TOWN OF CALEDON OFFICIAL PLAN REVIEW

Land Use Planning and Climate Change Policy Discussion Paper

NOVEMBER 2021

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1.0 Introduction

The science is clear, humans have caused climate change through the burning of fossil fuels, land use planning decisions and consumption patterns. In January 2020, Town Council unanimously passed a motion declaring a climate emergency, directing staff to report back on the scale of action required to align with a 1.5C warming scenario.[1] As a result, Council adopted a community-wide GHG reduction target of net zero emissions by 2050. To align with this target, the Town developed Resilient Caledon, a plan containing over 60 actions to support the Town and broader community to transition to net zero emissions. Essential to this Plan, is the ability for the Town to embed climate change to the core of its land use planning decisions, as plans to accommodate significant growth are formalized.

Contributing to 70% of global greenhouse gas emissions,[2] municipalities play a key role in the pathway to a low or zero carbon future through the influence of land use planning decisions that impact the built environment. These decisions dictate energy use and emissions, that are "locked in" ranging from decades to centuries, highlighting the significance of the need to approach land-use planning with a climate change lens. Key elements to climate friendly versus traditional planned communities are outlined in Table 1 below:

Table 1: Climate friendly versus traditional planned communities

Traditional Community Planning	Planning with a Climate Lens
• Sprawled neighbourhoods • Shops and stores decentralized • Little active transit or sidewalk infrastructure, car centric • Longer road, water and energy infrastructure • Traditional, greenhouse gas intensive energy systems (i.e. natural gas)	• Compact neighbourhoods with shops, stores and services within close proximity (15 minute neighbourhood) • Active transportation centric • Higher densities to support transit feasibility • More efficient delivery of public services within close proximity (i.e. fire, school transportation, water etc.) • Low carbon energy sources, such as district energy more feasible

[1] Town of Caledon. Caledon declares a climate emergency. https://www.caledon.ca/en/news/index.aspx?FeedId=0127b33c-5724-41f6-a710-50fe8f39b605&newsId=23ad861d-cf7b-4fe7-b2f6-dc3253e99477

[2] C40: Why Cities? Cities Have the Opportunity to Lead.

In addition to supporting low-carbon forms of development, land use planning can enhance a community's resilience to the impacts of climate change with neighbourhood design considerations that result in:

- stormwater runoff directed to ponds and trenches that naturally store and capture water, which reduces the risks of flooding and damage to stormsewer systems;
- inclusion of green infrastructure and new technologies that are above and beyond traditional stormwater management methods;
- new development is situated well away from floodplains, where they may be at greater risk of damage from floods; and
- trees are planted strategically (e.g in clusters) throughout neighbourhoods so that shading cools streets and buildings during extreme heat events.

1.1 PURPOSE OF THIS PAPER

The purpose of this paper is to identify policy best practices and opportunities for Caledon to incorporate climate change considerations into the core of its Official Plan (OP). In addition to this, it identifies policies to ensure conformity with Provincial and Regional planning directions on climate change.
To achieve this purpose, the paper will present the following:

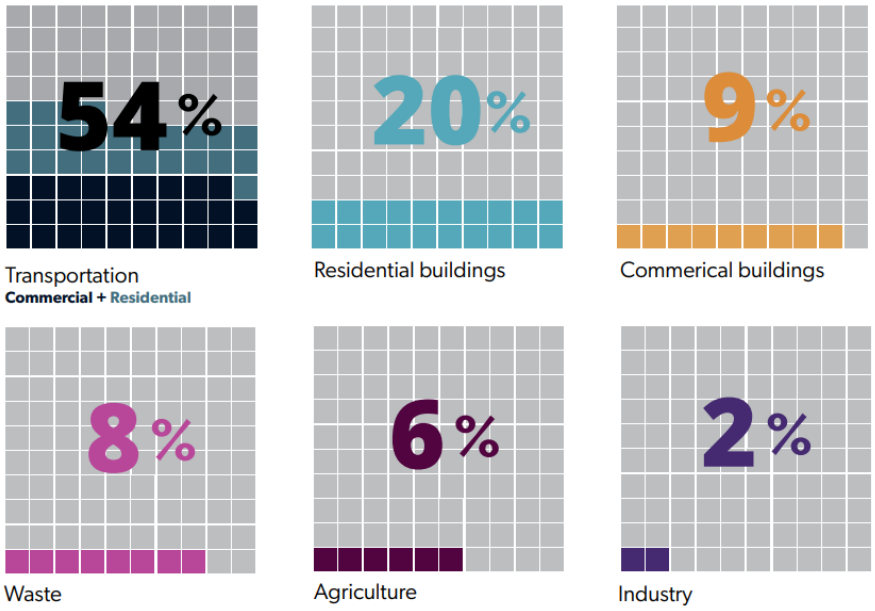
- A review of the Town's 2016 baseline emissions inventory and forecasts (Section 2);
- An overview of the climate projections and potential risks and vulnerabilities resulting from climate change (Section 2);
- A review of International, Federal, Provincial, Regional, and local direction for OP climate change policy (Section 3); and,
- Presentation of policy options and recommendations to strengthen alignment with the Town's broader climate change objectives (Section 4).

2.0 Caledon's GHG Emissions and Climate Forecast

This section provides an overview of the Town's community baseline greenhouse gas (GHG) emissions, climate conditions forecast and projections, and summarizes the results of the Town's climate change risk and vulnerability assessment.

Outlined in Figure 1 below, is a breakdown of the 2016 baseline GHG emissions within the Town. The largest source of emissions is related to transportation, including emissions related to commuting out of Town for work, and commercial vehicles and trucks. The second largest source of emissions is residential buildings, followed by commercial buildings, primarily due to the use of natural gas for space and water heating. The remainder of emissions are from agriculture, waste, industry.[3]

Figure 1: Caledon's community 2016 baseline GHG emissions inventory

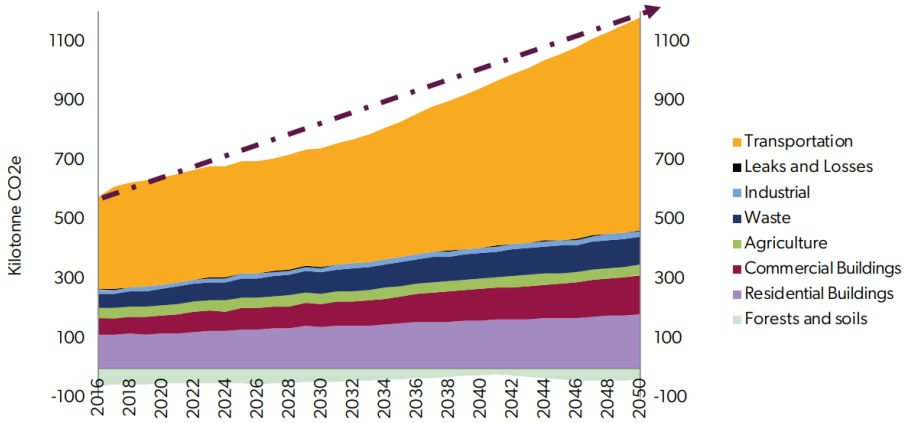


Based on the model developed for the Resilient Caledon Plan, GHG emissions are forecasted to increase 119%, between 2016-2050, if no additional action is taken to mitigate them (Figure 2). This

[3] Resilient Caledon Plan, 2021.

will occur alongside a projected population growth by 190%, as well as significant increases in employment. The large source of growth in emissions is due to transportation emissions, followed by commercial and residential emissions.[4] It is important to highlight that this modelling was completed prior to the new draft population growth forecast allocation for the Town, as outlined in the Draft Regional Official Plan Update. This model was completed with the assumption of Caledon's growth increasing to almost 200,000 by 2050.[5] It is assumed that the business as usual emissions growth forecast would reflect an even higher growth trajectory to accommodate 300,000 residents by 2050 as outlined in the Region's Draft Official Plan Update. .

Figure 2: Growth in GHG emissions in Caledon under a Business-as-Planned scenario, 2016-2050.

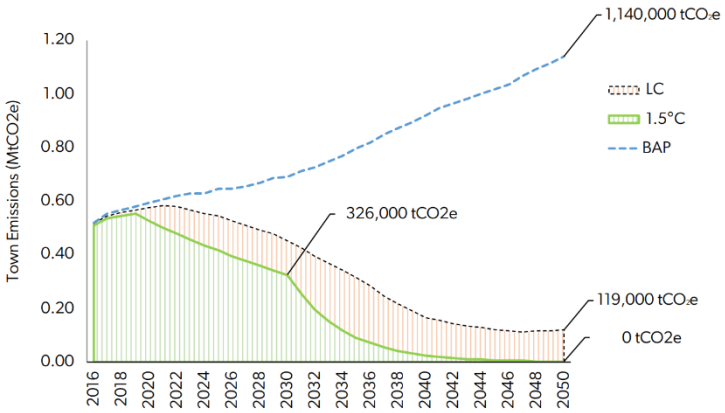


However, if the Town is able to rethink and diversify its transportation system, improve efficiency of buildings, promote low/no carbon energy sources, expand renewable energy and protect and enhance natural systems, the Town will be able to significantly reduce emissions, as presented in Figure 3 below. The area in red signifies a pathway of decarbonization that is aligned with the current actions in our Resilient Caledon Plan. The area in green represents the scale of decarbonization required to align with global science to limit warming to 1.5C. There is a current gap, known as our carbon liability gap. This will be addressed in future updates of our Resilient Caledon Plan.

[4] Resilient Caledon Plan, 2021

[5] Resilient Caledon Plan, Modelling Technical Report 2021: The population forecast used Council approved 2041 growth forecast and assumed the same rate of growth to 2050.

Figure 3: Caledon's 1.5°C pathway and carbon budget. The striped green lines, when added together, represent Caledon's carbon budget, and the solid green line represents its 1.5°C zero carbon pathway.



2.2 Caledon's Climate Forecast and Risk and Vulnerability Assessment

The impacts of climate change are already being felt today, with more intense and short duration rain events that result in stormwater management challenges, and an increase in extreme heat days, negatively impacting crops and resulting in human health challenges. The future climate projections for the Town show an increase in severity of these climate patterns (Table 2), which highlight the need for the Town to adapt to these changes and ensure that land use policies reflect this.[6]

Table 2: Summary of future climate projections for Caledon

Indicator of Change	Baseline	Forecast to the end of the century
Temperature		
Annual mean temperatures	7.0C	13.3C (increase by 90%)
Hot days above 35C	0.1 days (without humidex)	8.9 days (increase by 8800%)

[6] Resilient Caledon Plan, 2021

Cold days below OC	49 days	20 days (decrease by 59.2%)
Growing Season Length	163 days	224 days (increase by 37.4%)
Precipitation		
Annual Total Precipitation (mm)	867 mm/year	976 mm/year, (increase of 12.5%) with an increase in winter, spring and fall, with a slight decrease in the summer
Maximum one-day precipitation	37 mm	44mm (increase of 19%)

The impacts resulting from these changes in our climate system will be significant and vast. It will be important for the Official Plan to outline policies that prepare for these impacts, to ensure that population growth and our local natural, infrastructure and socioeconomic systems can adapt equitably. The Town underwent a process to understand the risks, impacts and adaptive capacity to the forecasted climate changes for Caledon outlined in Table 2. Below is a summary of some of the more significant impacts identified as part of this exercise organized by infrastructure, natural systems and agriculture, and socioeconomic systems. It is important to highlight that these impacts informed the development of adaptation actions in our Resilient Caledon Plan.

- **Infrastructure:** flooding from extreme rainfall and snowmelt is anticipated to increase pressures on stormwater and drainage systems, with warmer temperatures likely to result in an increase in algae blooms, in streams and waterways impacting drinking water. Roads and bridges are likely to experience increased stress and maintenance requirements, from temperature and precipitation extremes placing increased demand on municipal finances.
- **Natural Systems and Agriculture:** Increased temperatures result in challenges for native species to thrive in traditional habitats creating favourable conditions for invasive species. Increased growing season for farmers likely offset by unpredictable weather conditions during the growing season including more intense rainfall and higher temperatures resulting in soil erosion and increased pressure on crops and livestock.
- **Socioeconomic Systems:** Climate impacts will negatively impact the local economic system, with costs to homeowners from property damage, business disruptions, loss of agricultural productivity and increased municipal servicing costs. From a health perspective, residents (especially vulnerable populations) will be exposed to extreme heat, air and water quality and vector borne disease risks and injuries from extreme weather.

3.0 Framework for climate change policy

This section describes the framework for climate action policy integration in Caledon's Official Plan. It summarizes relevant plans and policies for this at the international, national, provincial, regional, and local scales.

3.1 GLOBAL DIRECTION

3.1.1 Intergovernmental Panel on Climate Change (IPCC)

The IPCC, the world's leading scientific body on climate change, established that the risks of climate change can be substantially reduced by limiting warming to 1.5°C . On December 12, 2015, Canada and 194 other countries signed the Paris Agreement, to limit the global average temperature rise to well below 2°C and pursue efforts to limit the increase to 1.5°C. To support this, the IPCC has developed a science-based limit of the total GHG emissions that can be released into the atmosphere, which at a minimum requires global GHG emissions to be reduced by 45% below 2010 levels by 2030 and achieve carbon neutral by 2050.

Through the release of the latest Sixth Assessment Report, IPCC concluded that the world is likely to exceed 1.5°C within the next two decades, with many changes to the earths system irreversible for centuries to millennia. However, with deep and sustained reductions in line with the very low emissions scenario (SSP1-1.9), can result in stabilizing the global temperature.[7]

3.1.2 Global Covenant of Mayors for Climate and Energy (GCOM)

The Global Covenant of Mayors for Climate and Energy (GCOM) seeks to accelerate ambitious and measurable climate and energy initiatives to achieve a low-emission and climate-resilient future. Local governments voluntarily sign on to the Covenant, committing to implementing, monitoring, and sharing the results of their action plans for climate adaptation and mitigation. Signatories must:

- develop a greenhouse gas (GHG) emissions inventory;

[7] IPCC 6th Assessment Report, 2021

- assess local climate risks and vulnerabilities;
- define ambitious climate mitigation, resilience and energy targets (mitigation targets must, at a minimum, align with their countries' Paris Agreement commitments); and
- create full climate action plans.

The Town of Caledon signed on to the GCOM in 2017, joining the current count of 10,000 other cities and local governments that have signed. Caledon is currently updating its Community Climate Change Action Plan, which will fulfill its commitment to the GCOM requirements.

