

Staff Report 2021-0121

Meeting Date: April 20, 2021

Subject: Resilient Caledon Community Climate Change Action Plan Update

Submitted By: Cristina Guido, Acting Specialist, Climate Change, Energy & Environment

RECOMMENDATION

That the Resilient Caledon Community Climate Change Action Plan attached as Schedule A to Staff Report 2021-0121, be adopted;

That based on carbon budget principles, which account for all greenhouse gas (GHG) emissions released between now and 2050, an interim GHG emissions reduction target of 36% below 2016 levels by 2030, be approved;

That the climate actions outlined in the Plan be integrated into the 10-year capital plan and future annual budgets for consideration; and

That staff be directed to develop a Terms of Reference to establish a new Task Force that will guide the implementation of the Resilient Caledon Plan.

REPORT HIGHLIGHTS

- The Town updated its 2011 Community Climate Change Action Plan (CCCAP) between the spring of 2019 to the winter of 2020.
- Council Resolution 2020-10 (January 28, 2020) declared a climate change emergency in Caledon and directed staff to report back on the scale of actions required by the Town and broader community to align with the international target to limit global warming to 1.5°C.
- Council Resolution 2020-117 (June 30, 2020) adopted a community-wide greenhouse gas (GHG) emissions reduction target of net zero by 2050 and directed staff to develop an interim target for 2030 as part of the CCCAP update.
- The CCCAP update, (Resilient Caledon, Schedule A), outlines actions and implementation strategies for both the Town and community to reduce GHG emissions and adapt to a changing climate.
- Implementing the Resilient Caledon Plan will require investments from the community and Town. Preliminary estimates of Town costs over the next 10 years are in range of \$24 - \$31 million and avoided costs of \$5.7 million as outlined in Schedule C which excludes any potential grants/rebates. Staff will refine these costs through studies with the goal to inform the Town's 10-year capital forecasting exercise. Specific project costs will be brought forward for Council approval through the annual budget process.
- Staff propose establishing a Resilient Caledon Task Force to support community-wide implementation.

DISCUSSION

Caledon's Actions to Date

The 2011 Caledon Community Climate Change Action Plan (CCCAP) contained forty (40) actions to reduce community GHG emissions under ten (10) priority areas. The CCCAP contained a GHG reduction target of 17% below 2006 emissions levels by 2021. It is estimated that Caledon has realized a reduction of 8% in emissions from 2006 levels by 2016, however this is largely due to the phase out of coal-fired electricity generation in Ontario. Staff are unable to provide 2021 emissions data at this time due to a two-year data lag, but staff will provide emissions data to Council more regularly moving forward.

Highlights of the Town's community climate change accomplishments include:

- Leveraging more than \$430,000 in grant funding to install electric vehicle (EV) charging stations (22 are now available in Caledon), develop residential energy use maps, and create and implement a Sustainable Neighbourhood Retrofit Action Plan (SNAP) in West Bolton;
- Awarding more than 100 Community and School Green Fund grants totaling \$255,874;
- Distribution of approximately 185,912 saplings and bundled seedlings to private landowners through the Town's Tree Seedling Program;
- Establishment of a Sustainable Residential Home Strategy for the Mayfield West Phase 2 development area, resulting in developers agreeing to construct energy and water efficient homes;
- Implementation of a Green Development Program providing development charge discounts to commercial and industrial developers that receive LEED certification and/or incorporate green technologies;
- Establishment of an Idling Bylaw to prohibit idling for more than two minutes;
- Completion of all five milestones of the Federation of Canadian Municipalities' (FCM) Partners for Climate Protection (PCP) program;
- Joining the Global Covenant of Mayors for Climate and Energy in 2017; and
- Development of the GreenBiz Caledon program with participation from eleven (11) Caledon businesses that participated in four (4) workshops learning how to reduce the carbon footprint from their business operations.

