



COUNTY OF LAMBTON CORPORATE CLIMATE CHANGE STRATEGY



2025-2030



**The Corporation of the County of Lambton
Corporate Climate Change Strategy**

**Presented to Lambton County Council
Committee of the Whole
June 19, 2024**



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ACKNOWLEDGEMENT OF ANCESTRAL LANDS

We acknowledge that the land on which we reside is part of the ancestral land of the Chippewa, Odawa, and Potawatomi peoples, referred to collectively as the Anishinaabeg. It is through the connection of the Anishinaabeg with the spirit of the land, water and air that we recognize their unique cultures, traditions, and values. **Together as treaty people, we have a shared responsibility to act with respect for the environment that sustains all life, protecting the future for those generations to come.**



Lambton is one of over 500 municipalities across Canada that have committed to reducing corporate GHG emissions through the PCP program

INTRODUCTION

At its meeting of September 6, 2023, Lambton County Council directed staff to join the [Partners for Climate Protection \(PCP\) program](#), and commit to achieving the milestones set out in the PCP five-milestone framework as a path to develop a corporate Climate Change Adaptation Strategy. The PCP program is a free resource offered through ICLEI—Local Governments for Sustainability (**ICLEI Canada**) and the Federation of Canadian Municipalities.

The five-step Milestone Framework is designed to help the County **take action on climate change by reducing emissions**. The program begins with (1) creating an inventory of greenhouse gas (**GHG**) emissions and forecast, followed by (2) setting a GHG emissions reduction target, (3) developing an action plan to reduce emissions, (4) implementing the plan and finally, committing to (5) monitoring progress and reporting on results. In order to meet ambitious federal and international recommendations, this Milestone Framework encourages members to set a midterm target and a long-term target for GHG emissions reduction. The Intergovernmental Panel on Climate Change (**IPCC**) has established scientific targets of a 45% reduction by 2030 (from 2005 levels) and net-zero by 2050.

Emission reduction targets set through the PCP program are voluntary and can be established or updated at any point in the milestone process. This strategy for the Corporation does not include a specific target as a percentage reduction relative to a baseline year, to be achieved by a target year. This is due to the limited availability of data for consumption back to 2005 levels, as the baseline year. Instead, it is recommended that the County **focus on measuring GHG emissions each year and monitoring and reporting on reduction progress** to support the ambitious IPCC targets noted above.

PCP MILESTONE FRAMEWORK

MILESTONE 1. Create a **GHG Emissions Inventory & Forecast** for the Corporation.



Milestone 1 involves creating a GHG emissions inventory and forecast by gathering data on energy use and solid waste generation to provide the necessary baseline data against which progress can be measured.

MILESTONE 2. Set a **GHG Emissions Reduction Target** for the Corporation.



The target specifies the quantity of emissions Lambton aims to reduce through various measures outlined in the strategy. Emission reduction targets set through the PCP program are voluntary and can be established or updated at any point in the milestone process.

MILESTONE 3. Develop an **Action Plan** for the Corporation.



Milestone 3 outlines individual actions to be undertaken in order to reduce emissions, details about stakeholder engagement, and identifies where responsibility for implementing the plan lies.

MILESTONE 4. **Implement** the Plan for the Corporation.



Allows the County to keep track of implementation progress by identifying the actions completed, as well as any implementation partners, financing mechanisms, and variations from the original local action plan.

MILESTONE 5. Monitor Progress & **Report Results**.



Provides the County with the opportunity to assess progress towards its emission reduction goals and to measure the impact of implemented actions outlined in the strategy.

SHAPING THE STRATEGY

Consultation and Outreach

The priorities identified in this plan were developed through consultation with staff representatives from across the Corporation. The internal staff Climate Change Working Group worked to identify potential climate change adaptation strategies to reasonably reduce the Corporation's environmental impact, including GHG emissions, in its operations.

Made up of representatives from every County Division and reporting to the General Manager team, the **Climate Change Working Group** met over the course of several months to complete a GHG inventory and forecast for the Corporation, set a GHG reduction target, develop a corporate action plan, and establish a process to monitor progress and report on results.

This group reviewed federal and provincial strategy documents related to climate change adaptation, as well as best practices and guidance related to climate change adaptation across the municipal sector. Funding opportunities available through the Federation of Canadian Municipalities (**FCM**) [**Green Municipal Fund**](#) were also evaluated, and action items aligned to available programs. Further, the Working Group also reviewed previously approved corporate policies, planning documents and strategic directions related to climate change and environmental sustainability to ensure these were incorporated into the new strategy. Input was also sought from the County's staff environmental committee ('**Going Green Committee**').

External consultation included dialogue with representatives of **St. Clair Region Conservation Authority** and **Ausable Bayfield Conservation Authority** in the preparation of this strategy, including a review and discussion regarding the climate change planning priorities for each. The group also engaged with the **County of Huron** to learn from their recent experience with the development and implementation of a Corporate Climate Change Adaptation Strategy and corporate policies supporting GHG emissions reduction.

The planning, asset management and conservation related commitments of municipalities within Lambton County were also reviewed to ensure the strategies are aligned between the County and lower-tier municipal partners.