3.2 FEDERAL DIRECTION

3.2.1 Pan Canadian Framework on Clean Growth and Climate Change

The *Pan-Canadian Framework on Clean Growth and Climate Change* is Canada's national plan, developed in 2016 with the provinces and territories and in consultation with Indigenous peoples. Its intent is to meet federal emissions reduction targets of net zero emissions by 2050, grow the economy, and build resilience to a changing climate. The Framework includes a country-wide approach to pricing carbon pollution, as well as regulatory measures to achieve GHG emissions reductions across all sectors. Actions are included to make new buildings more energy efficient, to support a goal for provinces and territories to adopt a "net-zero energy ready" model building code by 2030. The Framework also identifies the Low-Carbon Economy Fund and infrastructure investments to provide federal support for building retrofits. Actions for the transportation sector include enhancing investments in public transit upgrades and expansions and supporting zero-emissions vehicles and infrastructure.

3.2.2 A Healthy Environment and Healthy Economy

The Federal Government introduced a *Healthy Environment and a Healthy Economy* which includes five (5) pillars to enhance the environment and economy:

- Making the places Canadians live and gather more affordable by cutting energy waste: promote home and building efficiency.
- Making clean, affordable transportation and power available in every community: Expand supply of clean electricity by investing in renewable energy and clean technology, encourage transit and zero emission vehicles.
- Continue to ensure pollution isn't free and households get more money back: Continuing to put a price on carbon, increasing to 2030, and ensure that households receive this money back in the Provinces and Territories where the Federal carbon tax backstop applies.
- Building Canada's Clean Industrial Advantage: Establish incentives, investments and standards to promote "made-in Canada" clean technology and services and accelerate companies and innovators to reduce pollution.

- Embracing the power of nature to support healthier families and more resilient communities: Canada will plant two billion trees and better manage, conserve and restore natural spaces.

The Federal government also committed to developing its first National Adaptation Strategy and commit to further reduction GHG emissions 40-45% below 2005 levels by 2030.

3.2.3 Investing in Canada Plan

The Federal Government is investing more than $180 billion over 12 years in five main infrastructure priorities: Public Transit Infrastructure; Green Infrastructure; Social Infrastructure; Trade and Transportation; and, Rural and Northern Communities:

- 2016: Federal budget committed $14.4 billion to rehabilitate repair and modernize public transit and green and social infrastructure
- 2017: Federal budget committed an additional $81.2 billion towards public transit, 'green trade', transportation and rural and northern communities' infrastructure. This budget also outlined plans for investing $21.9 billion in green infrastructure initiatives.
- 2018: Federal government introduced a climate lens assessment for bilateral infrastructure agreements, including a GHG mitigation assessment, and climate change resiliency assessment to ensure these investments contribute to Canada's overall climate change objectives and ensure infrastructure can adapt to changing climate patterns.
- 2021: federal budget incorporates $17.6 billion towards a green recovery to create jobs, build a clean economy and enhance resiliency to climate change through introducing home retrofit programs, innovation, carbon capture, green technology, and enhancing and protecting natural systems.
- Funding: Federal government introduced $900 million in municipal climate initiatives, allocated $1 billion to the Federation of Canadian Municipalities to support grant programs and the Atmospheric Fund received $40 billion to fund GHG emissions reduction projects in the GTHA.

3.3 PROVINCIAL DIRECTION

3.3.1 Planning Act (2017)

Provincial policy directs planning priorities, including on climate change, under the *Planning Act, 2017*, c. 23, Sched. 5, s. 80 stating that municipalities shall:

> have regard to, among other matters, matters of provincial interest such as…
>
> e) the supply, efficient use and conservation of energy and water;
> s) the mitigation of greenhouse gas emissions and adaptation to a changing climate.

Through the *Planning Act*, provincial policy directs official plans to establish land use patterns in settlement areas that support efficient uses of land and resources through appropriate density,

mixes of land uses, and continued intensification efforts. These planning objectives support climate-friendly development through: transit-supportive densities, efficient infrastructure, minimized impacts to air quality, and energy efficiency and natural heritage.

Official Plan requirements under the *Planning Act, 2017*, c. 23, Sched. 3, s. 5 (2) require:

> 14) ...policies that identify goals, objectives and actions to mitigate greenhouse gas emissions and to provide for adaptation to a changing climate, including through increasing resiliency.

In addition to these policies, the *Planning Act* provides various land use planning process tools that can be used to support climate action, described in Appendix 1,

3.3.2 Provincial Policy Statement (2020)

The policy framework for planning as set out by the *Provincial Policy Statement* (PPS), under Section 3 of the *Planning Act,* establishes an efficient form of development to support climate action, ensuring that all planning decisions must be consistent with the PPS. Part IV of the document "Vision for Ontario's Land Use Planning System," states that the province's long-term prosperity and well-being, depend on "planning for strong, sustainable and resilient communities for people of all ages." Important changes in the update of the 2020 PPS relevant to climate change planning include:

- requirements for transit-supported development and prioritization of intensification;
- requiring consideration of climate change impacts in water and wastewater infrastructure and watershed planning;
- promotion of on-site re-use of excess soil;
- directing development away from hazardous and flood-prone areas;
- wise use and management of resources;
- allowances for mineral aggregate operations to use rehabilitation plans to demonstrate that extraction will have no negative impacts; and
- refocusing of energy policies to include support for renewable energy types.

Section 1.1.3 of the PPS, "Protection of Settlement Area Boundaries," describes Settlement Areas as urban areas and rural settlement areas. Their definition includes cities, towns, villages and hamlets, and notes that the vitality of settlement areas is critical to the long-term economic prosperity of communities. According to the *PPS, 2020* (1.1.3.2):

> Land use patterns within Settlement Areas shall be based on densities and a mix of land uses which:
>
> - efficiently use land and resources;
> - are appropriate for, and efficiently use, the infrastructure and public service facilities which are planned or available, and avoid the need for their unjustified and/or uneconomical expansion;
> - minimize negative impacts to air quality and climate change, and promote energy efficiency;
> - support active transportation;

- are transit-supportive, where transit is planned, exists or may be developed; and are freight-supportive; and a range of uses and opportunities for intensification and redevelopment in accordance with the criteria in policy 1.1.3.3, where this can be accommodated.

3.3.3 Growth Plan - A Place to Grow (2019)

The *Growth Plan for the Greater Golden Horseshoe* (A Place to Grow), includes two key policies within section 4.2.10 on climate change:

1. Upper- and single-tier municipalities will develop policies in their official plans to identify actions that will reduce greenhouse gas emissions and address climate change adaptation goals, [...]
2. In planning to reduce greenhouse gas emissions and address the impacts of climate change, municipalities are encouraged to:
    a. Develop strategies to reduce greenhouse gas emissions and improve resilience through the identification of vulnerabilities to climate change, land-use planning, planning for infrastructure, including transit and energy, green infrastructure, and low impact development, and the conservation objectives in policy 4.2.9.1;
    b. Develop greenhouse gas inventories for transportation, buildings, waste management and municipal operations; and
    c. Establish municipal interim and long-term greenhouse gas emission reduction targets that support provincial targets and reflect consideration of the goal of low-carbon communities and monitor and report on progress made towards the achievement of these targets.

The latest version of the *Growth Plan*, released in May 2019, however, lowered both the targets for greenfield density (from 80 residents and jobs per hectare to 50), as well as intensification targets (from 60% to 50% growth occurring within delineated built-up areas) in the Region of Peel. This reduction contradicts best practices in achieving low carbon and resilient communities.

3.3.4 Ontario Environment Plan (2019)

In the wake of its cancellation of the Cap and Trade program, the provincial government released its Environment Plan, *Preserving and Protecting our Environment for Future Generations*. The plan included actions in focus areas of: clean air, clean water, climate adaptation, mitigation, pollution prevention, private sector investment, energy conservation, government leadership, waste reduction, and land conservation. Some proposed actions from the Environment Plan with implications for the municipal planning process include:

- reviewing of land use planning policies and laws to update policy direction on climate resilience;
- modernizing the Building Code to better equip homes and buildings to withstand extreme weather events, and to support the adoption of cost-effective energy efficiency measures;

- reviewing the Municipal Disaster Recovery Assistance program to encourage municipalities to incorporate climate resilience improvements when repairing or replacing damaged infrastructure after natural disasters;
- launching a provincial Carbon Trust to encourage private investment in clean technology, committing to funding of $400 million for chosen projects over four years; and
- updating policies related to municipal wastewater and stormwater to make them easier to understand.

3.3.5 Building Code

Ontario's Building Code is typically reviewed every five to seven years. In addition, interim amendments are sometimes made between editions to reflect advances in technology, to support government priorities, and to address emerging issues.

An updated Building Code was enacted in 2012. Under the updated Code, new houses were required to meet an EnerGuide rating of 80 or less through either prescriptive or performance measures. Since 2012, further increases in energy efficiency have been incorporated, such as requiring new houses to exceed an EnerGuide rating of 80 by not less than 15%. Recent Building Code updates removed electric vehicle (EV) rough-in requirements for new buildings, counter to best practice in low-carbon policy and planning.

The provincial government is updating the Building Code with energy efficiency and net-zero carbon emissions targets for new small buildings, which will come into effect by 2030, in response to the National Building Code. Updates in 2020 will include resiliency measures for buildings.

3.3.6 Asset Management Planning for Municipal Infrastructure

Ontario Regulation 588/17: *Asset Management Planning for Municipal Infrastructure*,[8] came into effect in 2017. Under this Act, all municipalities are required to prepare:

1. A strategic asset management policy by July 1, 2019;
2. An asset management plan in respect of its core municipal infrastructure assets by July 1, 2021; and,
3. An asset management plan in respect of all of its other municipal infrastructure assets by July 1, 2023.

Per the regulation and its definitions, municipalities will be required to submit asset management plans for water, wastewater, stormwater management, roads, and bridges or culverts by July 1, 2021; and all other municipal infrastructure, which includes amongst others, all municipally-owned

[8] Asset Management Planning for Municipal Infrastructure, O. Reg. 588/17.

green infrastructure (e.g. public trees in parks and Town right of ways), buildings and facilities, and all other municipal assets, by July 1, 2023.

The regulation requires strategic asset management policy to include a "commitment to consider, as part of its asset management planning:

i. the actions that may be required to address the vulnerabilities that may be caused by climate change to the municipality's infrastructure assets, in respect of such matters as,

   A. operations, such as increased maintenance schedules,
   B. levels of service, and
   C. lifecycle management,
      I. the anticipated costs that could arise from the vulnerabilities described in subparagraph i,
      II. adaptation opportunities that may be undertaken to manage the vulnerabilities described in subparagraph i,
      III. mitigation approaches to climate change, such as greenhouse gas emission reduction goals and targets, and
      IV. disaster planning and contingency funding."

3.3.7 Greenbelt Plan (2017)

The *Greenbelt Plan* Area, which makes up approximately 80% of the Town of Caledon, includes lands within the *Niagara Escarpment Plan* (NEP) Area, the *Oak Ridges Moraine Conservation Plan* (ORMCP) Area and lands designated as Protected Countryside. For lands within the ORMCP and NEP Areas, the requirements of the ORMCP and NEP continue to apply, and the Protected Countryside policies of the *Greenbelt Plan* do not apply, except for Section 3.3 "Parkland, Open Space and Trails."

The Protected Countryside lands identified in the *Greenbelt Plan* are intended to enhance the spatial extent of agriculturally and environmentally protected lands that are currently covered by the NEP and the ORMCP, while at the same time improving linkages between these areas and the surrounding major lake systems and watersheds. Collectively, the lands in these three plans form the Greenbelt. The Protected Countryside is made up of an Agricultural System and a Natural System, together with a series of Settlement Areas as derived from municipal official plans.

Considerations for climate change in the Greenbelt, include:

a) Integrate climate change considerations into planning and managing the Agricultural System, Natural Heritage System and Water Resource System to improve resilience and protect carbon sequestration potential, recognizing that the Natural Heritage System is also a component of green infrastructure; and
b) Integrating climate change considerations into planning and managing growth that includes incorporating techniques to reduce greenhouse gas emissions and increasing the resilience of settlement areas and infrastructure within the Greenbelt. *Greenbelt Plan, 2017* (1.2.2.6).

The opportunities for climate change policy based on the Greenbelt direction support a focus on reduced greenhouse gases through community design and infrastructure, green infrastructure, as well as co-benefits of protecting the natural heritage system and water resources.

3.3.8 Niagara Escarpment Plan (2017)

The *Niagara Escarpment Plan* (NEP) aims to maintain, protect, and enhance the Escarpment and lands in its vicinity. This includes the ecological and hydrological functions of the Escarpment lands, as well as opportunities for recreation. The NEP is administered through issuance of Niagara Escarpment Development Permits and NEP any amendments made by the Niagara Escarpment Commission, which is an agency of the Ministry of Natural Resources. The Town of Caledon is a commenting agency to the NEC on the Development Permits and developed a *Niagara Escarpment Development Permit Manual* to aid in the process. Direction on climate change in the NEP covers development within Minor Urban Centres (1.6.8.5), Urban Areas (1.7.5.2), and Recreation Areas (1.8.5.2), which:

> ...should encourage reduced energy consumption, improved air quality, reduced greenhouse gas emissions (consistent with provincial reduction targets to 2030 and 2050) and work towards the long-term goals of low carbon communities, net-zero communities and increased resilience to climate change, through maximizing opportunities for the use of green infrastructure and appropriate low impact development. *Niagara Escarpment Plan, 2018* (1.6.8.5, 1.7.5.2, 1.8.5.2)

Policy direction from the NEP is consistent with that of the *Greenbelt Plan*, which supports reduced greenhouse gas emissions through community design and which focuses on building resiliency through green infrastructure and low impact development.

3.3.9 Oak Ridges Moraine Conservation Plan (2017)

The *Oak Ridges Moraine Conservation Act, 2017* SO 2001, c. 31, was put forward to protect the ecological and hydrological integrity of the 190,000-hectare Oak Ridges Moraine, approximately 15,861 ha of which fall within Caledon (23% of its land area). This led to the *Oak Ridges Moraine Conservation Plan* (ORMCP)*, 2017* regulation, which laid out the land use and resource management policy direction for lands within the area.

Under the ORMCP, land is divided into: Natural Core Areas (key natural heritage features); Natural Linkage Areas (river and stream connections); Countryside Areas (agriculture, Rural Settlements, and open space areas); and Settlement Areas (range of existing communities, uses set out in municipal official plans). More restrictive policies are in place for the creation and development of new lots within Natural Core Areas, Natural Linkage Areas and Countryside Areas.

Several ORMCP policies support climate change adaptation and mitigation. The ORMCP requires preparation of watershed plans, water budgets, stormwater management and master plans, and conservation plans, all of which must include assessments and strategies to mitigate and adapt to climate change impacts. Limitations on impervious surfaces are set for areas outside Settlement

Areas, and development in areas sensitive to groundwater contamination and wellhead protection areas is also limited. Agricultural land (prime and otherwise) and agri-food network assets are acknowledged within the ORMCP.