Resilient Caledon Plan Development

The following research and engagement contributed to the final Resilient Caledon Plan:

- **Resilient Caledon Task Force (Staff Report 2019-06):** The Task Force was comprised of Town staff (stormwater, engineering, transportation), conservation authorities and community members (business, agriculture, youth) and provided oversight and direction on key stages of the Plan development.

- **Risk and Vulnerability Assessment (RVA), (Memorandum provided on December 11th):** The RVA modelled future climate in Caledon to the end of the century, revealing that Caledon's weather will be warmer, with an increase in precipitation in all seasons except summer and more frequent intense storms. Staff engaged with stakeholders to determine potential risks and develop actions to improve the adaptive capacity of community assets, infrastructure and natural systems based on the climate projections.
- **GHG Emissions Modelling (Staff Report 2020-075):** The Town's GHG emissions inventory was updated for 2016. GHG emissions were then forecasted to 2050 under a business-as-planned (BAP) scenario, that accounted for projected population growth and other Regional, Provincial and Federal climate related policies and programs. The BAP revealed a 119% projected growth in GHG emissions, if nothing is done to mitigate them. A low carbon pathway scenario was also created, which outlined the level of ambition required to achieve net zero emissions by 2050 (Figure 1). Actions were developed in consultation with stakeholders identifying programs, projects and initiatives to achieve net zero emissions by 2050.
- **Stakeholder Engagement:** A comprehensive stakeholder engagement strategy was undertaken throughout the Resilient Caledon Plan development, to ensure widespread participation and buy in. This strategy included workshops with Town and Regional staff, Conservation Authorities and specialized experts (i.e. developers, renewable energy and utilities), and public surveys and 'do it yourself workshops' to involve members of the broader community in the plan development. Staff also circulated the draft Resilient Climate Plan for public comment and received 27 submissions from residents and partner agencies.

GHG Emissions Reduction Targets

Through Staff Report 2020-075, Council endorsed a net zero by 2050 GHG emissions reduction target. Figure 1 illustrates the possible pathways for GHG emissions in Caledon, following business-as-planned and low carbon scenarios. Council Resolution 2020-117 directed staff to establish a 2030 emissions reduction target, to ensure the Town remains on a responsible pathway to reach net zero GHG emissions by 2050. Following carbon budget principles, which accounts for all emissions released between now and 2050, staff recommend an interim target of a 36% reduction below 2016 GHG levels by 2030. Like a financial budget, a carbon budget is a designated amount of emissions that can be released each year until they are used up. This target accounts for Caledon's responsible 'proportion' of global emissions.

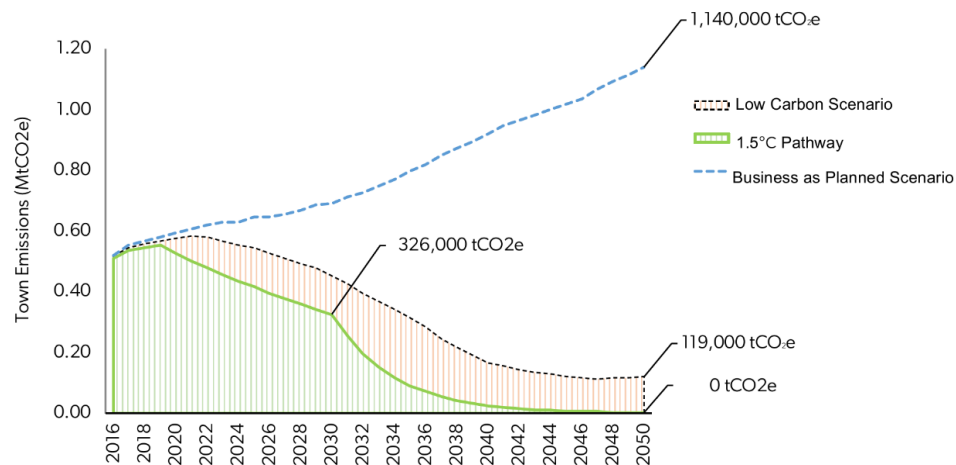


Figure 1: Caledon's GHG emissions under a Business-as-Planned Scenario (blue) relative to the Low Carbon Scenario (red) and emissions reduction target of net zero by 2050 (green)

Resilient Caledon Plan Actions

The Resilient Caledon Plan outlines the actions required to achieve the interim and 2050 targets. The Plan contains more than sixty (60) actions which are organized into five (5) categories. For the full list of actions, see Chapter 5 in Schedule A.