The members of the **Climate Change Working Group** are as follows:

- Andrew Meyer, Deputy CAO / General Manager
Cultural Services
- Tara Pounds, Revenue Development Officer
Office of the CAO
- Ryan Beauchamp, Assistant County Solicitor/Deputy Clerk
Corporate Services
- Rob King, Manager, Procurement & Projects
Finance, Facilities & Court Services
- Dave Graham, Manager, Asset Management
Infrastructure & Development Services
- Tim Payne, Woodlands Conservation Officer
Infrastructure & Development Services / SCRCA
- Mark Genovy, Environmental Services Supervisor
Long Term Care
- Chad Ikert, Manager, Health Protection
Lambton Public Health
- Dereck Holmes, Supervisor, Property Services - Housing
Social Services
- Daniel Bittman, Financial and Data Analyst
Social Services

This group, or alternate designates from each Division, will continue to meet on an annual basis to review progress and work in collaboration with the General Manager team to prepare an **annual progress report** on strategy implementation for the consideration of Lambton County Council.

BUILDING ON WORK ACCOMPLISHED

The Corporation has demonstrated leadership in environmental stewardship and sustainability through previous planning efforts such as the County of Lambton [Corporate Clean Air Plan](#) (2008, 2018) and the County of Lambton [Integrated Community Sustainability Plan](#) (2013).

These plans are foundational to future planning and set out steps to reduce emissions of harmful greenhouse gases (GHGs) into the air, and to alleviate health and environmental impacts associated with air pollution and climate change in the community.

In addition to the above-noted plans, the County has engaged in a number of other important climate change adaptation initiatives across its services areas, including the following:

CAO / Corporate Services Division

Corporate digitization planning efforts and remote meeting capabilities demonstrate the County's commitment to addressing GHG emissions, in addition to other corporate-wide environmental initiatives related to waste reduction, reuse and recycling programs (such as the IT e-waste program). Through the support of the [Municipal Modernization Program](#), significant efforts have been made across the Corporation in the digitization of documentation and process; modified operating procedures to enhance efficiencies through a reduction in administrative processes; and organizational design changes have increased integrated service delivery.

Cultural Services Division

Environmental education and advocacy programs are pursued in collaboration with community partners (for example, environmental educational programs, battery recycling available at 16 libraries, native plant sales, One Seed Lambton, etc.). Libraries offer shared community resources and collections, as well as sustainable eLibrary offerings. Recent capital investments in cultural facilities have resulted in improved energy conservation and demand management practices.

Finance, Facilities & Court Services Division

The Corporation's Asset Management Plan demonstrates a commitment to addressing potential impacts and climate-related risks to infrastructure and public assets, providing reliable and affordable services to residents. Procurement practices within County-owned facilities have prioritized energy efficiency and sustainable practices. The Division also operates 13 electric vehicle charging stations at facilities across the County to support alternative fuel infrastructure and sustainable transportation.

Infrastructure & Development Services Division

In accordance with its Official Plan, the Planning Department considers the physical or built environment and how it interacts with the natural environment in relation to planning matters, and advances community-oriented policies that address Climate Change. Climate adaptation and resiliency are incorporated into various Public Works programs including active transportation, household hazardous waste, adopt-a-road programs, road salt management planning and sustainable pavement innovations. The Division also works with St. Clair Region Conservation Authority to oversee land management plans for seven county-owned parcels of land, and over three acres of native tallgrass prairie pollinator habitat at five county-owned sites.

Long Term Care Division

Ongoing efforts to reduce energy consumption through improvements to the building envelope (e.g roofing, insulation, generator upgrades, LED lighting) have been implemented and other improvements are planned. Innovative use of digital platforms in the delivery of services such as paperless documentation, building automation systems and monitoring of infection prevention and control are used in many departments. A number of processes are in place to raise staff awareness in use of disposable products to reduce waste particularly in personal care products.

Public Health Services Division

The Division advances the Ontario Public Health Standards related to healthy environments and climate change, which includes engaging with municipal and other community partners to raise public awareness, address local impacts and reduce exposure to environmental health hazards related to climate change. LPH monitors the impacts of climate change within Lambton County including rising temperatures, extreme weather events, vector-borne illness, food and waterborne

illness, and air pollution. LPH works with municipal partners to review built environment planning proposals to provide healthy communities input and participates in emergency planning as it relates to health impacts that can result from extreme weather emergencies.

Social Services Division

Significant investments in Housing assets to ensure energy efficiency (appliances, windows, insulation, fixtures, solar, heat recovery, variable speed motors, etc.) and sustainable practices in capital improvements.

Though the Corporation is already committed and engaged in reducing its environmental impact within its operations, this Climate Change Strategy identifies relevant data sources, engages stakeholders, prioritizes climate action and opportunities for GHG emissions reduction, and sets in place a process to monitor performance and continually seek improvements.



IMAGE: The Marthaville Habitat Management Area, owned by the County of Lambton and managed by the St. Clair Region Conservation Authority (Photo courtesy of SCRCA).