Further to this, the *Oak Ridges Moraine Conservation Plan, 2017* notes that:

- Natural Core, Natural Linkage, and Countryside areas' purposes are to serve in: "protecting and restoring natural areas and features that sequester carbon and provide ecological functions, including water storage, to help reduce the impacts of climate change." (11.1(g), 12.1(h), 13.1(g))
- All infrastructure developments and upgrades shall include studies that: "assess actions to reduce greenhouse gas emissions and to adapt to climate change impacts." (41.1.2(e))

The Caledon East Rural Service Centre, Village of Palgrave, Palgrave Estates Community, and hamlets of Albion and Mono are located within the Oak Ridges Moraine Conservation Plan Area. The Town brought itself into conformity with the *Oak Ridges Moraine Conservation Act, 2001*, through amendments to its current OP and Comprehensive Zoning By-law, and will be required to meet its requirements in its OP update.

3.3.10 Lake Simcoe Protection Plan

The *Lake Simcoe Protection Plan, 2009,* which was brought about by the *Lake Simcoe Protection Act, 2008*, SO 2008, c. 23, is a watershed-based plan for the restoration and protection of Lake Simcoe. This plan promotes: action on ecosystem threats such as excessive phosphorus, invasive species and climate change; protection and restoration of shorelines and wetlands; and restoring the health of aquatic life. The Lake Simcoe Protection Plan Area spans 23 municipalities. In Caledon it covers approximately 3km^2, less than 1% of the Town's area, and is located within the Palgrave Estates Residential Community.

3.3.11 Conservation Authorities

Conservation Authorities (CAs) in Ontario are mandated by the *Conservation Authorities Act*, RSO 1990, ensure conservation, restoration, development and management of the Province's natural resources through watershed-based programs and services. In addition, Conservation Authorities provide comments on development and land use decisions to mitigate and adapt to climate change. The *Conservation Authorities Act* regulates development in unsafe areas due to natural processes such as flooding and erosion, as well as development that might interfere with watercourses, wetlands or shorelines. Regulated areas are subject to development approval from the CAs. The Province recently updated the *Conservation Authorities Act (2021)* through the *More Homes, More Choice Act (2019)*, through defining core mandatory programs and services including:

- Programs and services related the risk of natural hazards;
- Conservation and management of lands owned or controlled by the Conservation Authority;
- Duties, functions and responsibilities of the Conservation Authority as outlined in the *Clean Water Act, 2006 and*

- Duties, functions and responsibilities of the Conservation Authority under Acts prescribed by the regulations.

The regulation also enables Conservation Authorities to provide a program or service outside of the core areas. This will be established by the Province in further amendments to the Conservation Authorities Act.

Two Authorities are predominantly responsible for Caledon's Land Area, the Toronto and Region Conservation Authority, and the Credit Valley Conservation Authority, with a small portion subject to Lake Simcoe Region Conservation Authority and the Nottawasaga Valley Conservation Authority.

3.4 REGIONAL DIRECTION

3.4.1 Peel Region Official Plan

Jurisdiction over municipal affairs is divided between the Region of Peel and its area municipalities. Area municipalities are responsible for parks, recreation, public transit, municipal roads and other services.

The Region of Peel provides key services such as community planning, development, social services, waste management, drinking water and wastewater services to its residents. Through land use planning, the Region provides guidance and approval on planning and development matters. This ensures that development is in accordance with provincial policies and the Regional Official Plan. The Region of Peel's Official Plan (currently under review to project growth to 2051) outlines a long-term vision for its area municipalities. Through this planning process, the Region assigns population and employment growth to Caledon, Brampton and Mississauga.

The Region's Official Plan Review and Municipal Comprehensive Review (Peel 2051) process is currently being completed to incorporate new provincial legislation, regulations and policies (including changes to the total population and employment forecasts) as well as implementing new regional policy initiatives and plans. The Plan is being updated through Regional Official Plan Amendments (ROPA). ROPA for health and the built environment and age-friendly planning have been approved under ROPA 27.

As part of Peel 2051, discussion papers and other supporting studies have been developed to inform updated policies in key focus areas including climate change, transportation, growth management, housing, water resources, *Greenbelt Plan* conformity, greenlands system planning, agriculture, and rural systems aggregates, settlement area boundary expansion (SABE) and major transit station areas.

Peel 2051 recognizes the significance of the relationship between climate action and impacts. Creating complete communities that support compact, mixed-use, transit supportive and resilient development with protected natural systems is a key strategy for the ROPA. The Region recognizes that this provides opportunities to lower greenhouse gas emissions as well as address urban heat island effects and management of stormwater, resource recharge, and air quality improvements.

Management of resources including agriculture and aggregates is also recognized for its ability to reduce GHG emissions and provide carbon offsetting opportunities. There are several important discussion papers and supporting studies that have been completed to support the climate change objectives and updated policy direction for the Region and the Town of Caledon. Summaries of these reports are outlined in table 3 below

Table 3: Summary of Regional Discussion Papers and Supporting Studies for Peel 2051

Discussion Paper	Description
Climate Change Discussion Paper (2018)	This paper provides background information and identifies potential climate change policy options for the ROP as part of the *Peel 2051.* This includes a review of the Regional and Area Municipalities Official Plans for opportunities to strengthen climate change related policies and conformity with various levels of government strategic direction. The paper recommends the development of a new policy section on climate change planning, to identify goals, objectives and actions to mitigate emissions, promote resiliency and adapt to climate change impacts. Other more specific policy options were provided in the key areas of: growth management, transportation, energy, infrastructure, waste, urban heat island, water resources, natural hazards, natural heritage, agriculture, and implementation.
Water Resources Discussion Papers (2018)	A series of papers recognize that the sustained social, economic and environmental well-being of the Region is dependent on the proper protection, management and conservation of its water resources and natural systems. Policy direction from the *Water Resources Discussion Paper* encourages source water protection and protection of the water quality of lakes, rivers and streams from other land use impacts. Climate change is recognized as causing vulnerabilities to water resources and systems. These vulnerabilities include impacts of land use on water quality and quantity; impacts of wastewater spills; stresses on stormwater management systems; and water contamination from the use of road salt.
Greenlands System Discussion Paper (2020)	A healthy, functioning Greenlands System is a key component of a complete community and protected natural systems ensure the Region is resilient to climate shifts and extreme weather while residents have access to greenspace for recreation and mental health. Recommendations include adding a new section to the Greenlands System policies requiring the local municipalities to identify, protect, restore and enhance natural heritage systems in their official plans. Policy updates are also recommended to support the implementation of policies at the local level and require proponents of development to protect significant features, design development in a way that avoids, minimizes and mitigates impacts, and provide linkages and enhancement of the system.
Agriculture and Rural Systems Discussion Paper (2019)	Agriculture within the Region faces significant challenges due to close proximity to growing urban areas. Policy direction identified includes supporting the local agricultural economy, through promotion of local produce, and promotes the reduction of transportation emissions from food delivery. Policies also recommend the protection of agricultural lands through promoting practices that reduce runoff,

	and supports maintenance of natural and planted vegetation. The overall policy guidance recognizes the importance of the agricultural economy and the opportunities for local agriculture to support climate change objectives.
Wildland Fire Discussion Paper (2018)	The Region's wildland policy review highlights direction from the *Provincial Policy Statement* to mitigate risks posed by wildland fires. The paper provides direction to mitigate damage and safety concerns from wildland fires including the recognition of wildland fire hazards as risks to public health, require new development be built far away from high risk areas, and provide information for development proponents to assess hazard forest types and wildland fire risk as part of the application process. The paper also introduced policy direction to develop mapping to ensure wildland fire mitigation measures are in place, and identify hazardous forest types.
Opportunities for Climate Change Mitigation, Energy and Emissions Reduction study (2020)	This study is one of 13 technical studies that supports planning for the expansion of Caledon's existing urban boundary. The purpose of this study is to develop a planning policy framework that supports energy planning in the new settlement area in the Region of Peel and the Town of Caledon. The primary goal is to minimize new greenhouse gas emissions to mitigate climate change over the long term in both the SABE and the Region as a whole. The framework is being developed that support policies that will enable the SABE to ultimately be a net-zero emissions community. Further analysis and refined land use planning policies will be developed by the Town of Caledon as part of subsequent stages in the planning process.
Scoped Subwatershed Study (Part A, B & C) (2021)	The Scoped Subwatershed Study (SWS) provides the necessary water resources and natural heritage input to support the SABE study. The study is scoped to provide broad scale information and assessments in sufficient detail to support the SABE work as more comprehensive subwatershed studies will be completed at the local level to support secondary planning and Local Official Plan Amendments as required. Environmental information generated by the Scoped SWS is used to evaluate and refine settlement expansion areas ensures that Regional growth management and planning decisions are linked to policy and informed by science. The intended outcomes are natural systems that are robust, connected and resilient, taking into account impacts of urbanization and climate change to provide long-term benefits to public health, well-being and safety.

3.4.2 Peel Climate Change Partnership

The Peel Climate Change Partnership includes members from the cities of Brampton and Mississauga, the Town of Caledon, Region of Peel, Toronto and Region Conservation Authority (TRCA) and Credit Valley Conservation (CVC). The Partnership was designed to set out a long-term approach to address the impacts of climate change and reduce greenhouse gas emissions within the geographic boundary of the Region of Peel. The approach is to form, inform, and transform policy direction on climate change between the partners. As climate change is not a jurisdictional issue but is cross-boundary on every scale, collaborations like the Peel Climate Change Partnership are important to support wider policy and program consistency. The Partnership will be a key

resource in the implementation and evaluation of the climate change policies in the Town of Caledon's Official Plan Update.

3.4.3 Peel Climate Change Strategy (2017)

In 2017, Peel Regional Council endorsed a Climate Change Statement of Commitment. The objective was to ensure concrete action is taken to mitigate and adapt to the effects of climate change, provide tangible benefits for residents today, and ensure that future generations will have access to resources that support a healthy, safe, and connected community.

The *Statement of Commitment* establishes guiding principles and desired outcomes for Council to support transitioning to a low-carbon and resilient future. To achieve these outcomes, the Statement committed the Region to develop a Climate Change Master Plan, recently released in 2019.

Action on climate change by the Region has progressed since the mid-2000s, including providing annual climate change funds to the Toronto and Region Conservation Authority and Credit Valley Conservation since 2007. Climate change action has been a priority for the Region for the last two terms of Council. The focus of this priority has evolved during this time, from the 2010–2014 *Term of Council Priority* (ToCP) "Reducing Greenhouse Gas Emissions" to the 2014–2018 priority to "Adapt to and Mitigate the Effects of Climate Change." The current 2018–2022 ToCP is to "Build Environmental Resilience" and aims to ensure that "Peel is a community that is resource efficient, emits less greenhouse gases, is healthier and better prepared for the impacts of climate change."

3.4.4 Peel Climate Change Master Plan (2019)

The *Peel Region Climate Change Master Plan* (the CCMP), 2019 is comprised of 20 actions and 66 activities which will set forth the direction for how the Region will lead by example through the management of Regional assets, infrastructure, and services in a changing climate over the next decade. The CCMP's focus is to support community transformation in response to climate change, and aims to complement and support efforts of partners in the broader community.

As a master plan, the CCMP is guided by four principles: balance, transparency, collaboration and innovation. It provides details for decision-makers on what solutions should be acted upon to achieve the Region's climate change outcomes, while still providing subject-matter experts flexibility on how its actions are implemented. The primary outcomes of the CCMP are to mitigate and adapt to the effects of climate change, or "Reduce Emissions" and "Be Prepared." The remaining three outcomes support the primary outcomes, and are to: build capacity, invest, and monitor and report on climate change action.

The CCMP links emission reductions to financial benefits, health benefits, and social and quality of life benefits (including climate equity). Climate equity is a principle promoting solutions that give equal opportunity for everyone to benefit from investments in climate change, while ensuring vulnerable populations do not bear an unequal burden from impacts.

3.5 TOWN OF CALEDON

3.5.1 Resilient Caledon Plan

In April 2021, the Town of Caledon Council endorsed Resilient Caledon, a climate change action plan that contains over 60 actions to reduce greenhouse gas emissions and adapt to changing climate conditions. In response to the Council declared Climate Change Emergency, this Plan adopted a long-term target of Net Zero emissions by 2050, with an interim target to reduce greenhouse gas emissions 36% by 2030. More information on the Town's GHG inventory, emissions modelling and climate projections, please refer to section 2.0, "Caledon's GHG Emissions and Climate Forecast". The key action areas within the Resilient Caledon Plan are outlined in Table 4 below:

Focus Area	**Description**
Smart Growth	**Goal:** Caledon's new communities and buildings are low carbon and resilient to climate impacts. They prioritize energy efficiency, walkability, effective stormwater management and green space. **Actions include:** incorporating climate change more strongly into the Official Plan Update, enhance protection of communities from flood risk, and promote the development of compact, complete communities.
Sustainable Communities	**Goal:** Caledon residents are prepared for climate impacts and have capacity to reduce GHG emissions and build resilience in their own homes, businesses and neighbourhoods. **Actions include:** Existing building retrofit programs, improve waste diversion, incorporate climate change into emergency response plans, promote a green economy, and enhance community capacity to take action on climate change.
Agriculture and Natural Systems	**Goal:** 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. **Actions include:** Support a resilient food and agricultural sector, protect and restore Caledon's natural and agricultural lands and natural features on private and public lands.
Low-Carbon Transportation	**Goal:** Caledon residents and businesses use low-or zero-carbon options for transportation. Cycling, walking and transit mode shares are increased through the establishment and expansion of safe and efficient networks and infrastructure. **Actions include:** Increase active transportation, expand Caledon's transit network in alignment with new growth areas, encourage the adoption of low emissions vehicles,

	expand the Town's electric vehicle charging station network and develop a strategy to reduce emissions within the Towns fleet.
Resilient Infrastructure and Energy	**Goal:** Caledon's energy infrastructure is diversified, low carbon and resilient, and core infrastructure assets are better able to withstand major weather events like storms, flooding and freeze-thaw cycles. **Actions include:** Diversifying energy supply with renewable and resilient sources, ensure Town facilities are carbon neutral by 2040, embed climate change into the Town's asset management plan, and update the Town's stormwater master plan and enhance the capacity of the Town's roads and bridges to withstand extreme weather.

3.5.3 Corporate Greenhouse Gas Reduction Framework (2019)

The Town's Corporate Greenhouse Gas Reduction Framework is a five-year strategy to reduce GHG emissions from the Town's operations. The Framework complies with and goes beyond *Ontario Regulation 507/18,* which requires public agencies to establish an updated five-year energy conservation and demand management plan. The Framework focuses on four key areas, including energy, fleet, water and waste. The Framework has a Council-endorsed target to reduce the Town's corporate GHG emissions 24% by 2024. The Town has made significant progress in corporate energy reduction, achieving a 12.6% or 2,430,561 ekWh reduction in energy use in 2018 compared to the 2012 baseline year.