Table 1: Summary of Key Town Actions in the Resilient Caledon Plan

Category	Vision for the Community	Modelled GHG Targets	Supporting Town Actions
Smart Growth	Caledon's new communities are low carbon, resilient to climate impacts and prioritize energy efficiency, walkability, effective stormwater management, and green space.	- 100% of new buildings are net zero by 2030	<ul style="list-style-type: none"> Embed climate change into the Official Plan update Adopt a community-wide Green Development Standard Protect flood vulnerable communities from flood risks
Sustainable Communities	Caledon residents are prepared for climate impacts and have the capacity to reduce emissions and build resilience in their own homes, businesses and neighbourhoods.	<ul style="list-style-type: none"> - 100% of existing buildings are retrofit for increased efficiency by 2040 - 80% of waste diverted by 2050 	<ul style="list-style-type: none"> Develop a home retrofit program for residents to support energy and resiliency retrofits Renew the Green Fund Program and expand GreenBiz Caledon to build community capacity Work with Peel Region to reduce waste generation and increase waste

Category	Vision for the Community	Modelled GHG Targets	Supporting Town Actions
			diversion in the community
Agriculture and Natural Systems	Caledon's natural and agricultural systems are protected and enhanced to maximize carbon sequestration and resilience to climate impacts like flooding, invasive species and pests.	- 1000 kW of on-farm biogas systems installed by 2030	<ul style="list-style-type: none"> • Develop a local food and agriculture strategy to support soil health and help farmers adapt to a changing climate • Conduct a feasibility study on local options for on-farm renewable energy systems • Support invasive species management
Low Carbon Transportation	Caledon residents and businesses use low or zero-carbon options for transportation. Cycling, walking and transit is more accessible through the expansion of safe and efficient infrastructure.	- 100% of vehicles are zero emissions by 2050	<ul style="list-style-type: none"> • Enhance active transportation and transit infrastructure in existing and planned urban areas • Expand electric vehicle charging infrastructure • Develop a strategy to green the Town's fleet vehicles
Resilient Infrastructure and Energy	Caledon's energy infrastructure is diversified, low carbon and resilient. Core infrastructure assets are better able to withstand major weather events like storms, flooding and freeze-thaw cycles.	<ul style="list-style-type: none"> - 100 MW ground-mount solar PV installed by 2030 - All viable rooftops have solar PV installed by 2040 	<ul style="list-style-type: none"> • Develop a renewable energy strategy to expand renewables in Town facilities and the broader community • Invest in climate-resilient and green infrastructure for roads, bridges and stormwater • Embed climate change into the Town's Asset Management Plan • Develop a pathway to net zero Town facilities

Financial Impact of the Resilient Caledon Plan

As part of the low carbon modelling exercise for the Resilient Caledon Plan, a financial analysis was undertaken representing the incremental costs associated with implementing the low carbon scenario (model assumptions are available in Schedule B to Staff Report 2021-0121). The analysis shows a significant financial impact for the community. The net present value of investments required by the local community (i.e. residents, businesses)

and the Town over the next 30 years is \$2.8 billion, in the form of investments in electric vehicles, deep energy retrofits and renewable energy projects. However, the net present value of the savings associated with these investments to the community and Town is estimated to be \$4.9 billion. These investments are realized in the form of energy cost savings, revenue from local energy generation projects and avoided costs from incremental climate impacts.