EMISSIONS INVENTORY

Corporate GHG Emissions Inventory:

A 2023 Corporate Greenhouse Gas (GHG) Inventory was developed as part of the County's participation in the Partners for Climate Protection (PCP) program. The corporate GHG inventory is designed to capture GHG emissions attributable to the County of Lambton operations. It includes emissions arising from the use of all significant assets and services, including:

- Buildings and Facilities
- Fleet Vehicles
- Streetlights and Traffic Signals
- Solid Waste

A corporate inventory is an organization-level GHG inventory akin to those developed by businesses or corporations. It identifies the emissions within the County's direct control or influence, and for which the County is accountable as a corporate entity. The inventory does not include energy consumption data for buildings leased by the County (most libraries, Lambton Shared Services Centre, etc.), buildings managed by separate corporations (Western Sarnia-Lambton Research Park) or for buildings within housing services where tenants are responsible for utility bills. Further, solid waste totals only represent buildings owned by the County, as well as the City of Sarnia owned Sarnia Library. All other buildings leased by the County are not captured in the solid waste inventory as waste collection is managed by the building owner.

With this data, the County has completed a Corporate GHG Emissions Inventory for the 2023 calendar year using the PCP Milestone Tool. Quantifying greenhouse gas (GHG) emissions is necessary step to understanding how the Corporation is impacting the environment. Greenhouse gas emissions, like carbon dioxide, methane, and nitrous oxide gases, trap heat in our atmosphere, causing the increase of global temperatures. Understanding the impact of human activity on greenhouse gas emissions is crucial to informing the Corporation's effort to reduce its impact.

To determine the Corporation’s GHG emissions, the PCP Milestone Tool takes the activity level or rate (A) – including the amount of fuel used in a vehicle, the amount of electricity used in a building, or waste generated at a landfill – and multiplies it by its corresponding emissions factor (EF):

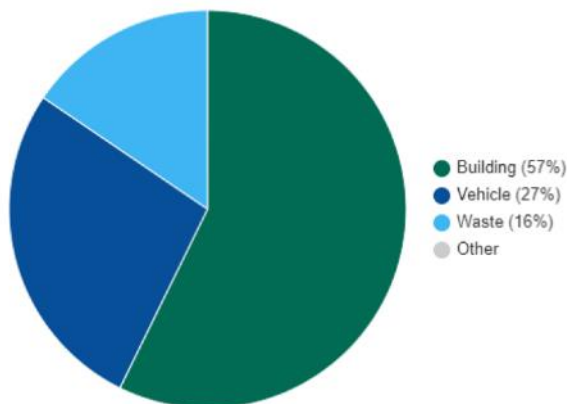
$$\text{Activity (A)} \times \text{Emissions Factor (EF)} = \text{GHG Emissions}$$

Using this calculation, energy use across County operations, including electricity, natural gas, propane, gasoline and diesel consumption where data is available, amounted to approximately **112,993 GJ of energy consumed**.

When this energy consumption is combined with emissions related to solid waste, the Corporation’s GHG Emissions inventory translates to approximately **5,289 metric tonnes of CO₂e** (carbon dioxide equivalent) of Greenhouse Gas (GHG) emissions in 2023. The sources of energy use and solid waste generated will be further described and broken down by the various service areas of the Corporation in the different sections of this document.

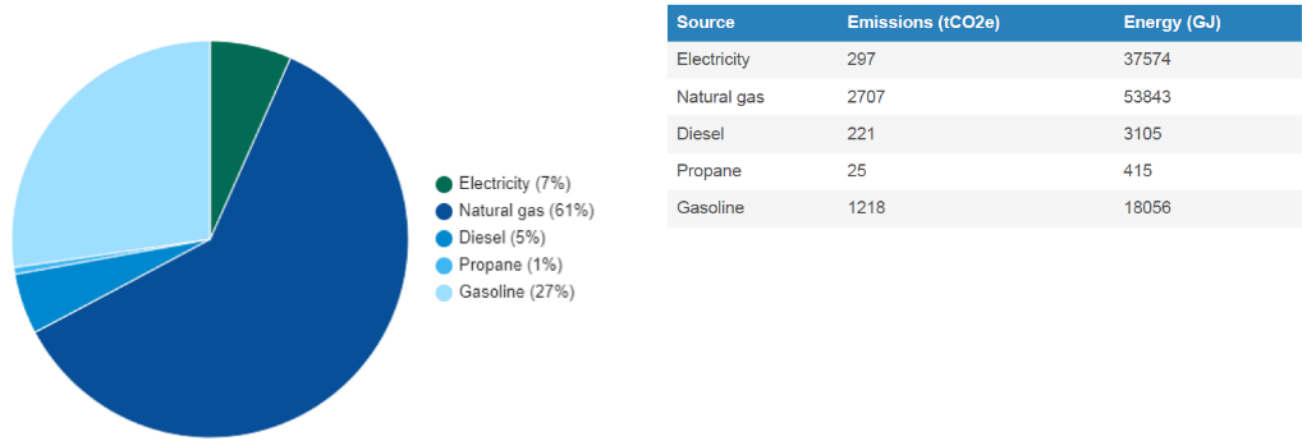
Greenhouse gas emissions (tCO₂e) by sector and source are summarized below:

Greenhouse gas emissions (tCO₂e) by sector



Sector	Emissions (tCO ₂ e)	Energy (GJ)
Building	3028	91661
Vehicle	1439	21161
Streetlights	1	171
Waste	820	0

Greenhouse gas emissions (tCO2e) by source



The 2023 Corporate Greenhouse Gas (GHG) Inventory shown above was entered into the PCP Milestone Tool, revealing how the Corporation consumes energy and generates waste. The inventory process also provides the necessary baseline data against which progress can be measured. Measuring emission levels annually will help to determine if the County is reducing its corporate emissions or continuing along a business-as-usual trajectory.