3.5.4 Caledon Official Plan (2018)

The *Town of Caledon's Official Plan* is required by provincial and regional governments to establish goals and implement policies to adapt to the impacts of climate change and to set targets to mitigate GHG emissions. The Town's OP is currently undergoing a review process to ensure conformity with Provincial and Regional directions. Key policies related to climate change, are outlined below:

- Official Plan Amendment 226. This included policies on ecosystem protection, sustainable community design, climate change mitigation (i.e. renewable energy, water and energy conservation) and adaptation measures, green development standards and energy conservation into Town planning and decision-making.
- Official Plan Amendment 124: This includes policies on Ecosystem Planning and Management. These require that all land use planning decisions are primarily formed based on stewardship, maintenance and enhancement of ecosystem forms, functions and overall integrity. This section also outlines ecosystem integrity and planning objectives, performance measures and an Environmental Policy Area designation added to protect significant ecological features and systems.
- Official Plan Amendment 161, 165 and 179: Outline additional environmental controls for wellheads, aggregate extraction, and agriculture and rural area protections.

Growth management for the Official Plan, is based on a hierarchy framework of settlement areas including:

- Rural Service Centres: This is where the majority of growth is directed, which includes Bolton; Caledon East; and Mayfield West.
- Villages: Moderate growth is directed to the Villages of Alton, Caledon Village, Cheltenham, Inglewood, Mono Mills and Palgrave.
- Industrial Commercial Centres: This includes Tullamore, Sandhill, and Victoria. These locations are intended to complement the other settlements, providing small-scale support to Rural Service Centres for industrial and commercial development.
- Hamlets: Intended to accommodate minor growth through infill and development of vacant parcels.

Additional information on growth for these areas is included in Secondary Plans, Community Improvement Plans (which contain energy efficiency grant opportunities) and their accompanying Design Guidelines (i.e. Bolton, Caledon East, and Six Villages).

Future Direction of Caledon's Climate Change Policies

The Town has a unique opportunity to progress its land-use planning approaches to enable low carbon and resilient development that reflects the needs of addressing the climate change emergency. Planning policies can provide direction to reduce urban sprawl and allow for the efficient use of land, energy and transportation systems; promote a greater mix of housing options that are more energy efficient; ensure the design and construction of new buildings to produce as few GHG emissions as possible; and emphasize green infrastructure, urban forests and community amenities that improve health and well-being.

Opportunities for further alignment, and specific policy recommendations for the OP are further discussed in Section 4.

4.0 Climate change policy in Caledon's Official Plan

This section provides policy options and recommendations for the incorporation of climate change into the five focus areas of the Official Plan Update:

1. Transportation, Technology, and Infrastructure
2. Natural Resources and Agriculture
3. Growth, Settlement, Housing and Employment; and
4. Tourism, Heritage, Healthy Communities and Culture.

In addition, this paper highlights specific tools to support the implementation of various proposed planning policies, highlighted in Schedule 1.

4.1 CLIMATE CHANGE

Caledon Council declared a climate change emergency and approved a GHG emissions reduction targets of a 36% reduction below 2016 by 2030 and net zero emissions by 2050, aligned with global science emissions pathway for 1.5C warming. These targets informed the actions outlined in the Council approved community climate change action plan, Resilient Caledon. This Plan also contains actions that respond to the need to adapt to unavoidable weather changes, such as extreme weather and heat. The success of this Plan, and the Council approved targets depend on the ability of the Official Plan update to successfully and ambitiously integrate climate change as a core objective and inform policies throughout the Plan. It is also important to highlight that the Town cannot achieve these targets alone, true collaboration amongst the community, agency partners and the private sector will be crucial to achieving deep emissions reductions.

4.1.1 Summary of Policy Direction

Provincial policy direction requires municipalities to develop Official Plan policies that support climate change adaptation and mitigation. Recent changes to Policy include more explicit direction that includes:

- Requiring policies that identify goals, objectives and actions around adaptation and mitigation; and
- Encouraging planning to: establish GHG inventories, interim and long-term greenhouse gas emission reduction targets and strategies and monitor and report on progress.

In order to meet the objectives of the Resilient Caledon Plan, the Town must go beyond the requirements of Provincial direction and build climate change into the core of the Official Plan update. This will also result in the need to use stronger language (i.e. encourage versus require) throughout policy language and require the Town to produce annual GHG inventories to track progress, and formally adopt reduction targets into the Plan.

4.1.2 Review of Existing Caledon Official Plan Policies

A review of the Town of Caledon's existing OP indicates that climate adaptation and mitigation considerations are covered widely and comprehensively, under the Sustainability Policy Section. Specific direction on climate change is included in section 3.1.3.8 "Climate Change" noting that:

> …the Town of Caledon can and should pursue practical and innovative climate change mitigation and adaptation measures within the context of the Town's local land use planning and development approvals functions… The Town policy approaches to land use planning, energy consumption, transportation and infrastructure systems and the management and wise use of natural resources can all contribute to climate change mitigation and adaptation. (Caledon Official Plan, 3.1.3.8)

Complementing Policies under this section provide direction to:

- Promote alternative and renewable energy systems;
- Promote compact, mixed-use neighbourhood development patterns;
- Improve air quality;
- Adopt Adaptive Environmental Management practices; and
- Establish and implement sustainability indicators and monitoring programs to measure the effectiveness of Plan policies relating to the pillars of sustainability: economic; environmental; and social/cultural.

In addition, the OP contains policies that recognize the Town's Natural Heritage Systems for its role as carbon sinks and in increasing the Town's resilience and adaptability to the impacts of climate change. Additional climate change policies commit the Town to:

- Collaborate in identifying and implementing development patterns, standards and practices to reduce emissions,
- Participate in the Region of Peel Climate Change Strategy,
- Advocate for economic analysis of mitigation and adaptation services provided by natural heritage systems,
- Collaborate on the review of municipal infrastructure standards to include considerations for climate change adaptation and mitigation,
- Collaborate to improve public transit, carpooling, and other Traffic Demand Measures to mitigate GHG emissions from transportation,
- Consider supporting the Region of Peel energy from waste initiatives.

4.1.3 Recommendations

The review of the Town's existing Official Plan policies did reveal compliance with recent Provincial planning direction. This is because the Town has successfully incorporated ecosystems planning and sustainability as guiding principles throughout the Plan. However, there are opportunities for the Town to be more ambitious with its climate change goals and policies. In order to accomplish this, it is recommended:

- **Establishing a new Climate Change Section:** This section should include the policies within the Sustainability and Ecosystem Planning and Management sections of the existing Plan. In addition, this section should establish clear mitigation and adaptation goals, strategic direction and principles of the Official Plan. This section should also address the social, economic and environmental connections and synergies with taking climate action. This will support broader integration of a climate change lens throughout the Official Plan through sections that encourage compact communities, transportation, energy and natural systems etc.
- **Integrate the Town's Climate Action Plan, Resilient Caledon:** Integrating the Town's Council approved climate action plan, Resilient Caledon, into the Official Plan will include incorporating GHG emissions reduction targets, future climate impacts, key actions and implementation monitoring requirements. This will ensure alignment and enhance the authority of the Town's GHG emissions reduction targets and climate adaptation goals.
- **Build a Framework of Flexibility:** Science related to climate change is constantly being updated. The Official Plan should establish a framework that can support new strategies, and collaborate with the Region, partners and other levels of government to address climate change.
- **Incorporate Strong Climate Change Mitigation and Adaptation Policies:** Climate change related policies in the Official Plan should:
    - Provide a rationale as to why and how they contribute to climate change adaptation and/or mitigation solutions;
    - Make note of co-benefits (if applicable) that the policies support in furthering other municipal priorities (i.e. improved health, growing a low-carbon economy, etc…);
    - include metrics and targets to ensure commitment, and to track progress;
    - include a timeline for monitoring and reporting on the metrics;
    - cross-reference the Plan's guiding vision or principles related to climate action;
    - reference other relevant plans and strategies that will support the policy (i.e. Climate Change Action Plan, Transportation Master Plan, Asset Management Plan, etc…); and
    - include directive language (i.e. 'shall' and 'require' rather than 'may' and 'encourage').

Sample policy options to enhance the integration of climate change into the Town's Official Plan are outlined below:

CLIMATE CHANGE POLICY OPTIONS
Overall Vision

- The Town of Caledon shall be a Town that is energy conscious, reduces its emissions at a level aligned with global science and is more resilient to the impacts of climate change (Ottawa Official Plan Update)
- In all of its planning, public projects, and infrastructure investments the Town shall be a leader in climate action planning. (London, ON)
- The Town shall work with other jurisdictions and levels of government, industries, businesses and the community to address climate change mitigation and adaptation, and to build a resilient community. (Mississauga, ON)
- The Town shall implement a "climate change lens" as the approval authority on all council decisions and policy and development applications including all OP updates and by-laws. Considerations shall include but are not limited to:
    - Reduction of greenhouse gas emissions;
    - Improvement of air quality;
    - Promotion of active transportation;
    - Promotion of compact form and efforts to limit the dispersal of the population and travel times between housing, employment, and amenities and services;
    - Use of green infrastructure;
    - Promotion of design to:
        - Maximize energy efficiency and conservation including consideration of the mitigating effects of vegetation; and
        - Maximize opportunities for the use of renewable and alternative energy sources and systems;
    - Identification and mitigation of existing and anticipated hazards which may be compounded or aggravated by climate change, including susceptibility to impacts from extreme weather, including flooding, heat waves, wildland fires, and storms;
    - Identification of natural heritage features that have become more sensitive to development pressures due to climate change; (Muskoka, ON)
- Climate Lens briefs shall be submitted for all capital projects, matching the requirements of Infrastructure Canada's Investing in Canada Infrastructure Program, including summaries of GHG emissions impacts, and risk management to anticipate, prevent, withstand, respond to, and recover and adapt from climate change related disruptions and impacts (Muskoka, ON)

Climate Change Mitigation Policy Options

- The Town shall establish policies and undertake programs to support its target of reducing community wide annual greenhouse gas emissions (Guelph, ON) by 36% below 2016 levels by 2030 and 100% to net zero tonnes of carbon dioxide (equivalent) by 2050, in alignment with the Paris Agreement's goal of avoiding catastrophic damage from climate change and limiting global warming to 1.5C.
- The Town shall not exceed its carbon budget of 7.9MtCO2e alongside its emissions targets, as established in the Resilient Caledon Plan, which it will report progress on a yearly basis. (Edmonton, AB)
- The Town shall review and, if necessary, update its targets based on recommendations from the IPCC and scientific community at a minimum of every five years.

- In concert with its review of its emissions targets, the Town shall work with partners in the community and other levels of government to conduct a mid-point review of its Resilient Caledon Community Climate Change Action Plan at a minimum of every five years and a more comprehensive update of the Plan every 10 years.

Adaptation Planning and Action

- Caledon shall reduce the impacts of climate change that pose a threat to Town buildings, infrastructure, natural systems, and to the safety and wellbeing of its residents. Caledon shall develop policies on climate change that will:
    - promote development and land use patterns that conserve and enhance biodiversity and consider the impacts of a changing climate;
    - promote and protect green infrastructure (natural systems that help to increase resilience to climate impacts, for example, by infiltrating water during floods, and providing cooling during extreme heat); (Mississauga, ON)
    - ensure that new and existing areas, buildings, and infrastructure at risk of damage to climate change impacts are identified and have plans established to mitigate or eliminate their vulnerabilities;
    - establish emergency planning procedures to respond to anticipated extreme events; and
    - prioritize planning and actions to reduce the impacts of climate change on vulnerable populations. Vulnerable populations are those who have limited capacity to respond to or prepare for the impacts of climate hazards, or who live in particularly vulnerable locations.
- The Town shall undertake the development of adaptation metrics and targets to track progress. In addition, the Town shall develop a program to monitor and document climate impacts to improve adaptation and emergency management planning.

Corporate Climate Action

- In the 2024 Corporate Greenhouse Gas Reduction Framework update, the Town shall work towards updating its actions and targets to achieve zero emissions and 100% renewable energy in its corporate operations by 2050.
- The Town shall explore the opportunity to establish low carbon emergency back up power for public facilities to serve as warming and cooling centres during extreme weather events.
- The Town shall work to establish zero emission building standards through its Corporate Green Building Standard updates.
- The Town shall explore opportunities to enhance its green procurement policies to account for the GHG emissions and climate related risks associated with the products or services provided to the Town.

Commitment to other Plans and Strategies

- Within this Plan and other activities, the Town shall support new and existing plans and strategies and their targets that have relevance to climate adaptation and mitigation, including the: Official Plan update, Corporate Greenhouse Gas Reduction Framework,

Stormwater Management Master Plan, Asset Management Plan, Peel Vulnerability Studies, Emergency Management Plans, Transportation Master Plan, Parks and Recreation Master Plan, and other relevant plans.

- The Town shall work to incorporate climate mitigation and adaptation considerations into its other plan updates, where not included.

Monitoring and Reporting

- The Town shall establish, monitor, and report on relevant climate action indicators from the Community Climate Change Action Plan, Resilient Caledon and other Town plans, and will update these and OP policies periodically. The Town shall include preliminary indicators and a monitoring and performance framework in this Official Plan, including, but not limited to:
    - Resilient Caledon Plan related investments;
    - the reliability and cost of diverse energy, water and transportation services available to Caledon's residents and businesses; and
    - energy and water use and greenhouse gas emissions. (Guelph, ON)

Emergency Preparedness

- The Town shall work with the Province, local municipalities and conservation authorities to prepare for climate change impacts by ensuring public health and safety, infrastructure security, emergency services, and that evacuation routes are maintained during flood events. (York, ON)
- The Town shall encourage emergency management planning authorities to update their plans regularly and reflect disaster response, best practices as well as updated climate projections for severe weather events, including flooding and respond to extreme heat, through the siting of cooling centres. (York, ON)
- The Town shall work with local municipalities, conservation authorities and other partners to develop tools and strategies to address impacts on infrastructure and hazard land management resulting from the effects of climate change. (York, ON)
- Conservation Authorities periodically update the methodology and mapping used to evaluate and identify flood risk areas. Accordingly, the Town shall, upon receipt of revised floodplain mapping, conduct the necessary studies to determine the appropriate approach to mitigating flood risk. Study findings may indicate the need to undertake area-specific remediation works and possible changes in land use designations. (Ajax, ON)

4.2 TRANSPORTATION, INFRASTRUCTURE AND TECHNOLOGY

In 2016, transportation accounted for approximately 54% of the Town's total community-wide emissions, with 89% of its population primarily commuting as auto drivers or passengers. In addition, energy used for buildings, account for 29% of emissions. Building energy costs, combined with transportation fuel costs, total $315 million in energy expenditures (2016) leaving the community annually[9]. Lastly, the Town's core infrastructure, such as roads and bridges, have also been identified to be at risk of forecasted climate impacts, specifically related to extreme weather and intense precipitation. As the Town faces a period of rapid growth over the next 20 years, the strategic development of transportation, technology (i.e. renewable energy) and infrastructure represents a key opportunity to reduce emissions and to adapt to a changing climate. Some opportunities in this area include: decreasing personal automobile use in favour of active and alternative mode shares, accelerating electric vehicle uptake, and increasing resilience to anticipated climate hazards through robust and redundant communications and energy systems, and through properly sized storm and flood infrastructure networks.

