

Memorandum

Date: June 6, 2023

To: Members of Council

From: Alexandra Service, Team Lead, Energy and Environment Division

Subject: Resilient Caledon Community Climate Change Action Plan – Annual Update

The purpose of this Memorandum is to provide a progress update on the Resilient Caledon Community Climate Change Action Plan ('Resilient Caledon Plan'), adopted in April 2021. Going forward, updates will be provided annually.

BACKGROUND

According to the International Panel on Climate Change, Greenhouse Gas (GHG) emissions need to be significantly reduced to ensure warming is kept to no more than 1.5C above pre-industrial times and the worst impacts avoided. In addition to managing local climate impacts, municipalities have direct or indirect control over more than half of Canada's greenhouse gas emissions, through decisions around land use planning, transportation, infrastructure, and municipal operations.

In January 2020, Council declared a climate change emergency. As part of the declaration, Council set a target to reach net zero greenhouse gas (GHG) emissions by 2050 and improve community resiliency to climate impacts. In response, staff developed the Resilient Caledon Plan, which outlines actions to both mitigate (reduce our GHG emissions) and adapt (prepare for impacts like flooding, extreme heat, and storms) to climate change across the community and in the Town's corporate operations.

Resilient Caledon Plan

Following the climate emergency declaration, staff developed a comprehensive process to understand the action required to meet Caledon's climate change targets on both mitigation and adaptation. This included:

- Determining Caledon's baseline emissions and modeling pathways to meet the targets of net zero by 2050 and 36% reduction below 2016 levels by 2030, to determine the scale of action required;
- Determining how global climate change will affect local weather patterns in Caledon, how those changes will impact Caledon's residents, environment, and infrastructure, and develop actions to better prepare for impacts;
- The plan was informed by a Task Force made of residents and stakeholders, stakeholder consultation, and a number of community events.

The final Resilient Caledon Plan included more than 60 actions in the theme areas of Smart Growth, Sustainable Communities, Agriculture and Natural Systems, Low Carbon Transportation and Resilient Infrastructure and Energy.

The Plan captures the full scale of action needed across all sectors to reach the Caledon's climate targets, not just by the Town but by residents, businesses, and other levels of government. Implementation is a collaborative effort across all Town departments and external organizations, including an internal

corporate working group, a community climate collaborative and strategic partnerships with Conservation Authorities, First Nations, Region of Peel, and other levels of government.

KEY ACCOMPLISHMENTS

Since the Resilient Caledon Plan was adopted in 2021, there have been a number of significant accomplishments. Some of these include:

Action	Result
Smart Growth	
Completed Climate Change and Land Use Planning Discussion paper	<ul style="list-style-type: none"> Developed concrete recommendations to embed in the Official Plan update to ensure new communities are low carbon and resilient to climate impacts
Sustainable Communities	
Launched new Climate Action Fund	<ul style="list-style-type: none"> Raised funding cap from \$5,000 to \$8,000 to enable community groups and schools to carry out impactful local projects like pollinator gardens, stream restoration, and community education
Established Energy and Carbon Reduction grant in new Bolton CIP	<ul style="list-style-type: none"> Help local businesses improve sustainability and save energy through education and funding, by awarding up to \$40,000 (50% of total) for the most significant energy reducing projects
Delivered community projects and education	<ul style="list-style-type: none"> Public engagement events including community tree planting and Electrify Caledon Revitalization of four parks in Bolton – Adam Wallace, Ted Houston, Foundry, and North Hill, leveraging more than \$250,000 in grant funding
Agriculture and Natural Systems	
Green Infrastructure projects	<ul style="list-style-type: none"> Installed rain garden at Adam Wallace Park to help with drainage and erosion issues Naturalized Jaffary’s Creek stormwater pond to improve filtration and enhance habitat
Low Carbon Mobility	
Green Fleet Strategy adopted (September 2021)	<ul style="list-style-type: none"> Added 6 light duty electric vehicles to corporate fleet, bringing the total of electric and hybrid vehicles to 15, or about 15% of the total light duty fleet Using biodiesel in heavy duty vehicles
Installed 9 new public EV charging stations with 13 connectors	<ul style="list-style-type: none"> Better access to free and low-cost charging for residents with a total of 20 chargers with 31 connectors across Caledon installed by the Town

Resilient Infrastructure and Energy	
Corporate Green Building Standard adopted (January 2022)	Stringent new energy and emissions standards applied to renovations at: <ul style="list-style-type: none"> • Humber River Centre – leveraged over \$4 million in grant funding to achieve 80% reduction in operating emissions • Caledon East Community Complex – using waste heat recovery from the skating rinks’ ice plant to heat the swimming pool and reduce the library heating load
Implemented 7 retrofit projects in corporate facilities	<ul style="list-style-type: none"> • Resulted in estimated annual savings of \$63,200 or 475,334 kWh equivalent

A full progress update on actions in the Resilient Caledon Plan can be found in Schedule A.

Work in Progress

Community-wide Action

The Resilient Caledon Plan modelled GHG emissions to 2050 and found that if no new action was taken, emissions would more than double due to significant growth expected in Caledon. The latest community GHG emissions inventory shows that most of Caledon’s emissions are produced by transportation followed by buildings. In order to meet Caledon’s targets, efforts need to be made to de-couple emissions from growth – this generally means homes and buildings that are energy efficient and use low carbon fuels and promoting active and sustainable modes of transportation like walking, cycling, public transit, and electric vehicles. From a climate adaptation perspective, it means protecting the natural environment, planting trees to reduce heat, and using green infrastructure to manage stormwater.