The County’s Household Hazardous Waste Collection Event in collaboration with Clean Harbors Canada Inc.

STRATEGIC DIRECTIONS

Focusing Our Attention

The Strategic Directions identify the actions the Corporation must take, criteria it must meet, or performance indicators it must strive to reach if the Corporation is to achieve success with plan implementation. The Climate Change Working Group identified actions within each County Division/Department to overcome climate-related challenges and reduce GHG emissions. The group organized these actions into five Strategic Directions that align with the GHG emissions data being reported, and the key municipal sectors identified in the [*Small and Rural Communities Climate Action Guidebook*](#) (including Buildings, Transportation, Waste, and Development of Agriculture, Resources, and Tourism - DART) provided by the Partners for Climate Protection.

The following four **Strategic Directions** will guide the County in reasonably reducing its environmental impact, including GHG emissions, in its operations:

- 1. EFFICIENT BUILDINGS**
- 2. RESPONSIBLE TRANSPORTATION**
- 3. INNOVATIVE WASTE MANAGEMENT**
- 4. DEVELOPMENT OF AGRICULTURE, RESOURCES AND TOURISM**

These Strategic Directions are aimed at focusing organizational attention on what is truly important to effectively deliver on the strategy. To support the action items associated with each of these strategic priorities, the County will undertake the following steps:

- **RESEARCH:** Complete the necessary internal review and planning required to support policy development.
- **PREPARATION:** Pursue procedural and administrative changes, plan for budget implications, and coordinate necessary training and resources to support implementation.
- **IMPLEMENTATION:** Advance strategic priorities through identified action, supported by effective collaboration with community partners to increase probability of success.
- **FOLLOW-UP:** Review outcomes of actions through evaluation of measurable indicators of success and make adjustments as required.



1

STRATEGIC DIRECTION: Efficient Buildings

1. EFFICIENT BUILDINGS

Continued investments to lower emissions, cut energy waste and improve affordability through efficiency

RELEVANT FINDINGS OF THE CLIMATE CHANGE WORKING GROUP / EMISSIONS INVENTORY:

- Facility energy use across County facilities in 2023, including electricity, natural gas and propane consumption where data is available, amounted to 91,661 gigajoules (GJ) or approximately 3,028 tonnes of CO₂e (carbon dioxide equivalent) of Facility Greenhouse Gas (GHG) emissions. It is important to note that within the summary below, Long Term Care and Housing operations are 24 hours per day, seven days per week.

2023 CORPORATE EMISSIONS INVENTORY – BUILDINGS:

SERVICE AREA*	ENERGY CONSUMPTION	GHG EMISSIONS
Long Term Care (24/7)	37,456 GJ	1,305 tCO ₂ e
Housing Services (24/7)	34,712 GJ	1,061 tCO ₂ e
Cultural Services	8,382 GJ	297 tCO ₂ e
Public Health – Admin	2,966 GJ	103 tCO ₂ e
Public Works	2,935 GJ	131 tCO ₂ e
Emergency Medical Services	2,180 GJ	86 tCO ₂ e
County Administration Bldg	2,109 GJ	38 tCO ₂ e
Waste Management	921 GJ	7 tCO ₂ e
TOTAL	91,661 GJ	3,028 tCO₂e

* Does not include leased premises.

RECOMMENDED STRATEGIC ACTIONS:

	STRATEGIC ACTION	ANTICIPATED RESULT
1.1	Promote energy conservation and behaviour changes within the Corporation, with the support of the County's <i>Going Green Committee</i> .	Reduced energy consumption and operating cost.

1.2	Leverage grants, incentives and rebates to support high efficiency new construction and retrofits of County facilities.	Increase energy efficiency in buildings and lower cost.
1.3	Pursue energy-efficient equipment and building upgrades (ie. Appliances, insulation, windows, weather stripping, upgrading insulation, LED lights and smart thermostats).	Increase energy efficiency in buildings and lower operating cost.
1.4	For new construction or major renovations, investigate switching to renewable sources of heat and electricity and investigate retrofit programs (ie. electric heat pumps).	Increase energy efficiency in buildings and lower operating cost.
1.5	For new buildings, adopt procurement practices that stipulate building requirements and integrate specific climate-related policies and actions related to energy efficiency through the design and construction process, taking into account costs and environmental benefits.	Increase energy efficiency in buildings and lower operating cost.
1.6	Planning facilities and properties to facilitate increased recycling/composting/waste aversion.	Conserve landfill space, save energy and reduce greenhouse gas emissions.
1.7	Consider facility adaptation practices to mitigate the impacts of extreme weather/flooding (ie. rain gardens, landscaping to divert water, permeable parking areas, etc.).	Improved control of stormwater volumes, where required.
1.8	Consider adaptation practices related to extreme heat and poor air quality, such as HVAC modifications and air exchange.	Adaptation to respond to climactic and weather conditions that fall outside of historic norms.
1.9	Consideration for back-up generators to support emergency preparedness and continuity of operations in County facilities.	Emergency preparedness to aid in recovering from severe weather conditions that fall outside of historic norms.
1.10	Continue to invest in HVAC Building Automation System upgrades at County facilities.	More effectively monitor and control HVAC systems for operational efficiency.