4.2.1 Policy Direction

Provincial policy direction requires that municipalities address climate change impacts by increasing resilience in municipal infrastructure management and planning. In addition, policy direction has also been provided to reduce GHG emissions.

Key Provincial policy direction on transportation, technology and infrastructure include:

- requirements for transit-supportive development and prioritizing intensification over greenfield development (including minimum density targets for areas adjacent or in proximity to current or future transit corridors);
- requirements for consideration of climate change impacts in transportation, energy, water and wastewater infrastructure and planning;

[9] Resilient Caledon, 2021

- supporting and improving the development of active transportation networks and transit infrastructure;
- encouraging provision of opportunities for the development of district energy, and renewable and alternative energy systems; and
- identification and prioritization of green infrastructure and low impact development strategies and opportunities to improve resilience.

Regional direction further supports other strategies, such as decreasing minimum parking standards to incentivize alternative transportation modes, allowing for larger sidewalks, building separated cycling facilities, and enhancing urban tree canopy cover.

4.2.2 Existing Official Plan Policies

The Town's existing Transportation policies in the Official Plan are laid out in section 5.9 "Transportation", with infrastructure policies addressed throughout the Plan. Existing policy primarily ensures that development occurs in a manner that maximizes efficient use of infrastructure. Caledon's existing Official Plan policies relevant to climate mitigation and adaptation in transportation, technology, and infrastructure include:

- emphasis on intensification for efficient use of existing and planned infrastructure, and reduced impact on natural systems;
- commitment to review municipal infrastructure standards with a view to adapt to and mitigate anticipated impacts of climate change;
- encouraging adherence to the Town's ecosystem principle, goal, objectives, policies and performance measures in the maintenance of existing infrastructure;
- confirming that new public and private infrastructure shall be subject to the environmental policies of the Official Plan;
- commitment to an efficient, accessible multi-modal transportation system;
- support for development of transit, rideshare, and active transportation modes and infrastructure;
- minimum distance requirements for distance to transit for high density developments and retirement homes;
- policy to advocate for expanded transit services;
- incorporating consideration for renewable energy and locally produced or district energy in design guidelines; and
- supporting the provision of leading-edge telecommunications services including broadband technology in employment areas.

4.2.3 Recommendations

As noted above, the Town's existing policies for transportation, technology, and infrastructure provide coverage of practices to mitigate emissions and adapt to climate change impacts, meeting provincial policy requirements. In addition to carrying over additional policies and incorporating stronger language (i.e. require versus encourage) related to climate change, additional recommendations to enhance direction are outlined below:

- **Transportation:** Further direction is recommended to enhance active transportation and transit mode shares in existing and new development, that meet or exceed targets in Multi Modal Transportation Plans. Additional policies include the introduction of complete street design principles, reducing minimum parking standards to increase transit uptake, enhance carpooling infrastructure, require bike infrastructure within employment lands, and strongly encourage electric vehicle charging infrastructure.
- **Renewable Energy and Energy Infrastructure**: Policies are recommended to encourage district energy and renewable energy in new development through supportive policies such as producing technical standards to assess feasibility, increasing density (supporting district energy feasibility), expanding solar systems on new rooftops, requiring net zero energy and emissions plans, and support new technology innovation (i.e. energy storage).
- **Infrastructure:** Recommended policies include updating design standards and stormwater master plans to reflect projected climate conditions, apply a climate lens to asset management to direct Town investments on decarbonization and enhancing adaptive capacity to climate risks, direct development away from high risk areas (such as flooding), and enhance stormwater management through adopting innovative practices such as low impact development.

Detailed policy recommendations for integrating climate change more strongly into transportation, technology and infrastructure are outlined below.

TRANSPORTATION, TECHNOLOGY, AND INFRASTRUCTURE POLICY OPTIONS

Active Transportation and Transit Infrastructure

- Through the policies in this Plan and other activities, the Town shall strive to increase active transportation mode shares, through the development of a safe, robust, well-connected active transportation network, and the planning of mixed-use, compact communities in which services can be accessed within walking and biking distance of homes. This shall be further supported by:
    a. committing to the Multi Modal Transportation Master Plan and Active Transportation Master Plan and their active transportation targets;
    b. Encourage the installation of bike lockers in multi-unit residential buildings, workplaces and tourism destinations, such as trailhead and hotels
    c. promoting and improving the connectivity of the street network;
    d. Establishing minimum maintenance standards for cycling facilities and infrastructure
    e. seeking to establish pedestrian connectivity through the acquisition of easements, pedestrian links and other means in cases where it is impractical to establish full public streets; and
    f. establishing annual targets for the provision of cycling infrastructure such as bicycle lanes and routes, multi-use pathways, and trails and including them in the Town's capital plan. (Vaughan, ON)

- During the review of development applications and as part of road construction and reconstruction projects, the Town shall require the provision of pedestrian facilities on all existing, new and reconstructed roads that considers the impact to the character of the community and surrounding land uses and design. Pedestrian facility requirements are as follows::
    a. On both sides of arterial, major collector and collector roads in urban area and in villages.
    b. On both sides of all roads that carry transit services in urban area and Villages;
    c. On localroads with an AADT greater than 1000, along both sides of a road with a ROW of 18m or greater and/or along both sides of the road that is on a main school route, or provides access to a bus stop, public park, community centres, commercial or public buildings, neighbourhood and regional commercial retail or employment centres;
    d. Within and between neighbourhoods, and from local roads to arterial and collector roads at su fficient intervals to create walkable communities;
    e. Wherever identified by a secondary plan or a community design plan;
    f. In road corridors where the context is appropriate, a multi-use pathway may be used in lieu of a sidewalk and must be maintained year-round. (Ottawa, ON)
- The Town shall adopt Complete Streets design principles to prioritize travel of all modes, and ensure safety of all ages and abilities within existing and new built form. Principles should also complement connectivity and continuity of on-road and off-road transportation networks, for all road and trail classifications throughout Caledon, and include Green Streets pinciples. To support this, the Town shall develop Complete Streets design guidelines to be used for planning and design that reflect the individual character of the Town's various urban, rural, hamlet and village settlements. . (Markham, ON)
- The Town shall prioritize transit and active transportation in all transportation network updates and expansion, as well as decrease minimum parking requirements in appropriate areas to encourage transit use through requirements outlined in Green Development Standards. (Vaughan, ON)
- Sustainable modes including public transit shall be the primary focus for expanding Caledon's transportation network capacity. A minimum overall transit modal split of 2.5% during peak periods is targeted for the Town by 2041. Peel Sustainable Transportation Strategy is targeting 30% AM peak hour trips by sustainable modes by 2041. (Vaughan, ON)
- The Town shall adopt requirements in its Official Plan and Zoning Bylaw that requires minimum bicycle parking in conjunction with all high/medium density residential, office, retail, service commercial, recreational, industrial and institutional developments. (Burlington, ON)
- The Town shall establish Site Plan control requirements to improve pedestrian connectivity at and between a site. (Ottawa, ON)
- The Town shall support the Transportation Master Plan, and adopt its recommended policies to:
    a. To enhance public transit service, as warranted by economic feasibility and service demand, and incorporate the transit function in the planning and development process.

b. Work with the Region, neighbouring municipalities, Metrolinx, the Province and other appropriate jurisdictions to devise a long-term Carpool Lot Strategy.
c. Promote the establishment of carpool lots at strategic locations to integrate with GO Transit, York Region Transit, Brampton Transit and major highway interchanges.
d. Develop and implement a road hierarchy that ensures minimum standards and promotes improved conditions for vulnerable road users
e. Encourage and collaborate with the Region, Province, Metrolinx, neighbouring municipalities and other partners to improve inter-municipal and inter-regional transit services.
f. Encourage transit supportive land uses in secondary plans, settlement expansions and future developments.
g. Encourage the incorporation of transit shelters and waiting areas into the entry design of buildings that are located abutting existing or future transit stops and are accessible to all users including persons with disabilities
h. Ensure adequate and secure long-term and short-term bicycle parking and end-of-trip facilities will be provided; and
i. Investigate the need for traffic calming measures to reduce the negative effects of motor vehicle use, including but not limited to excessive speed and cut-through traffic and promote pedestrian safety. (Caledon Transportation Master Plan)

Electric Vehicle Charging Infrastructure

- The Town shall require (through Green Development Standards), electric vehicle charging infrastructure in new and existing developments. (Vaughan, ON)
- The Town shall promote or support installation of Electric Vehicle charging infrastructure as part of the funding and incentive program(s) covered by the Town-wide CIP for energy efficiency.
- Where feasible, installation of infrastructure to support the use of alternative fueled vehicles, including charging stations for electric vehicles, is encouraged in the design of parking areas (City of Orillia Official Plan)
- The Zoning By-law may determine minimum electric vehicle equipment requirements where private parking is provided for larger-scale mixed-use, mid-rise and high-rise residential, office and industrial developments (Ottawa Official Plan)
- The Town may consider allocating parts of streets, such as curbside space, during various times and in various locations according to the context, for uses such as Parking spaces for car-share, bicycles, commercial cargo e-bikes and electric vehicle charging stations (Ottawa Official Plan)

Renewable Energy and Energy Infrastructure

- The Town shall encourage district energy-ready new development in areas identified for district energy. (Guelph, ON)
- Net zero energy and emissions plans shall be required for new developments and Secondary Plans, addressing strategies to reduce emissions, increase energy efficiency, and support renewable and district energy systems. (Markham, ON)

- The Town shall support the application of district energy through:
  a. developing guidelines and technical standards to assess the feasibility of and implement district energy using a combination of renewable energy systems and alternative energy systems, including combined heat and power, from a renewable source such as biogas;
  b. considering [biogas-based] combined heat and power systems and district energy through secondary planning processes;
  c. exploring initiatives including public-private partnerships for the implementation of district energy; and
  d. planning for high density and mixed-uses in appropriate locations that improve the viability of district energy. (Guelph, ON)
- The Town shall explore opportunities in collaboration with partners to implement renewable energy and district energy systems within the existing built environment.
- Development shall be in accordance with the energy and sustainability policies of the Official Plan and the following:
  a. All development shall have regard for the goals and strategies of the Town's Resilient Caledon Plan
  b. Should the Town and appropriate partners identify parts of the Town as potential district energy areas, new development shall be district energy-ready, subject to the Town establishing District Energy Ready Guidelines
  c. The Town shall work with Hydro One and appropriate partners on the development of a district energy system for the Town if such a system is feasible; and
  d. Where a district energy system has been established or is planned, new development shall be encouraged and may be required to connect to the district energy system and new municipal buildings shall connect to the district energy system. (Guelph, ON)
- The Town may enter into easements or municipal access agreements for the use of public rights-of-way for the construction, maintenance, and operation of district energy thermal network systems. (Kitchener, ON)
- The Town shall encourage and support renewable energy in new developments. (Elgin County, ON)
- Development shall be encouraged to approach carbon neutrality in a cost-effective manner through gains in energy efficiency in built form and by sourcing additional needs from renewable energy sources such as wind, solar and biomass energy. (Guelph, ON)
- Within the Town, a majority of the available roof area of new development shall be encouraged to be dedicated to rooftop solar technologies such as photovoltaic or solar thermal, (Guelph, ON) and combined with Green Roofs, where appropriate.
- The Town shall encourage the development of smart grids and microgrids.
- The Town shall seek to reduce peak electricity consumption through the promotion of low carbon alternative energy generation, energy storage, smart meters, demand-side management programs and practices, and emerging energy technologies. (Vaughan, ON)
- The Town shall implement a Solar Right-To-Light bylaw to help reduce the risk for developers who are considering investing in solar systems on properties affected by

potential nearby redevelopment / intensification. Solar access to solar energy systems shall be protected from shading by vegetation, and solar access to solar energy systems registered with the Town shall be reviewed when construction on a neighboring property is proposed. (Santa Cruz, CA)

- The Town shall develop processes, programs, and grants to forward climate-related research, technology, and businesses. Work with existing businesses to encourage emissions reductions and climate resilience.
- That the Town explore the feasibility of, establishing a a renewable energy zone, within the Zoning By Law. This would contain areas with high quality variable renewable energy resources, suitable topography and land use designations.
- Through site planning and building design, the Town shall assess opportunities to conserve energy, reduce peak demand and provide resilience to power disruptions as part of new development. Local integrated energy solutions that incorporate renewable energy such as district energy in high-thermal density areas, geothermal and waste heat energy capturing systems and energy storage are supported. (Ottawa Official Plan).

Infrastructure planning

- The Town shall identify and implement design and development patterns, design standards and practices to reduce climate change impacts on public works and infrastructure including roads and active transportation networks, bridges, parks, open space and energy distribution systems. (Guelph, ON)
- The Town shall review its Salt Management Plan, to identify opportunities to reduce the impact of road salt on the natural environment and water systems, while maintaining safety and reducing public risk.
- The Town shall update its risk and vulnerability assessment every five years to identify opportunities to enhance infrastructure resilience, and risks posed by climate change impacts and reflect the latest science from the IPCC.
- The Town shall apply a climate change lens to asset management planning and capital projects, including all maintenance and new development of transportation, stormwater, parks, open space, energy, and technology systems and infrastructure, as described in the Climate Change section of this Plan, ensuring risks from climate change impacts are mitigated, and greenhouse gas emissions are reduced.
- The Town shall consider the adoption of a sustainability framework into the design of municipal infrastructure, such as the Envision standard.
- Stormwater management plans and watershed planning shall be required to include assessments of the impacts of climate projections and extreme weather events, as well as strategies to reduce vulnerabilities. (Muskoka, ON)
- The Town 'The Town in collaboration with partners, shall protect, improve, and restore the water resource system through a treatment train approach to stormwater management' (Ottawa Official Plan)
- Proposals for development and redevelopment (applications) and capital infrastructure investments shall incorporate a treatment train approach to stormwater management making use of the site characteristics by using techniques such as including techniques such as: rainwater harvesting, phosphorus reduction, constructed wetlands, bio-retention

swales, green roofs, permeable surfaces, clean water collection systems, and the preservation and enhancement of native vegetation cover. (Muskoka, ON)

- The Town shall establish a stormwater by law to establish general requirements for the municipal stormwater system, including but not limited to stormwater quality and quantity.
- In order to control flooding, ponding, erosion and sedimentation and to protect water quality and aquatic habitat or other natural habitat that depend on watercourses and other water bodies for their existence, stormwater management plans shall generally be required for any major development. Stormwater management shall be undertaken in accordance with Provincial, Regional, Conservation Authority or Town guidelines, strategies or plans, where applicable. (Muskoka, ON)
- Planning for stormwater management shall: i) Minimize, or, where possible, prevent increases in contaminant loads; ii) Minimize changes in water balance ; iii) Not increase risks to human health and safety and property damage; iv) Maximize the extent and function of vegetative and pervious surfaces; v) Promote stormwater management best practices, including stormwater attenuation and re-use, and low impact development; and vi) Consider the impacts of climate change in the design of stormwater facilities. (Muskoka, ON)
- As part of a complete application, all development and redevelopment applications will be required to: a) Identify and mitigate the impacts of additional runoff resulting from increased imperviousness through at-source and conveyance low impact development practices; and b) Implement site, grading, building and servicing design measures to protect new and existing development from urban flooding (East Gwillimbury, ON).