Additional Benefits of Climate Action

By taking a holistic and integrated approach to fighting climate change as outlined in the Resilient Caledon Plan, there are several indirect benefits as a result, including:

- **Economic Prosperity** – the modelling work completed to inform the Plan estimates that the BAP scenario could result in community energy expenditures of \$905 million. Compared to the low carbon scenario, there could be a 55% decrease in energy costs, to \$403 million by 2050. In addition, implementing actions in the Plan could bring an estimated 38,000 jobs (the consultant estimates number of jobs through hours of full-time employment) by 2050 to the community in the form of construction, building retrofits and renewable energy projects.
- **Avoided Costs of Climate Change** – investing in climate adaptation measures can help municipalities avoid some of the most significant costs of extreme weather, including from infrastructure damage and liability. In addition, these investments could help the community avoid costs associated with the Federal carbon tax.
- **Affordability** – expanding and diversifying housing supply can not only improve the energy efficiency of our building stock but also provide more affordable options for residents, for example for seniors and young people.
- **Public Health** – reducing traffic congestion and transportation-related emissions can significantly improve air quality, and more active transportation options can increase human health through physical activity.
- **Habitat and Biodiversity** – protecting and restoring natural systems has numerous benefits for carbon sequestration and climate adaptation (i.e. reduced flood risk) but will also help expand wildlife habitat, particularly for at-risk species.

Resilient Caledon Plan Implementation

The Resilient Caledon Plan is accompanied by a detailed 10-year implementation framework (see the Appendix in Schedule A). Implementation will require collaboration across Departments and with the community on both Corporate and Community climate actions.

Community Implementation Approach

GHG emissions associated with Town operations is a small fraction of the community emissions portfolio. Therefore, the rate of community investments, in the form of building retrofits, renewable energy, zero emission vehicle adoption and waste reduction are significant, in order for the Town to achieve its target of net zero emissions by 2050. To support this, the Town will need to activate community participation through policy, programs and strategic partnerships to leverage private sector investment. To help guide and support community-wide implementation, staff are proposing to convene a new Task Force, comprised of residents, sector representatives (i.e. business, industry, developers) and Council members. Terms of reference for the Task Force will be brought forward for Council Approval in 2021.

Town Implementation Approach

To ensure the actions in the Resilient Caledon Plan are embedded across Town Departments, staff will be applying a climate lens to decision making. To facilitate corporate alignment, staff will be initiating a biannual cross-departmental working group, to discuss collaboration opportunities, priorities and budget implications. Staff have also applied a climate lens to major strategic plans including:

- **Official Plan Update:** Energy and Environment staff collaborated with Policy Planning to develop a climate change land use discussion paper to inform the Official Plan Update. This paper contains recommendations, aligned with the Resilient Caledon Plan, for land use and zoning policies, building energy, stormwater management, and green space.
- **Asset Management Plan:** Staff are collaborating to identify opportunities to embed climate risk to critical infrastructure, and determine appropriate levels of service, upgrade and maintenance schedules under climate change conditions.
- **Economic Development Strategy:** Staff will include climate change considerations to understand potential economic risks, and actions to support local businesses to save energy and reduce their carbon footprint.

Energy and Environment staff will continue working with relevant Town divisions to embed a climate lens into upcoming plans strategies, annual budget and the 10-year budget forecast. An outline of additional existing opportunities and immediate actions include:

- **Corporate Green Building Standard (2021):** Update the Town's existing Corporate Green Building Standard, to align with the GHG emissions reduction targets from the Resilient Caledon Plan.
- **Green Fleet Strategy (2021):** Development of a strategy to reduce GHG emissions associated with the Town's fleet and outline the business case and prioritize replacement of fleet to lower carbon alternatives.