1.11	Build on the success of the variable frequency drive motor replacement for facility equipment (pumps, damper control, fans).	Increase energy efficiency in buildings and lower operating cost.
1.12	Audit office equipment use across the Corporation to determine efficiencies related to power consumption from lighting, computers and office equipment that is not powered down or turned off when not in use for extended periods of time.	Increase energy efficiency in buildings and lower operating cost.
1.13	Explore potential for integration of renewable electricity generation such as solar photovoltaic, or recovered or renewable thermal energy through County buildings (eligible Green Municipal Fund project).	Provide renewable energy source, generate revenue to lower operating cost, and produce no on-site pollution or emissions.
1.14	Complete energy audits / feasibility studies of County facilities to reduce GHG emissions over time (eligible Green Municipal Fund project).	Increase energy efficiency in buildings and lower operating cost.
1.15	Replace windows and glass entry doors with low-E, argon gas filled windows and doors.	Increase energy efficiency in buildings and lower operating cost.



IMAGE: Members of the Going Green committee plant native trees at the Wyoming Administration building and Lambton Heritage Museum facility in 2023, part of a multi-site planting initiative in partnership with Tree Canada.



2

STRATEGIC DIRECTION: Responsible Transportation

2. RESPONSIBLE TRANSPORTATION

Support efficient fleet operations, encourage more active transportation, facilitate public transit, make EV infrastructure more accessible, and reduce staff travel

RELEVANT FINDINGS OF THE CLIMATE CHANGE WORKING GROUP / EMISSIONS INVENTORY:

- Emissions across all County fleet and staff travel in 2023 amounted to 21,161 GJ gigajoules (GJ) or approximately 1,439 tonnes of CO₂e (carbon dioxide equivalent) of Greenhouse Gas (GHG) emissions.
- In 2023, the County's public works fleet travelled 388,311 kms, and used 261,746 litres of fuel, the County's EMS fleet logged a total of 1,026,000 kms and used 253,056 litres of fuel, and the County's library courier service logged a total of 130,891 kms.
- In 2023, personal vehicle use related to work-related travel by County staff and members of Council amounted to approximately 720,968 kms travelled.

2023 CORPORATE EMISSIONS INVENTORY – FLEET:

SERVICE AREA	ENERGY CONSUMPTION	GHG EMISSIONS
Public Works	9,429 GJ	649 tCO ₂ e
Emergency Medical Services	8,857 GJ	599 tCO ₂ e
County Staff Mileage*	2,206 GJ	146 tCO ₂ e
Library Courier	669 GJ	44 tCO ₂ e
TOTAL	21,161 GJ	1,439 tCO₂e

* Estimated based on mileage claims submitted.

RECOMMENDED STRATEGIC ACTIONS:

	STRATEGIC ACTION	ANTICIPATED RESULT
2.1	Review existing corporate fleet maintenance program for further vehicle emissions reduction.	Reduced fuel consumption and GHG emissions.
2.2	Support community consultation to investigate inter-regional public transit systems in collaboration with municipal and private partners, and build support for walking, biking and transit use planning policies.	Potential for reduced community vehicle use, fuel consumption and GHG emissions.
2.3	Prioritize virtual meetings throughout the Corporation, recognizing travel is essential to the duties performed by certain staff.	Reduced work-related travel, vehicle use, GHG emissions, mileage claims (cost savings).
2.4	Pursue feasibility studies and capital projects to support the transition to zero-emission vehicles (ZEVs), including battery-electric, plug-in hybrid electric and hydrogen fuel cell vehicles for appropriate fleet uses (eligible Green Municipal Fund project).	Reduced fuel consumption and reduced tailpipe emissions / GHG emissions.
2.5	Continue to utilize and expand the County's EV charging station infrastructure network at County-owned facilities.	Encourage EV Use. Provide Access to tourist and recreation activities for EV users.
2.6	Continue to use fleet management systems to evaluate use and inform vehicle demand reduction strategies.	Reduced vehicle use, fleet movement, fuel consumption.
2.7	Review carpooling and vehicle-sharing practices among County staff, and promote ride sharing through a corporate Ride Board on intranet.	Reduced vehicle use, fuel consumption and GHG emissions, mileage claims (cost savings).
2.8	Reinforce preventative maintenance, Anti-Idling Policy, and driver training.	Improve fuel economy, reduce fuel consumption and GHG Emissions.
2.9	Encourage staff not to drive fleet or personal vehicles with low fuel levels as this increases tailpipe emissions.	Reduce GHG Emissions.

2.10	Continue to support modes of active transportation on County Roadways, such as providing paved shoulders to support vulnerable road users along the Lambton County Regional Trail Network.	Support increased bicycle use and alternative/active transportation.
2.11	Continue to use localized weather data (through such tools as remote weather stations) to inform the maintenance of County roads and plan for long-term resiliency.	Reduced vehicle use, fuel consumption and GHG emissions.
2.12	Actively promote the County's living snow fences program (using standing rows of corn to help keep wind-blown snow off County roads) with landowners and farmers.	Reduce need for plowing and salting.



IMAGE: Past Warden Bill Weber tests one of 13 electric vehicle charge stations installed at County facilities in 2018.