Caledon’s growth presents both a challenge and an opportunity to plan new communities in a different way that places climate and the environment at the forefront. For these reasons, the initial implementation of the Plan has focused on three priority projects that will have the biggest long-term impact:

- **Green Development Standards (GDS)** – to help drive sustainable development by setting clear targets for building energy and emissions, electric vehicle charging, walkable community design, tree canopy, green infrastructure, and many other metrics. They will be a key implementation tool for the updated Official Plan. The GDS is implemented through the development review process and will apply to all new residential, commercial, and industrial development in Caledon.
 - Status: Draft GDS will be released for public comment in Spring/Summer, with the final draft going to Council later this Fall
- **Climate Studies for Secondary Plans** – all new secondary plans will require energy and emissions and climate adaptation studies to guide climate-friendly land use, including the feasibility of using alternative and renewable energy sources, community design that supports active transportation and transit, and strategies to enhance climate resilience.
 - Status: Staff have drafted initial Terms of Reference to inform current Official Plan Amendment applications and will be conducting comprehensive studies for the Bolton growth area starting this Fall.

- **Municipal Home Retrofit Program** – the Town is working with the Cities of Mississauga and Brampton to develop a region-wide home energy retrofit program to help residents save energy and reduce their emissions. The program will include one-window access to energy experts, advice, and education to help homeowners through the retrofit process and connect them with grants and financing opportunities.
 - Status: Draft program design this summer, with final draft going to Council late Fall/early winter.
- **Air Quality Monitoring Study** – the Town is working with the Provincial government on a study to understand the impacts of traffic on local air quality
 - Status: Stations will be implemented through summer and fall 2023, with data analysis and results expected in mid-2024

Demonstrating Leadership

The Town's own facilities and operations are a small but important part of overall community GHG emissions in Caledon. It is critical for the Town to take strong action to reduce its emissions as it is an area over which we have direct control; to demonstrate leadership across the community; and to realize long-term energy and cost savings.

The Town's corporate energy program aims to reduce energy and emissions from Town buildings and vehicle fleet, conserve water, and reduce waste. Trends from 2017 (baseline year) to 2019 (year for which we have most recent data) include:

- 4.6% decrease in electricity consumption
- 3.4% reduction in natural gas usage and 40.6% reduction in propane
- 8.1% reduction in building energy use intensity (i.e., used less energy per building area)
- 2.7% decrease in total natural gas, propane, and electricity expenditure, despite annual rate increases
- 3.9% increase in GHG emissions, largely due to the growth in our vehicle fleet and colder winter conditions necessitating higher natural gas usage

Buildings make up the largest share (52.3%) of total corporate GHG emissions and have been the main focal point of the Town's energy management program. Every year through an interdepartmental working group, retrofit projects are identified to help save energy and emissions in Town buildings, generally funded through the Corporate Energy Revolving Fund and grants from energy utilities. Since 2019, these retrofit projects have:

- Reduced annual electricity usage by an estimated 400,925.45 kWh and annual natural gas usage by an estimated 7,053.00 m³
- Secured \$78,435.94 in incentives from energy utilities
- Reduced GHG emissions from Town buildings by an estimated 24.77 tonnes of CO₂ equivalent.

The Town's vehicle fleet makes up the second largest share of the Town's GHG emissions at 43%. In 2021, Council adopted a Green Fleet Strategy to help the Town transition to a low carbon fleet, with actions focused on switching to electric vehicles, using biodiesel in heavy duty trucks, and piloting new technologies. There have been challenges in implementing this strategy, including limited availability and higher upfront costs of electric vehicles, installing adequate charging infrastructure for fleet needs, and ensuring alternative fuel vehicles meet current and future work needs.

Key projects taking place this year include:

- **Building GHG Emissions Reduction Pathway Studies into Building Condition Assessments:** This project will focus on conducting building condition assessments (BCAs) and creating GHG emission reduction pathways in 78 Town-owned facilities and structures. The goal is to determine the condition of the building elements in Town-owned facilities and structures and identify low carbon building renewal opportunities in line with the Town's climate change targets.
 - Status: procurement will be launched in June, with the study results expected by Q4 2024
- **HVAC Replacement at Caledon Centre for Recreation and Wellness (CCRW):** The existing gas heating and cooling units at CCRW will be replaced with air-to-air heat pumps. This will be the first time a Town facility has replaced natural gas equipment with efficient and clean heat pumps, rather than going with a like-for-like replacement. This project will result in an estimated annual savings of \$15,582, and 407 tCO₂ equivalent emissions.
 - Status: the first phase installation will be completed in November 2023 and the second phase in October 2024.
- **CNG Pilot:** A pilot study of the use of compressed natural gas (CNG) fueled snowplow truck is currently being explored. Based on the use of one of the Town's snowplow trucks in the 2021/2022 winter, a switch from diesel-fueled snowplow to CNG-fueled snowplow would result in an estimated annual savings of \$14,987.
 - Status: currently in research phase, pilot will launch pending availability of trucks and installation of appropriate infrastructure.

NEXT STEPS

Staff are developing an updated community emissions inventory for 2019 and will report annually on emissions levels as part of the Resilient Caledon update report going forward. Staff will also work to strengthen implementation of climate action through the development of a climate lens tool for staff to be able to assess and communicate the impacts of their projects.

ATTACHMENTS

Schedule A – Resilient Caledon Plan Progress Update