4.3 NATURAL RESOURCES AND AGRICULTURE

Natural resources are defined in the Town of Caledon's Official Plan Update as "our forests, wildlife, geological formations, farms, mineral, and water resources." These are covered in various sections of the existing Official Plan, recognized as major constituents of the Town's land area, heritage, and economy, and in many cases also protected through provincial and regional policies and plans, such as the Greenbelt Plan, Niagara Escarpment Plan, and Oak Ridges Moraine Conservation Plan.

Our natural systems will likely face climate risks related to increased survival rates of invasive species and pests, drier conditions causing loss of wetlands and water contamination from increased salinity. This could result in a loss of ecosystem services related to air and water purification, stormwater management, shading, species habitat and loss of carbon sequestration.

Agriculture will be impacted through drier summer conditions, increasing survivability of pests and challenges related to operating in a less predictable climate. There is opportunity to contribute to climate change mitigation and resiliency by enhancing local food security and contribute to emissions reductions through reducing food miles and exploring the feasibility of carbon storage through soil management practices.

4.3.1 Policy Direction

Natural Heritage

Requirements for Natural Heritage preservation is covered extensively in the *Provincial Policy Statement (PPS)*, *Niagara Escarpment Plan*, *Oak Ridges Moraine Conservation Plan*, *Greenbelt Plan*, *Lake Simcoe Protection Plan*, and the *Growth Plan for the Greater Golden Horseshoe*. These plans, in large part, restrict development in ecologically sensitive areas, and lay out policies for how development in and around these areas can occur, to maintain the ecological and hydrological integrity. Policy direction is also provided to direct development away from hazard-prone areas.

With respect to climate change adaptation and mitigation, PPS policies require consideration of the potential impacts of climate change that may increase the risk associated with natural hazards, as well as evaluation and preparation for impacts of climate change to water resource systems at the watershed level. The *Provincial Growth Plan, 2019* requires policies and actions to reduce GHG emissions and address climate change adaptation goals. This includes protecting the Natural Heritage System, and undertaking watershed and stormwater management planning. The *Regional Official Plan* reinforces these policies and includes additional direction for undertaking restoration activities.

Agriculture

The *Growth Plan* defines the Agriculture System as the 'agricultural land base and its agri-food network, which includes infrastructure, services, and assets important to the viability of the agri-food sector.' Updated policy on climate change in the *Provincial Growth Plan, 2019* cites "promoting local food, food security, and soil health, and protecting the agricultural land base" as one of the required action areas to be included in Official Plan Policies to reduce greenhouse gases and adapt to climate change (4.2.10). The Regional Official Plan supports "sound agricultural land management and soil conservation practices," while the Peel Climate Change Strategy encourages "working with other jurisdictions to develop agriculture strategies in response to changes in weather and related climate change impacts."

Mineral Resources

There is little provincial policy direction given with respect to natural resource extraction and climate change, except for Regional Official Plan policies that direct undertaking studies to address the impacts of mineral aggregate extraction expansions on communities and the natural environment, as well as identifying opportunities for rehabilitation of abandoned extraction areas.

4.3.2 Existing Official Plan Policies

Natural Heritage

Natural heritage preservation is covered extensively through the Town's Official Plan, in part due to the Requirements of the *Provincial Policy Statement*, *Niagara Escarpment Plan*, *Oak Ridges Moraine Conservation Plan*, *Greenbelt Plan*, *Lake Simcoe Protection Plan*, and the *Growth Plan for the Greater*

Golden Horseshoe. The existing Official Plan enforces and encourages the protection of natural heritage systems at a high level, through its overarching ecosystem principle to 'seek to preserve, protect and enhance natural physical features and biological communities, and cultural heritage resources.' (2.2.1) as well as through its strategic direction that includes stewardship of resources.

A subsequent section on ecosystem planning and management sets out an ecosystem framework, ecosystem planning objectives, strategies, and performance measures, which are further supported in the Natural Systems component of the Town Structure, and Environmental Policy Area of the Land Use Policies.

Agriculture

Encroachment of development on agricultural land is recognized as a key issue for the Town, with concern noted within the Official Plan that a significant portion of the Town's Prime Agricultural Area is also located within the Growth Plan Area. The overarching goal for agriculture policy in the Town's Official Plan is laid out in the Land Use section 5.1 Agricultural Area, to: "Protect Prime Agricultural Areas by encouraging the business of agriculture, by providing for innovation and diversification within agriculture, by providing additional economic opportunities through On-farm Diversified Uses, and by limiting non-agricultural uses and non-agricultural severances." Best practices in agriculture policies that are incorporated into the Town's existing OP include:

- ensuring new land uses are compatible with surrounding uses;
- encouraging on-farm diversified uses, and ensuring compatibility with agricultural sector goals;
- limiting fragmentation of lands suitable for agriculture;
- promotion of agri-tourism;
- seeking partnership and funding opportunities to introduce new technology to reduce greenhouse gas emissions (e.g. biogas digestion) from agricultural operations;
- promoting agricultural research and the demonstration of Best Management Practices;
- promoting the Environmental Farm Plan approach;
- supporting development of a water budget and allocation process with monitoring to ensure sufficient supply for land use activities and users with no adverse effects;
- supporting local agricultural groups;
- considering and reviewing the impact of a differential tax assessment program to ensure that farming is encouraged;
- encouraging non-farming landowners to allow for long-term leases of their lands for agricultural uses;
- investigation of the use of conservation easements to promote agricultural land;
- application of minimum distance separation formulae; and
- requirement for agricultural impact assessments for proposals in prime agricultural area, and within complete application requirements

Mineral Resources

Caledon's OP includes policy 'to ensure that the extraction of aggregate resources is undertaken in a balanced manner which adheres to the Ecosystem Planning and Management Objectives of the Plan.' Subsequent policies in 5.11 Mineral Resources lay out requirements for assessments and

restrictions to ensure this, however, there are none that make reference to mitigating emissions or climate change impacts.

4.3.3 Recommendations

Opportunities to enhance policies in the Official Plan update are highlighted below, with additional sample policies outlined in the below table.

- **Natural Heritage:** Policies identified to enhance and protect the Town's natural heritage system include encouraging stronger coordination amongst upper levels of government and conservation authorities, locate development away from high risk areas such as those subject to flooding, enhance tree canopy and implementing a monitoring program to track success.
- **Agriculture:** Support the long-term stability of the agricultural sector and protect the agricultural economy by support local food production (e.g. community gardens), processing and distribution, and promote diversification and innovation (e.g. indoor and outdoor crop production). Policies also include incentivizing farming practices that mitigate climate change impacts (e.g renewable energy) and enhance the quality of soils and develop partnerships to identify climate risks and solutions.
- **Mineral Resources:** Key policies for the Town's Official Plan update will stem from the collaborative work currently being undertaken by the Region of Peel and the Town, on aggregate resource policy review. Policy direction from this work will include direction to undertake studies on the impacts of mineral aggerate extraction on communities and the natural environment, develop rehabilitation plans of abandoned extraction sites, promote the recovery and recycling of manufactured materials derived from mineral aggregates for re-use in construction and other sectors as a substitute for new mineral aggregates and promote opportunities for the aggregate industry to support the adoption of technologies to reduce operational GHG emissions.

NATURAL RESOURCES, AGRICULTURE, AND MINERAL RESOURCE POLICY OPTIONS
NATURAL HERITAGE
Protecting and Enhancing Natural Heritage System • The Town shall work cooperatively with the Region of Peel, Conservation Authorities, the Province of Ontario, the Government of Canada and private property owners to establish ongoing financial, policy and legislative support for the protection and enhancement of all significant natural heritage features and their associated ecological and hydrological functions within the Core Natural Areas Designation of the Natural Heritage System, in accordance with the policies of this Plan. (Region of Peel, ON) • The Town shall work collaboratively with Conservation Authorities and other land management agencies to implement an ecosystem offsetting process, to offset the adverse impacts of land use change on the natural heritage system through the creation or restoration of natural features. Best management practices, like Credit Valley Conservation

"Ecosystem Offsetting Guidelines" is strongly encouraged to be used to support the development of this process.

- The Town shall work with the Region to ensure conformity with the policies in this section and those of the Region's Greenlands System policies to ensure that approaches are complementary and consistent. (Region of Peel, ON)
- The lands within the Core Natural Areas Designation of the Natural Heritage System Designation cover significant areas of land owned by various public agencies. To ensure that these lands remain in public ownership in the long term and are managed in accordance with this Official Plan, the Town may enter negotiations with these public agencies.
- No development or site alteration shall be permitted on lands adjacent to natural heritage features unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated, through an Environmental Impact Study (EIS), that there will be no negative impact on the natural features or their ecological functions. (Elgin County, ON)
- Adjacent lands are the lands contiguous to, a natural heritage feature or area where it is likely that development or site alteration would have a negative impact on the feature or area. For the purposes of this Official Plan, adjacent lands are defined as all lands within the specified distance of the boundary of natural heritage features and areas as follows: Provincially Significant Wetlands 120m; Significant woodlands 120m; Significant wildlife habitat and wildlife core areas 120m; Significant habitat of endangered species and threatened species 120m; Provincially Significant Areas of Natural and Scientific Interest – Earth Science 50m; Provincially Significant Areas of Natural and Scientific Interest – Life Science 120m; Significant Valley lands 120m; Fish Habitat 120m. Mechanisms to support the buffers shall be considered, such as the Zoning By-law(Elgin County, ON)
- The Town shall work with Conservation Authority partners to further support the natural heritage system adapt to climate change, including, but not limited to, managing natural area connectivity to allow species migration, enhance and protect wetlands, apply buffers around development to minimize impact, restore and protect riparian corridors and protect hubs of biodiversity that can act as climate refuge.
- The Town shall establish a natural heritage acquisition strategy for land securement. (London, ON)

Evaluation and mitigation of climate change risks

- The Town shall work with Regional and conservation authorities to conduct a spatial analysis using updated climate projections to identify areas at risk from natural hazards, in which development shall be restricted and/or prohibited. The Town shall review and re-assess these on a regular basis. For already-developed areas within hazard zones, the Town shall evaluate and implement remediation measures to decrease the level of risk. (*Provincial Policy Statement, 2020* 3.1.3)
- Watershed and sub-watershed studies shall be required to address climate change impacts within their assessments and recommendations. (Muskoka, ON)

Protecting and Enhancing Tree Canopy

- The Town shall work with Regional and Conservation Authority partners to develop targets for Town-wide minimum forest cover and total protected area, to be included in the

implementation and monitoring section. (East Gwillimbury, ON)

- Working with the Region and local Conservation Authorities, the Town shall develop a Forest Strategy and Forest Strategy Implementation Plan as the guiding documents that will determine strategic directions and implementation mechanisms designed to support the policies of this Plan. (London, ON)
    - The Strategy shall include measures to reduce risk and respond to the impacts of climate change, such as invasive species, flooding, and drier, hotter summers
- The Town shall work with partners to enhance and incentivize tree planting on private property across the Town, and establish specific programs in areas identified to have a higher heat vulnerability to protect vulnerable populations.
- Specific tree canopy cover and other targets for specific place types will be developed through the Forest Strategy Implementation Plan and implemented through the Zoning By-law and other by-laws and guideline documents. (London, ON)
- This Plan shall adopt targets for Urban Growth Boundary tree canopy cover in alignment with Regional Forest Strategy development efforts.
    - Progress toward meeting these targets will be monitored as follows:
        - A tree canopy cover analysis will be prepared every five years to determine if tree canopy targets are being achieved.
        - An analysis of the structure, function, and value of the Forest will be prepared at least once every ten years.
        - An inventory update and analysis of trees in boulevards, rural streets, manicured portions of parks and municipal properties will be completed at least once every ten years. (London, ON)
- Development shall generally be directed to areas outside of lands that are unsafe for development due to the presence of hazardous forest types for wildland fire, as defined in the Provincial Policy Statement. Development may be permitted in lands with hazardous forest types for wildland fire where the risk is mitigated in accordance with wildland fire assessment and mitigation standards. (London, ON)
- A minimum tree canopy cover of 30% shall be achieved for parking lots. Appropriate soil volume, drainage, and appropriate technology shall be used to ensure the long-term sustainability of these trees. The Town will incorporate these targets into its Green Development Standards, Site Plan Controls, and By-laws, as appropriate. (London, ON)
- A tree planting plan that maximizes tree establishment across the public and private domain shall be required for all developments and implemented and enforced through appropriate conditions, such as Site Plan Control and Green Development Standards (London, ON)
- New and existing City streets will incorporate a Complete Streets approach and be designed to perform their diverse roles by: … a) ii. Space for other street elements such as trees and landscaping, green infrastructure. 6a) Sidewalks and boulevards will …provide well designed and coordinated tree planting and landscaping (Toronto Official Plan)
- Require tree planting as part of the site design for facilities and developments that offer services or residence to vulnerable populations such as schools, hospitals, longterm care and healthcare facilities. Preservation of existing tree canopy shall be prioritized, where possible. Woodlots, stands of trees or clusters of newly planted trees, should be incorporated into functional spaces (e.g. natural play areas outdoor classrooms or gathering places) either on site or through a pathway connection to adjacent sites, where appropriate and feasible. (Ottawa Official Plan)
- New streets shall, and reconstructed streets shall wherever possible, include street trees that contribute to the urban forest and streetscaping elements appropriate for its context

(Ottawa Official Plan)

- The Town shall explore the development of a Tree Protection by-law to protect and enhance the Town's tree canopy, protect agricultural hedgerows, protect heritage trees (as identified in consultation with staff and citizens) and provide guidelines for tree replacement where appropriate (Resilient Caledon)
- The planning and development approvals process shall give priority to the retention and protection of large, healthy trees over replacement plantings and compensation;
- Planning and development review processes shall support the goals and effective implementation of the Tree Protection By-law, including early consideration of trees, including heritage trees, in application and business processes (Ottawa Official Plan)
- The Town shall encourage the planting of native tree species and vegetation that are resilient to climate change and provide high levels of carbon sequestration, subject to the Town's approval, particularly through new development (Ajax, ON)

Monitoring and Reporting

- A Town-wide Environmental Monitoring Program shall be developed and implemented to assess the effectiveness of the policies, decisions and programs in meeting the objectives of the Natural Heritage System, Forest Management Plan and invasive species. Potential metrics that may be evaluated include: total forest cover, total hectares of lands protected, and an inventory of species at risk. (Guelph, ON)
- Opportunities for collaborating with the CVC, TRCA, and the Ontario Ministries of Natural Resources and Forestry (OMNRF) and Environment Conservation and Parks will be incorporated into the environmental monitoring program (e.g. fisheries, threatened species). (Guelph, ON)
- Short-term, site-specific monitoring may be required as a condition of the planning approvals process and the results will be integrated into the City-wide monitoring program, where applicable. (Guelph, ON)

AGRICULTURE

Protection of Agricultural Industry and Lands

- The Town shall support long term agricultural stability and effective land management by:
    - working with Peel Region and other stakeholders to support and protect agricultural activity and the agricultural economy;
    - incentivizing sustainable agricultural practices that minimize environmental and climate change impacts and support the protection of high-quality agricultural soils in the long-term. (Vaughan, ON);
    - Supporting the repair and retention of existing farm structures, such as barns, that act as valuable habitats for at risk species such as barn swallows and bats, through financial incentives.
- The Town shall support local food production, as well as processing and distribution of affordable local food through food systems planning and collaboration. This may include supporting Agriculture Infrastructure Projects, such as community-built facilities for farmers, developed based on a needs assessment and entrepreneurial support, to provide guidance on business plans and marketing. Examples include: produce centres, shared-use commercial kitchens, and community composting facilities.