3

STRATEGIC DIRECTION: Innovative Waste Management

3. INNOVATIVE WASTE MANAGEMENT

Reducing unnecessary emissions and generation of methane, while lowering waste management costs

RELEVANT FINDINGS OF THE CLIMATE CHANGE WORKING GROUP / EMISSIONS INVENTORY:

- The County engages solid waste disposal services at County facilities. Data was gathered from Marshall Gowland Manor, Lambton Meadowview Villa, Wyoming Administration, Sarnia Library, Library Headquarters, North Lambton Lodge, Petrolia Depot, Forest Depot, Oil City Depot, and the seven County Housing locations.
- In 2023, these 16 County facilities had a combined total of 2,931 bin lifts / collections, representing an estimated 911,667 kilograms of solid waste collected. In total, the solid waste disposed of at County properties is equivalent to 820 tonnes of CO₂e (carbon dioxide equivalent).
- Data related to the Dawn Landfill was also collected, which experienced approximately 13,253,599 kilograms (or 13,254 metric tonnes) of waste deposited. In total, the solid waste accepted at landfill is estimated to be equivalent to 11,929 tonnes of CO₂e (carbon dioxide equivalent).

2023 CORPORATE EMISSIONS INVENTORY – WASTE:

SERVICE AREA	SOLID WASTE*	GHG EMISSIONS
Long Term Care	533,120 kgs (TOTAL)	480 tCO₂e
Lambton Meadowview Villa	184,044 kgs	
Marshall Gowland Manor	226,772 kgs	
North Lambton Lodge	122,304 kgs	
Housing	337,175 kgs (TOTAL)	303tCO₂e
124 Queen St, Sarnia	44,700 kgs	
125 Euphemia St, Sarnia	30,900 kgs	
150 Queen St, Sarnia	29,000 kgs	

230 Capel St, Sarnia	44,700 kgs	
674 Roger St, Sarnia	59,800 kgs	
700 Cathcart Blvd, Sarnia	14,025 kgs	
914 Confederation St, Sarnia	83,850 kgs	
57 Union St, Forest	10,400 kgs	
436 Greenfield St, Petrolia	19,800 kgs	
Public Works	16,200 kgs	14 tCO₂e
Sarnia Library	12,896 kgs	12 tCO₂e
Public Health	6,200 kgs	5 tCO₂e
Wyoming Administration	6,076 kgs	5 tCO₂e
TOTAL	911,667 kgs	820 tCO₂e

* Estimated based on collection data provided by waste collection contractors (using number of bin collections multiplied by estimated bin weight). Totals do not include waste collected at leased premises.

RECOMMENDED STRATEGIC ACTIONS:

	STRATEGIC ACTION	ANTICIPATED RESULT
3.1	Implement measures to reduce waste across the Corporation at all County facilities.	Lower waste management costs and tipping fees. Reduce unnecessary emissions and generation of methane.
3.2	Strengthen County long-term care home waste diversion programs and encourage recycling and biodegradable options, utilizing provincial producer responsibility model funding.	Diversion of landfill waste and organic waste. Lower waste management costs and tipping fees. Reduce unnecessary emissions and generation of methane.
3.3	Investigate public education program to promote waste reduction at County housing locations.	Lower waste management costs and tipping fees. Reduce unnecessary emissions and generation of methane.
3.4	Expand existing battery recycling program to all County-owned facilities.	Avoid environmental damage of improper disposal.

3.5	Consider initiating composting programs at County-owned facilities, as per the <i>Lambton County Waste Management Master Plan</i> .	Diversion of landfill waste and organic waste.
3.6	Examine landfill tipping fees at Dawn Landfill to ensure they reflect the full environmental cost of disposal as part of the planned update to the Waste Management Master Plan.	Optimize waste management costs, generate non-tax revenue to support the management of the site in perpetuity.
3.7	Avoid single-use items in all corporate operations (ie. plastics) through the development of a Single-Use Item Reduction Strategy for the Corporation.	Diverting landfill waste.
3.8	Continued coordination of Household Hazardous Waste Collection Events with Clean Harbors Canada Inc.	Diverting landfill waste and avoidance of environmental damage.
3.9	Review dormant landfill sites maintained by the County as potential naturalization projects and explore bio-covers or bio-filters for landfill gas mitigation for small or inactive landfills (eligible Green Municipal Fund project).	Opportunity for carbon sequestration and GHG emissions reduction on underutilized lands.
3.10	Investigate expanding existing electronic waste program for Corporation to County employees through a planned collection day.	Diverting landfill waste.
3.11	Advance the Municipal Modernization Fund Projects Report recommendations related to document management within the County and the digitization of work elements.	Environmental benefits from the reduced use and transportation of paper documents, as well as operating efficiencies and improved customer service.
3.12	Encourage County staff involvement in local environmental clean-up initiatives, adopt-a-road projects, etc. in collaboration with municipalities and community partners.	Diverting landfill waste and avoidance of environmental damage.
3.13	Consider the viability of waste-to-energy systems to reduce greenhouse gas emissions by generating energy from organic waste streams or landfill gas (eligible Green Municipal Fund project).	Reduce corporate GHG emissions. Recover energy from material that would otherwise end up in landfill.