- **Updated Stormwater Masterplan (2022):** Update the Town's Stormwater Master Plan to inform how we manage our existing stormwater infrastructure and guide how we continue to manage stormwater into the future. This work will incorporate changes in legislation, technological advances, and future design requirements to manage stormwater through a treatment train approach. This work will position the Town to better adapt to climate change.
- **Decorative Streetlight Program (2022):** Retrofit the Town's remaining decorative streetlights to LED with adaptive control technology to realize significant energy cost savings and improve asset management.
- **Green Development Standard (2021-2022):** In partnership with Planning, develop a tool for evaluating new development with a climate lens, to encourage sustainable community design and alignment with the Resilient Caledon Plan.
- **Green Fund Program Update (2021-2022):** Update the Town's Green Fund program to align with the Resilient Caledon Plan update.
- **Home Retrofit Program (2021-2023):** Conduct background research of a home retrofit program to determine the administrative process and delivery model. The Town has submitted a joint grant funding application to the Federation of Canadian Municipalities with the Cities of Mississauga and Brampton to design the program.
- **Town Building Retrofits (ongoing):** Energy and Environment will continue to work with Facility staff through the Corporate Energy Team to apply a climate lens to annual building energy retrofits.
- **Electric Vehicle (EV) Charging Stations (ongoing):** Energy and Environment will continue to work with Corporate Facility's to leverage grant funding to install EV charging stations at Town buildings.
- **Transportation Initiatives (ongoing):** Planned transit routes through the Town's Transit Feasibility Study and Transportation Master Plan; recent announcement of the Humber Station Road and King Street future GO rail site; embedding a climate lens to the Multi Modal Transportation Master Plan Update; and ongoing installation of bike friendly routes.

Monitoring and Reporting

To track implementation of the Resilient Caledon Plan, staff will report annually to Council and the public on progress towards key indicators and the evolving climate risks. The Plan will be reviewed after five (5) years to provide an opportunity for updates or edits to the actions and will undergo a comprehensive update after ten (10) years.

Next Steps

Upon Council approval of the Resilient Caledon Plan, staff will upload the final document on the website for public access and circulate to all stakeholders who contributed to the Plan development. Staff will also provide printed copies at Town Hall, to allow for members of the public to access hard copies of the Plan, if requested.

FINANCIAL IMPLICATIONS

There are no immediate financial implications from the Resilient Caledon Plan for 2021. Staff compiled preliminary 10-year cost estimates for the Corporation's investment in community and corporate climate change actions between \$23,951,280 - \$31,189,636 and avoided costs of \$5,721,876, outlined in Schedule C. Note that this is an estimate of incremental municipal investments to provide a general sense of what level of effort may be required over the 10-year forecast horizon (2022-2031). These costs are not inclusive of all of the actions in the Plan and have not been discounted for potential grant or alternative financing mechanisms. Staff will endeavor to recover costs associated with growth through the Town Development Charges Background Study.

Moving forward, individual projects will be assessed with regards to cost, feasibility, delivery model, and return on investment, and further refined before being submitted for approval as part of the Town's annual budget process. Staff will continue to pursue funding and grant opportunities as well as investigate unique financing approaches to support implementation of the Resilient Caledon Plan.

COUNCIL WORK PLAN

Sustainable Growth: Continue the implementation of the Transportation Master Plan including transit, infrastructure, cycling, traffic management, traffic calming, livable and walkable communities

Connected Communities: Preserve heritage and natural areas; Develop a five-year Corporate Greenhouse Gas Reduction Framework including energy consumption; facilities; corporate fleet and fuel use, water conservation strategies in facilities and parks.

Improved Service Delivery: Build and maintain parks and greenspace; plan for improved stormwater management; improve roads and long-term planning that maintain road standards.

ATTACHMENTS

Schedule A: Proposed Resilient Caledon Community Climate Change Action Plan

Schedule B: Resilient Caledon Technical Report

Schedule C: Resilient Caledon Plan 10-year Corporate Capital Incremental Cost Estimates (2022-2031)