- The Town shall exempt new low or zero emissions farm structures from development charges.
- The Town shall work with other jurisdictions to develop agriculture strategies in response to changes in weather and related climate change impacts. (Region of Peel, ON)
- Food production, processing, distribution, storage and farmer's markets are supported throughout the Town. In urban areas and villages, community gardens and indoor and outdoor crop production which does not have an adverse effect on the surrounding area by virtue of appearance, function, risk of rodent infestation or high volumes of vehicular traffic, are permitted (Ottawa Official Plan)
- The Town can support a robust agricultural sector and can enhance food security and build resilience to global impacts by:
  - Protecting agricultural lands;
  - Supporting the diversification and resilience of the agricultural economy, including the importance of indoor and outdoor crop production;
  - Supporting community gardens and enabling produce to be grown, processed and distributed across the Town, including in urban areas and villages; and
  - Encouraging agricultural operations to deploy practices that adapt to future climate conditions and sequester carbon. (Ottawa Official Plan)

On-farm Renewable Energy

- Conduct a feasibility study on local options for on-farm renewable energy systems, including biogas, biodiesel, solar, wind, and geothermal (Resilient Caledon Plan, 2021)
- Alternative energy systems and renewable energy systems shall be permitted within the Agricultural Area except in accordance with provincial and federal requirements. Any such systems not exempt from Planning Act approvals within the Greenbelt shall be subject to the policies of the Greenbelt Plan and shall be designed to minimize disturbance on agricultural operations. (York, ON)

Best Management Farming Practices for Adaptation and Mitigation

- Support agricultural best management practices that improve soil health, mitigate impacts on local ecological systems, reduce runoff and erosion, and improve adaptive capacity (Resilient Caledon Plan, 2021)
- The Town shall work with partners to undertake an assessment of the adverse impacts of projected climate conditions on agricultural activities in Caledon and to establish recommendations to mitigate and resolve these. (Region of Peel, ON)

MINERAL RESOURCES

- The Town shall follow Regional direction to collaborate on conducting studies and address the impacts of mineral aggregate extraction expansions on communities and the natural environment, as well as to identify opportunities for rehabilitation of abandoned extraction areas. (Region of Peel, ON)
- Encourage the recovery and recycling of manufactured materials derived from mineral aggregates for re-use in construction, manufacturing, industrial or maintenance projects as a substitute for new mineral aggregates (Township of North Dumfries Official Plan)
- Require the protection of significant natural environmental features, ground water and surface water resources when considering *Planning Act* applications dealing with mineral aggregate resources (Bracebridge, ON)
- The progressive rehabilitation of aggregate pits and quarries shall be encouraged and in every event the property owner shall be required to implement the site rehabilitation plans approved by the Ministry of Natural Resources before an alternate use of the property is approved by the Town (Bracebridge, ON).
- The Town shall work with the aggregate industry to identify opportunities and support adoption of technologies to reduce greenhouse gas emissions in their operations.

4.4 GROWTH, SETTLEMENT, HOUSING AND EMPLOYMENT

Managing growth is a key component of this Official Plan. The Town's population is projected to more than double over the next 20 years, which results in a critical need to expand infrastructure and services to support growth. From a climate change perspective, to accommodate this growth without jeopardizing the Town's climate change commitments will result in the need to increase density and support compact, mix use and transit supportive communities. More dense development will also reduce encroachment on natural and agricultural lands, which provide essential ecosystem services, act as carbon sinks and enhance the community's adaptive capacity to extreme weather. Lastly, there are also significant municipal servicing efficiencies that can be realized with more dense development.

4.4.1 Policy Direction

The *Provincial Policy Statement, 2020* includes direction to ensure that land use patterns are planned with densities and a mix of land uses that minimize impacts on air quality, address climate change, and promote energy efficiency. This is reiterated in other policy direction, including the *Provincial Growth Plan, 2019*, *Greenbelt Plan, 2017*, and others. In addition, there is direction in Section 2.2 of the PPS, requiring municipalities to improve/restore water quantity and quality using tools including watershed plans, stormwater management practices, and maintain or enhancing vegetative or pervious surfaces.

The *Regional Official Plan* allocates growth to the City of Brampton, City of Mississauga, and Town of Caledon, and includes policy that directs the area municipalities to develop intensification strategies, establish minimum density targets, and monitor growth within the built-up area on an annual basis to ensure that intensification and density targets are achieved. The Region is currently updating its growth allocation, as well as density and intensification targets, and employment, transit, and strategic growth areas.

4.4.2 Existing Official Plan Policies

The Town lays out its strategies for growth, settlement, housing and employment in Section 4.2 "Growth Management," focusing growth within its Rural Service Centres of Bolton, Mayfield West and Caledon East. It adheres to direction for a minimum of 40 percent of residential development occurring within the built-up area. Additional policies include:

- Encouraging/supporting construction of secondary suites;
- Addressing barriers to intensification;
- Achieving compact urban forms within the Designated Greenfield Area;
- Creating a minimum density requirement around any Major Transit Stations when developed; and;
- Promotion of compact, efficient, and complete communities.

4.4.3 Recommendations

Recommendations to enhance existing policies related to population and employment growth include:

- **Stormwater Management and Flooding:** Introduce requirements for stormwater maintenance and incentives for the enhancement of stormwater practices, acquire floodplain lands as public open space or designate lands as an environmental policy area, restrict development away from floodplains and consider natural hazards and risks as part of the development and approvals process.
- **Infill and Density:** Introduce stronger policies to promote mixed use, compact development with secondary suites that provide shopping and employment amenities and active and transit transportation solutions. Promote intensification targets within the existing built-area boundaries that align with ambitious climate change greenhouse gas emission objectives.
- **Low Carbon Development:** Strongly encourage carbon neutral development and resilient design elements in all new residential and employment lands development. Promote carbon neutral and resilient employment lands through identifying innovation districts and enacting ecozone and green roof By Laws.
- **Green Infrastructure:** Introduce more stringent policies to expand and enhance the parkland system, incorporate green infrastructure to manage stormwater, and collaborate with Conservation Authorities and other external agencies to protect and enhance the natural system.

GROWTH, SETTLEMENT, HOUSING AND EMPLOYMENT POLICY OPTIONS

Stormwater Management and Flood Protection

- The Town shall develop an equitable means of financing stormwater maintenance, operation, improvements and replacement as well as flood infrastructure within the existing and future built environment. Through acquisition and agreement, provide for the use of floodplain lands as public open space. (Vaughan, ON)

- The Town shall explore the development of incentives for the installation of stormwater management features, as part of green development standards.

- Potential impacts of climate change that may result in an increase of the risk associated with natural hazards must be considered in all new developments and within the existing built area (*Provincial Policy Statement, 2020* 3.1.3)
- Development shall be restricted and/or prohibited in areas considered at high risk from climate change impacts such fire, flooding and erosion.
- The Town shall take a comprehensive approach to natural hazard management for all development and site alteration proposals considering factors including but not limited to:
    a. risk to life and property;
    b. upstream and downstream impacts and the cumulative impacts of development on the overall hazard level;
    c. climate change effects on the overall hazard level; and
    d. impacts to natural features and areas including their ecological and hydrologic functions. (Vaughan, ON)
- The policies of this Plan are intended to minimize the risks associated with natural hazard lands, and to meet the following objectives:
    a. Identify and delineate floodplain, slope and erosion hazard areas, and prohibit or employment
    b. land use activity in areas where public safety may be affected by natural hazards, in accordance with provincial natural hazard management policies, and regulations under the Conservation Authorities Act.
    c. Minimize the possibility of property damage, social disruption and risk to public safety from natural hazard areas, by restricting the uses and activities permitted on lands susceptible to flooding and/or erosion processes. A Regional Storm event (Hurricane Hazel) or 100 year storm event, whichever is greater, shall be applied when defining hazard flood areas.
    d. Direct development away from natural hazard areas to minimize the risk to public safety and/or property damage.
    e. Provide for limited and controlled development and site alteration on riverine hazard lands within the floodway, including flood and/or erosion control works, minor additions or passive non-structural uses which do not affect flood flows or reduce flood storage capacity. (Vaughan, ON)

Urban Form, Supporting Mixed Use, Infill and Densification

- The Town shall require new neighbourhoods to be designed as 15-minute neighbourhoods. Residential growth within the greenfield portions of the urban area will be planned as complete 15-minute neighbourhoods through the creation of a framework for a compact design, mix of uses and densities, a fully-connected street grid and viable options for sustainable transportation modes. Growth will also proceed in a logical, orderly, and coordinated progression through phasing and in accordance with secondary plans. (Ottawa Official Plan)
- Where access is granted to private land from the public right of way during development and construction activity, the Town shall require protection or reinstatement of all public elements in the right of way, including street trees, pedestrian and cycling facilities, on-street parking and any Low Impact Development stormwater features. Where protection is not possible, the Town will require reinstatement. (Ottawa Official Plan)
    - Town shall encourage the development of appropriate forms of mixed-use development to provide employment and shopping opportunities close to residences, promoting the use of alternate forms of transportation, minimizing travel distances, and reducing greenhouse gas emissions. (Ajax, ON)
    - The Town shall support the target for unit mix, to encourage densification, aligned with the Resilient Caledon Plan. The Town shall also adopt targets for affordable housing and rental units. (Caledon Intensification Strategy)
- A mix of uses, including residential, post-secondary campus, commercial and offices uses shall be required for urban areas and around the future Bolton GO major transit station area (MTSA). (Zoning By-law) (Caledon Transportation Master Plan)
- Secondary suites shall be permitted within single-detached and duplex dwellings. Zoning shall determine minimum lot size, parking and other regulations.
    - Construction of secondary suites and building design that allows for addition of secondary suites shall be encouraged
    - Construction of units with more basic amenities, materials, details etc., shall be encouraged to keep the housing costs low; and
    - Construction of rental units with two or more bedrooms in a range of unit types shall be encouraged (East Gwillimbury, ON)
    - Secondary suits shall not be permitted in area's identified as high risk to climate impacts and hazards.
- The Town shall encourage the remediation and redevelopment of brownfield sites to uses that revitalize neighbourhoods. The Town shall encourage the revitalization, redevelopment, reuse and/or conversion of greyfields, underutilized sites, or regeneration areas within which are included any of the following: brownfield sites, greyfield sites, underutilized sites, or sites within the intensification nodes or major transit station areas. (Brantford, ON)
- The Town will develop a credit that will be provided against development charges for remediation within a Brownfield Sites Community Improvement Project Area. The development charge payable is reduced by an amount equal to the cost of the remediation required for the proposed use of the lands. (Brantford, ON)
- The Town may authorize increases in the height and density of development above the levels otherwise permitted by the zoning by-law in return for the provision of

community benefits. Such community benefits must be over and above those facilities and services that would otherwise be required as part of the Town's standard development review process, standard budgeting process, or that may be provided through the Development Charges By-law. (Ottawa, ON)

- It is a target of this Plan that a minimum of [X%] of all new residential development will be achieved within the Built-Area Boundaries of the Town. Progress in meeting the target will be monitored regularly. (London, ON)

Resilient, Low Carbon Buildings and Developments

- The Town shall develop a green roof by-law requiring green or blue roofs on new commercial, institutional and residential development. This by-law shall establish minimum gross floor areas of new buildings including additions. This by-law shall also include an exemption for sites that include rooftop solar on a proportion of the roof.
- The Town shall encourage innovative design practices and technologies in site planning and building design. The installation of photovoltaic panels on expansive roof structures, such as large-format retail buildings and large-scale institutions and facilities are encouraged. Alternative rooftop designs or interventions that promote climate and energy resiliency such as greenhouses, green roofs or rooftop gardens are also permitted. (Ottawa, ON)
- Applications for Official Plan amendments, Zoning By-law amendments or plans of subdivision shall be required to demonstrate, to the satisfaction of the Town, how the development supports the goals and targets of the Resilient Caledon Community Climate Change Action Plan through the completion of Green Development Standard Checklist and the submission of appropriate studies. Such studies may include, but are not limited to, an Energy Conservation Efficiency Study, a Renewable/Alternative Energy Feasibility Study and District Energy Feasibility Study. (Guelph, ON)
- The Town shall promote Net zero, or Passive House standards for residential and non-residential buildings, through Green Development Standards.
- The Town shall incorporate embodied carbon requirements as part of Green Development standards to reduce emissions from the creation and transport of materials.
- The Town shall consider opportunities to establish a Secondary Plan for an Innovation District, which includes a carbon neutral objective, and follows the recommendations of Caledon's Eco Business Zone Planning and Development Guidelines. (Guelph, ON)
- The Town shall explore opportunities to reduce embodied carbon through building deconstruction and salvage strategies with the Region of Peel in order to reduce the amount of waste and encourage salvage where demolition of existing buildings is approved as part of development applications.
- The Town shall implement an Eco-zoning By-law that highlights design considerations such as landuses, stormwater management and landscaping strategies, low carbon energy system and transportation requirements, and natural system integration(Guide to Eco-Business Zone Planning and Development, Partners in Project Green and Town of Caledon)
- The Town shall strive to grow innovative employment opportunities that support the knowledge-based innovation sector, within compact, mixed-use communities that include the following objectives:
    i. Accommodate a significant share of Caledon's employment growth within Eco-Business Zones

ii. Target the Eco-Business Zone areas as key areas supporting the growth of knowledge-based innovation clusters
iii. Nurture and capitalize on the Eco-Business Zone areas as recreational and tourist destinations
iv. Create a setting that reinforces Eco-Business Zone areas as high-density employment areas that attract provincially, nationally and/or internationally significant employment uses
v. Encourage employment uses within the Eco-Business Zone areas that can showcase cultural heritage resources, where possible.
vi. Support strategic and collaborative economic development partnerships within the Eco-Business Zone areas, and local and regional community.
vii. Encourage a business environment by fostering learning and innovation within the Eco-Business Zone areas.
viii. Encourage economic opportunities for the Eco-Business Zone areas that contribute to innovative and sustainable employment uses that are compatible with a mixed-use environment, including residential uses, where possible.
ix. Support existing industrial uses, recognizing their contribution to the Town's overall employment, and carbon footprint reduction and Regional waste management services. (Guelph, ON)