4

STRATEGIC DIRECTION:

Development of Agriculture, Resources & Tourism (DART)

4. DEVELOPMENT OF AGRICULTURE, RESOURCES & TOURISM (DART)

Leverage County lands and partnerships with agriculture to naturalize areas, store carbon and support farmers in adopting greener on-farm practices to reduce emissions

RECOMMENDED STRATEGIC ACTIONS:

	STRATEGIC ACTION	ANTICIPATED RESULT
4.1	Work in collaboration with the SCRCA, ABCA, and the County of Lambton's Agricultural Advisory Committee (CLACC), to investigate an annual County grant program to support land stewardship among farmers and landowners for the consideration of County Council (emulating the <i>Huron Clean Water Project</i>). Develop programs to enhance and encourage land stewardship.	Support land stewardship projects such as erosion control, rural stormwater management and wetland creation/restoration, fragile land retirement (planting trees and shrubs), forest management plans and woodlot enhancement, wind breaks, manure storage decommissioning, wellhead protection, cover crop, living snow fences, etc.
4.2	Increase forested areas and support community reforestation efforts through The Lambton Tree Legacy Program, providing funding to municipalities, community groups and individuals for tree planting projects.	Increased tree canopy cover. Current tree canopy coverage in Lambton County is 13.44%, which is about half of the recommended level for a healthy environment.
4.3	Continue to audit County properties to identify naturalization opportunities including the expansion of green spaces and reduction of turf maintenance to support naturalized areas.	Reduced maintenance costs, opportunity for carbon sequestration.
4.4	Promote use of native plant species on County-owned properties through the development of a Species Planting List for all new plantings.	More diverse and sustainable ecosystem. Reduced costs for

		maintenance and watering (drought-tolerant).
4.5	Continued support for tree planting programs on County-owned properties.	Absorb and store carbon dioxide (acting as natural carbon sinks), provide shade to reduce summer energy use for cooling, prevent soil erosion, shield against wind and snow, etc.
4.6	Consider expansion of pollinator habitat program on County-owned properties.	Increase native biodiversity, increase pollination services, community engagement and learning opportunities.
4.7	Inclusion of Natural Assets in overall asset management strategies.	Establish a baseline to measure changes in land use over time.
4.8	Continue to review and update the County's <i>Woodlands Conservation By-law</i> to ensure best practices for protection of the natural environment.	Promote the preservation of established woodlands and biodiversity.
4.9	Increased mitigation of standing water by addressing chronic low areas, particularly in times of heavy rainfall (see <i>Standing Water Bylaw</i>), including County-owned properties.	Adaptation for increased risk of flooding and resulting public health and property concerns during periods of extreme precipitation.
4.10	Pursue land acquisition through donation or other means (leveraging the County's ability to issue income tax receipts), to encourage preservation of natural heritage.	Existing natural areas are protected, or other lands are rehabilitated to increase natural areas across Lambton County for carbon sequestration.
4.11	Continue responsible stewardship of County-owned natural heritage lands through the development and renewal of management plans.	Conservation of biodiversity and protection of wildlife habitat, watersheds, cultural heritage and recreation.
4.12	Leverage non-levy sources (such as grant opportunities, use of the Environmental Fines Reserve, Woodlands In-Lieu Reserve and Lambton Tree Legacy Reserve) to facilitate naturalization and land stewardship initiatives on County-owned lands.	Strategy is advanced and environmental initiatives are pursued without direct financial impact to County levy/ratepayer.

4.13	Review of the Lambton County Heritage Forest Management Plan to expand its scope to include protections for new lands and areas that the County is responsible for (such as the Lambton Heritage Museum’s rare oak savanna forest).	Conserve, protect and rehabilitate the Lambton County Heritage Forest as a diverse natural heritage forest.
4.14	Investigate the County’s involvement in a tree distribution program for residents as part of an annual celebration of National Tree Day (similar to the City of London program).	Increased tree canopy cover.

