation-community-project</a>
Pilot project: Water conservation, community project		<a href="https://greenmunicipalfund.ca/funding/pilot-project-water-conservation-community-project">https://greenmunicipalfund.ca/funding/pilot-project-water-conservation-community-project</a>
Capital project: Energy recovery or district energy	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/capital-project-energy-recovery-or-district-energy">https://greenmunicipalfund.ca/funding/capital-project-energy-recovery-or-district-energy</a>
Pilot project: Energy recovery or district energy		<a href="https://greenmunicipalfund.ca/funding/pilot-project-energy-recovery-or-district-energy">https://greenmunicipalfund.ca/funding/pilot-project-energy-recovery-or-district-energy</a>
Study: Energy recovery or district energy		<a href="https://greenmunicipalfund.ca/funding/study-energy-recovery-district-energy">https://greenmunicipalfund.ca/funding/study-energy-recovery-district-energy</a>
<b>Applicable Sector: Natural Heritage and Resources</b>		
TD Friends of the Environment Foundation Grant	TD	<a href="https://www.td.com/ca/en/about-td/ready-commitment/funding/fef-grant">https://www.td.com/ca/en/about-td/ready-commitment/funding/fef-grant</a>

Capital project: Site remediation or risk management	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/capital-project-site-remediation-or-risk-management">https://greenmunicipalfund.ca/funding/capital-project-site-remediation-or-risk-management</a>
Study: Site remediation or risk management		<a href="https://greenmunicipalfund.ca/funding/study-site-remediation-or-risk-management">https://greenmunicipalfund.ca/funding/study-site-remediation-or-risk-management</a>
Pilot project: Site remediation or risk management		<a href="https://greenmunicipalfund.ca/funding/pilot-project-site-remediation-or-risk-management">https://greenmunicipalfund.ca/funding/pilot-project-site-remediation-or-risk-management</a>
Plan: Brownfield strategy or action plan	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/plan-brownfield-strategy-action">https://greenmunicipalfund.ca/funding/plan-brownfield-strategy-action</a>
Capital project: Brownfield site redevelopment		<a href="https://greenmunicipalfund.ca/funding/capital-project-brownfield-redevelopment">https://greenmunicipalfund.ca/funding/capital-project-brownfield-redevelopment</a>
Study: Brownfield site redevelopment		<a href="https://greenmunicipalfund.ca/funding/study-brownfield-site-redevelopment">https://greenmunicipalfund.ca/funding/study-brownfield-site-redevelopment</a>
Pilot project: Brownfield site redevelopment		<a href="https://greenmunicipalfund.ca/funding/pilot-project-brownfield-site-redevelopment">https://greenmunicipalfund.ca/funding/pilot-project-brownfield-site-redevelopment</a>
Study: Stormwater quality, community project	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/study-stormwater-quality-community-project">https://greenmunicipalfund.ca/funding/study-stormwater-quality-community-project</a>
Capital project: Stormwater quality, community project		<a href="https://greenmunicipalfund.ca/funding?page=1">https://greenmunicipalfund.ca/funding?page=1</a>
Pilot projects: Stormwater quality, community project		<a href="https://greenmunicipalfund.ca/funding/pilot-projects-stormwater-quality-community-project">https://greenmunicipalfund.ca/funding/pilot-projects-stormwater-quality-community-project</a>
ALUS Lanark	ALUS	<a href="https://alus.ca/alus_community/alus-lanark/">https://alus.ca/alus_community/alus-lanark/</a>
ECCC Funding Opportunities	Government of Canada	<a href="https://www.canada.ca/en/environment-climate-change/services/environmental-funding.html">https://www.canada.ca/en/environment-climate-change/services/environmental-funding.html</a>

Applicable Sector: Waste Management and Diversion		
Capital project: Waste stream management	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/capital-project-waste-stream-management">https://greenmunicipalfund.ca/funding/capital-project-waste-stream-management</a>
Study: Waste stream management		<a href="https://greenmunicipalfund.ca/funding?page=2">https://greenmunicipalfund.ca/funding?page=2</a>
Pilot project: Waste stream management		<a href="https://greenmunicipalfund.ca/funding/pilot-project-waste-stream-management">https://greenmunicipalfund.ca/funding/pilot-project-waste-stream-management</a>
Capital project: Waste stream management		<a href="https://greenmunicipalfund.ca/funding/capital-project-waste-stream-management">https://greenmunicipalfund.ca/funding/capital-project-waste-stream-management</a>
Capital project: Waste reduction and diversion	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/capital-project-waste-reduction-diversion">https://greenmunicipalfund.ca/funding/capital-project-waste-reduction-diversion</a>
Pilot project: Waste reduction and diversion		<a href="https://greenmunicipalfund.ca/funding/pilot-project-waste-reduction-diversion">https://greenmunicipalfund.ca/funding/pilot-project-waste-reduction-diversion</a>
Study: Waste reduction and diversion		<a href="https://greenmunicipalfund.ca/funding/study-waste-reduction-diversion">https://greenmunicipalfund.ca/funding/study-waste-reduction-diversion</a>
Capital project: Wastewater systems	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/capital-project-wastewater-systems">https://greenmunicipalfund.ca/funding/capital-project-wastewater-systems</a>
Pilot project: Wastewater systems		<a href="https://greenmunicipalfund.ca/funding/pilot-project-wastewater-systems">https://greenmunicipalfund.ca/funding/pilot-project-wastewater-systems</a>
Study: Wastewater systems		<a href="https://greenmunicipalfund.ca/funding/study-wastewater-systems">https://greenmunicipalfund.ca/funding/study-wastewater-systems</a>
Capital project: Septic wastewater systems		<a href="https://greenmunicipalfund.ca/funding/capital-project-septic-wastewater-systems">https://greenmunicipalfund.ca/funding/capital-project-septic-wastewater-systems</a>
Applicable Sector: Planning		
Plan: Sustainable neighbourhood action plan	Green Municipal Fund	<a href="https://greenmunicipalfund.ca/funding/plan-sustainable-neighbourhood-action-plan">https://greenmunicipalfund.ca/funding/plan-sustainable-neighbourhood-action-plan</a>