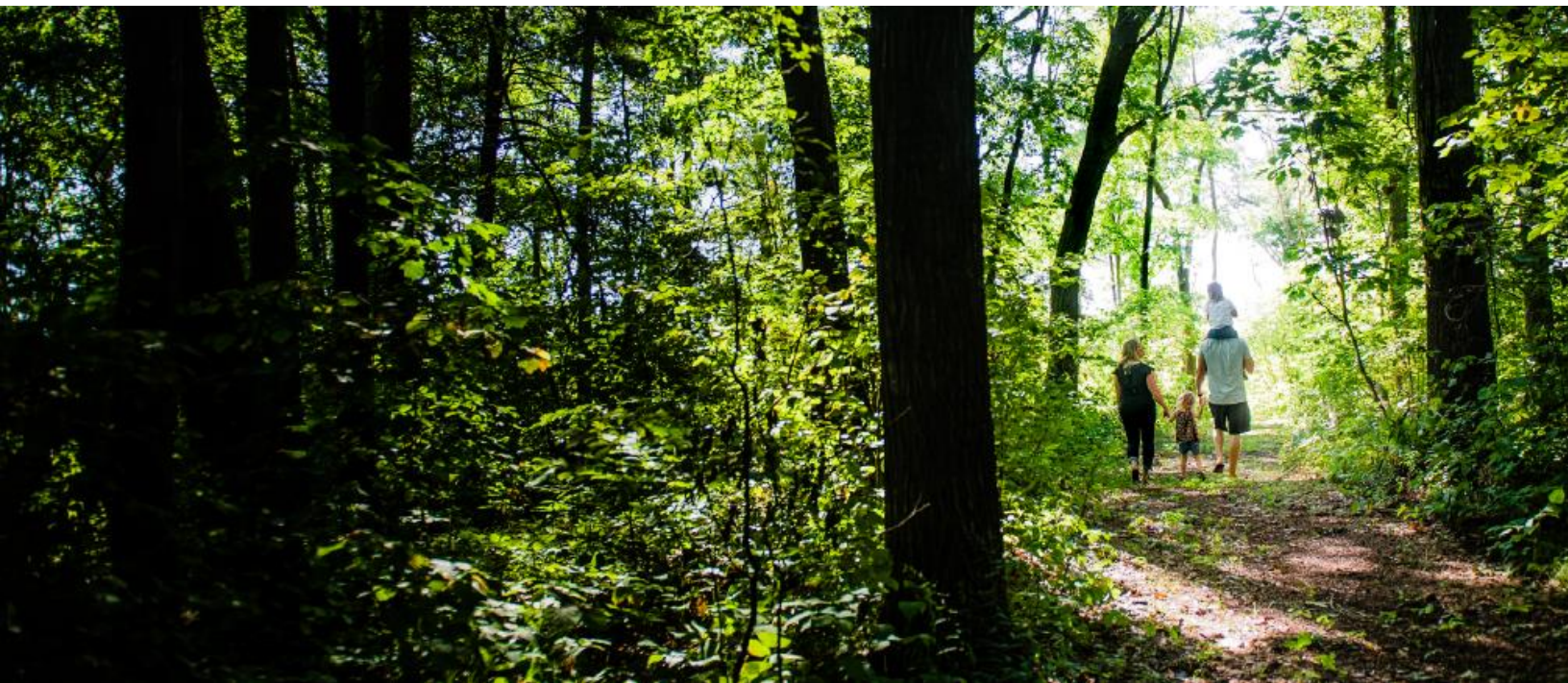


IMAGE: Woodland Heritage Trail, Lambton Heritage Museum, Grand Bend

MOVING FORWARD: IMPLEMENTING THE STRATEGY

Measuring and Reporting On Progress

The Climate Change Working Group will prepare annual reports for Council over the course of the five-year plan to ensure continuous engagement and evaluation, with annual updates on the progress of action items provided to council at the close of each budget year in anticipation of the next budget cycle.

Budget Implications

The cost implications of the plan, and financial obligations related to climate change adaptation strategies to reasonably reduce the County's environmental impact and GHG emissions in its operations will be reflected in annual draft budgets for Council's consideration. The plan's accomplishments and timelines will be subject to funding availability to complete the actions identified. The County has a proven ability to identify and successfully secure alternative sources of revenue through collaboration with partner agencies, revenues and fines, grant sources, donors and sponsorships. Staff will continue to pursue these alternative revenue sources to offset the tax impact of plan implementation.

Adapting the Strategy

The Climate Change Working Group will continue to collect and analyze the necessary data associated with all action items, and prepare annual reports based on the findings, and recommend any necessary changes to the program, based on the evaluation.

Further, the plan will be adjusted over time to align with the priorities identified by local partners, such as the St. Clair Region Conservation Authority and the Ausable Bayfield Conservation Authority, as well as the Partners for Climate Protection, Ontario Ministry of the Environment, Conservation and Parks, Environment and Climate Change Canada, with any adjustments communicated to County Council.

DEFINITIONS / ACRONYMS:

Ausable Bayfield Conservation Authority (ABCA) – The Ausable Bayfield Conservation Authority includes the drainage basins of the Ausable River, Bayfield River, Parkhill Creek, Mud Creek and the gullies between Tower Line in Central Huron and Grand Bend draining directly to Lake Huron. It has a mandate to ensure the conservation, restoration and responsible management of the region's water, land and natural habitats through programs that balance human, environmental and economic needs. Its 12 member municipalities include the Municipality of Lambton Shores and the Township of Warwick.

Carbon Dioxide Equivalent (tCO₂e) – How GHG emissions are expressed. It is a universal unit of measure that combines the quantity and global warming potential of each greenhouse gas. Expressed in metric tons of carbon dioxide equivalent.

Energy Use Intensity (EUI) – The total energy consumption divided by total gross floor area (GJ/Sq. m). EUI enables you to compare similar buildings of different sizes.

Gigajoules (GJ) – One gigajoule is equivalent to one billion joules of energy. Gigajoules is a standard conversion to determine total energy consumption between natural gas, electricity, and propane.

Greenhouse Gas (GHG) Emissions – The carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) gases released into the atmosphere because of energy consumption at the property.

Partners for Climate Protection (PCP) – The Partners for Climate Protection (PCP) program is a national network of over 500 municipalities with the shared goal of taking action against climate change and reducing local greenhouse gas emissions. PCP is managed and delivered by FCM and ICLEI—Local Governments for Sustainability Canada (ICLEI Canada) and receives financial support from the Government of Canada and ICLEI Canada.

St. Clair Region Conservation Authority (SCRCA) – The St. Clair Region Conservation Authority includes the Sydenham River watershed and smaller watersheds draining directly into southern Lake Huron, the St. Clair River, and northeastern Lake St. Clair. The Conservation Authority implements programs to reduce the risk to life and property from flooding and erosion; water and land stewardship; forestry; wildlife habitat creation and outdoor recreation.