- The Town shall work with other jurisdictions to urge stringent action on requirements for net zero, climate resilient buildings in the National Building Code.
- The Town shall introduce a local improvement charge by law to support the retrofit and rapid decarbonization of existing buildings. (Resilient Caledon Plan)
- To offset its inherently dense built environment and the high proportion of built-up and hardscaped land, The Town shall consider measures to ensure climate resilience in urban areas including the following attributes in the review of a development application:
  i. Reducing the urban heat island effect through cool or green roofs, light coloured reflective materials, retention of mature trees, tree planting and other urban greening;
  ii. Shaded sidewalks, streets, transit stops, bike lanes and paths to support active mobility and transit during extreme heat through using trees or structures for transit stops;
  iii. High-quality and intensive urban greenspace, such as parks, shaded public realm and access to cooling amenities to provide relief from the heat, especially for those without air conditioning;
  iv. On-site stormwater management to mitigate increased imperviousness; and
  v. Alignment with other climate adaptation policies and procedures identified in this Plan (Ottawa, ON)
- In order to increase efficiency and reduce improper use of resources, the Town shall implement a bylaw that restricts open doors and windows if air conditioning is operating (Kingston, ON)
- The Town shall continue to implement Community Improvement Plans that enable the delivery of programs that can award grants, loans, refunds, exemptions, tax increment-equivalent financing, and/or other assistance or incentives to existing businesses that lead to reduced emissions and improved use of energy and water. (Kitchener, ON)

Green infrastructure

- The Town shall work to reduce identified parkland deficiencies, where feasible, through the following measures:
    i. by conducting further studies to determine which parks have potential for expansion and where such expansion is most desirable;
    ii. by acquiring additional land to enlarge existing small parks, where appropriate;
    iii. by acquiring vacant infill sites to create new small parks;
    iv. by acquiring redundant school properties or parts thereof;
    v. by improving the quality and usefulness of existing parks through design and development;
    vi. by encouraging and working with the local School Boards to upgrade the design and development of some of their open space areas;
    vii. by developing portions of certain community or regional parks to meet neighbourhood needs;
    viii. by identifying high priority areas for future park development and for the establishment of urban squares; and
    ix. by enhancing connections between park and open space areas. (Guelph, ON)
    x. developing an Open Space Strategy, to strategically plan for future park space expansion.
- The Town shall require parkland dedication or cash-in-lieu as a condition of development, consent or subdivision proposals in amounts that align with current Provincial Community Benefits Charge rules. (Guelph, ON)
- The Town shall require parkland dedication as a condition of development, consent or subdivision proposals in an amount up to:
    i. 2% of the land for commercial or industrial purposes;
    ii. 5% of the land or one hectare for each 300 dwelling units for residential purposes; and
    iii. 5% of the land in all other cases. (Guelph, ON)
- The Town shall require a green infrastructure approach to development, including the use of low impact development techniques (LIDs), to improve stormwater management (Green Development Standards). (East Gwillimbury, ON)
- The use of large, land intensive stormwater management ponds shall be minimized and shall only be used if LID options are not appropriate in the area or are not able to accommodate all of the anticipated stormwater flows. (East Gwillimbury, ON)
- The Town shall work with Conservation Authorities, rural landowners, community groups, and other interested parties on a strategy to manage and protect forests and hedgerows in rural and urban areas. This work will include implementing best management practices for Town-owned street trees and forests. (Ottawa, ON)
- The Town shall establish minimum protected areas within designated growth areas ensuring connection to natural features (Ottawa Official Plan)
- The Town shall design parks that contribute to the quality of life and respond to climate change. To adapt to climate change, provide cooling amenities in park design such as splash pads, wading pools, shade trees and structures where possible. (Ottawa ON)
- The Town shall explore opportunities to partner with utilities and rail owners to enhance green infrastructure along hydro and rail corridors.

4.5 TOURISM, HERITAGE, AND HEALTHY COMMUNITIES

Much of Caledon's tourism industry consists of agri-tourism and eco-tourism, that face similar threats from climate change impacts as agriculture and natural systems, such as increased survivability and spread of invasive species and pests, more unpredictable weather patterns, and drier summer conditions. Human health will increasingly face impacts from climate change including challenges from vector borne disease, and ailments experienced from extreme heat and poor air quality. Lastly, our culture and heritage assets risk degradation from extreme weather and heat.

4.5.1 Existing Official Plan Policies

The current Official Plan does not include any policies addressing climate change impacts related to tourism, or heritage.

With respect to health, while not specifically referencing climate change, policies for the Mayfield West Secondary Plan area include:

- 7.14.21.1 All development applications in the Plan Area shall require, as part of a complete application, the completion of a Health Assessment. The Health Assessment must be completed in accordance with the Region of Peel's Healthy Development Assessment, in consultation with the Region of Peel.
- 7.14.21.2 The Town shall conduct Health Assessments on municipally developed, owned and operated public buildings, public squares, and open space projects in the Plan Area.

Additional policies commit the Town to ensuring that development occurs in a manner that considers the health of residents. The Town also has an existing Idling Bylaw that prohibits vehicle idling for more than two minutes that was enacted for the purpose of enhancing air quality for the health of residents and the environment, as well as mitigating unnecessary emissions.

4.5.2 Policy Direction

Provincial direction through *Growth Plan for the Greater Golden Horseshoe,* and Regional policies provide direction to reduce risks from climate change impacts, and to promote healthy communities, however, there is little direction to consider impacts of climate change on community health and that of vulnerable populations, which should be strongly considered in the Official Plan Update.

4.5.3 Recommendations

It will be important for the Official Plan update to enhance policies related to protection of tourism and cultural heritage resources, and promote healthy communities that account for climate change. Recommendations for the Official Plan Update include:

- **Enhance Human Health:** Incorporate policies that recognize the connection between human health, land use and infrastructure decisions, ensure access to the natural heritage system due to physical and psychological well-being, require new developments to undertake health assessments and recognize risks from climate risk to human health (e.g. extreme heat) and develop remediation plans.
- **Protect Tourism and Heritage:** Introduce policies that recognize risks to Tourism and cultural heritage resources, from climate change and develop mitigation strategies.

TOURISM, HERITAGE, HEALTHY COMMUNITIES & CULTURE POLICY OPTIONS

Mitigating climate impacts on health

- This [Official] Plan recognizes that there is a relationship between land use, infrastructure and public health that affects the vitality and resilience of the community. Elements such as built form, urban design, road and trail networks, open spaces, urban forests, the public realm, the natural heritage system and infrastructure shape citizens' physical and psychological well-being. (Ajax, ON)
- The Town shall identify climate change impacts which may more adversely affect public health and safety in the community, prioritizing impacts on vulnerable populations including older residents, and put in place safeguards where needed. (Ajax, ON)
- The Town shall work with Region of Peel and other agencies to understand the impacts of climate change on the health and well-being of residents. (York, ON)
- The Town shall require Health Assessment requirements for complete development applications, and shall conduct Health Assessments for municipal buildings, relevant infrastructure projects and lands, that consider current and projected impacts from climate change. (Caledon- updated with climate change consideration)
- The Town recognizes that poor air quality and the urban heat island effect have adverse effects on both human health and the natural environment. Accordingly, the Town shall:

    a. Participate in inter-municipal clean air initiatives;
    b. Support incremental reduction of greenhouse gas emissions and air pollutants generated by municipal facilities and activities;
    c. Define urban heat island action areas for targeted greening;
    d. Promote tree planting and innovative green spaces, such as green roofs in new and existing development, to reduce energy use through shading and sheltering;
    e. Promote the installation of artificial shade, such as covered walkways, awnings and canopies, in appropriate locations;
    f. Promote greater use of permeable surfaces and pervious pavement in areas such as parking lots and sidewalks, where appropriate, as well as by conducting pilot projects, and participating in public education programs;

g. Reduce single-occupancy vehicle use by promoting alternate forms of transportation to single vehicle use, such as HOV lanes, transit, walking and cycling;
h. Increase awareness and educate the public about negative health effects and environmental costs of activities that generate air pollution;

- Encourage the provision of renewable energy sources (i.e., other than fossil fuels) to facilitate the use of alternate modes of travel, such as by providing pay-as-you-go electrical outlets for electric-powered bicycles, scooters and vehicles; and, Encourage the provision of hybrid and electric vehicle servicing in new or redeveloping motor vehicle service and repair facilities. (Ajax, ON)

Resilient tourism and heritage

- The Town shall identify tourism and cultural heritage resources at risk of damage from climate change impacts, and implement measures to mitigate these. This process shall consider master plans from Conservation Authority partners and the Ministry of Natural Resources.
- The Town shall explore an increase to financial incentives for properties designated under the *Ontario Heritage Act* to encourage property owners to protect cultural heritage resources from the impacts of climate change and to retain the embodied energy and non-renewable materials in heritage buildings. Increased incentives could further assist with wood window restoration, roof and foundation repairs, larger-scale conservation projects and repair of built heritage resources such as barns.

5 Conclusion

With significant growth of the Town's population over the next 20 years, and an emissions profile is likely to follow the same trajectory, (if no additional mitigating measures are introduced), the Town of Caledon must strongly embed climate change as a core objective into the updated Official Plan. The ability of the Official Plan to achieve this will dictate whether the Town is able to align with global science on climate change and limit temperature rise within 1.5C of pre-industrial levels. Fortunately, the Town has the unique opportunity to significantly influence its emissions profile and adaptive capacity through land-use decisions on how and where the Town grows, most significantly in the ability to ensure its growing population is accommodated within compact, mixed-use, transit supportive communities that are served by low carbon energy systems.

The Town of Caledon is not new to climate action effort, having been praised for its early participation in municipal climate action programs, as well as for its adoption of climate policies in its existing Official Plan. As the Town embarks on its Official Plan Update, this discussion paper identifies opportunities to incorporate climate change policies that are bold, current, and responsive to the great challenge that we face.

Appendix 1 Planning Policy Tools to Support Climate Action

Outlined below is an overview of the planning policy tools that can be used to support climate change mitigation and adaptation objectives, and support the implementation of the policies proposed for the Official Plan Update.

Planning Tool	Description	Climate Objectives that can be supported
Official Plan	The Official Plan represents the primary policy document guiding a municipality's land use and growth management. This makes it the overarching policy tool to ensure that growth, density and land use support climate change objectives. The Official Plan directly affects the design of communities and their infrastructure requirements. It establishes the basis for how people will live, work, play, access their needs, and move around.	Land-use decisions directly impact the ability for a community to reduce greenhouse gas emissions and adapt to changing climate patterns. It is essential for climate change considerations and greenhouse gas reduction targets be embedded into the core of an Official Plan with integrated policies throughout. Policy implementation that is focused on climate change strategies in areas including: • Growth Management and Complete Communities • Active Transportation and Transit • Energy Efficiency and Renewable Energy • Air Quality • Infrastructure (water, wastewater waste management) • Natural Heritage Systems • Agriculture • Source Water Protection • Public Health • Cultural Heritage Conservation
Protection of Settlement Boundaries	The Region of Peel Settlement Area Boundary Expansion for the 20511 Official Plan Review will define locations for urban expansion. This will allocate growth for the Town of Caledon. Expansion of settlement boundaries are subject to the Municipal Comprehensive Review (MCR) process, or comparable review of the policies of the Growth Plan for accommodating very small-scale expansions outside of a comprehensive review.	This process ensures that intensification and other complete community objectives that support climate change objectives are integrated into growth considerations. This policy lever can help to reduce vehicle dependency and maintain natural and agricultural areas that store carbon and buffer against extreme weather.
Application Review Process	The complete application process provides an opportunity to add certain expectations and background studies to the approval process for Official Plan Amendments, Subdivisions and Site plan approval and Zoning By-law Amendments. The Development Application Review Team (DART) provides the pre-consultation review process for applications, as required by the Planning Act.	This process can be used to define priority areas and requirements to address climate-based impacts and can be an opportunity to review more site-specific benefits for climate change action. Examples of additional studies required may include, climate change lens assessment, low carbon transportation (i.e. cycling, walking, transit), feasibility of district energy, preservation and enhancement of natural systems, and net zero pathway and performance metrics associated with green development requirements.
Community Improvement Plans	Community Improvement Plans are an opportunity to designate urban areas to support revitalization and economic development. The municipality can establish objectives and include actions such as updated patterns of development and acquisition of land	Community Improvement Plans can be an important tool used to offer various grants and loans to private property owners and businesses that align with climate change objectives (i.e. stormwater management, low carbon transportation, renewable energy and energy efficiency).

Zoning By Law	The Zoning By-law implements the objectives and policies of a municipal Official Plan.	The zoning bylaw can reduce emissions through incorporating energy efficiency standards and passive design (i.e. building orientation), renewable energy, solar energy right to light by law (protect ability to produce rooftop solar from surrounding land uses), eco zone by law to encourage eco business districts, and alternative transportation requirements (i.e. reduced parking, bicycle infrastructure). Adaptation measures including minimum landscape requirements, stormwater charge, green roofs, and tree planting and prohibit development inside of floodprone areas can minimize risk related to flooding and extreme heat. Zoning by laws also can promote greater mix of uses within specified areas in support of the '15 minute' neighbourhood concept.
Site Plan Control	This is a tool to ensure that land development is designed appropriately, safe, functional and minimizes impacts on neighbouring properties.	This tool can be used to ensure green infrastructure/low impact development to manage stormwater, tree plantings to decrease localized temperatures, and promote alternative energy and transportation solutions.
Community Benefit	There are new benefit provisions under new proposed regulations in the Planning Act, replacing section 37 and where municipalities are collecting community benefit charges instead of basic parkland provisions. Community benefits can be charged at the municipality's discretion, where applicable, to fund capital infrastructure for community services. Services include libraries, parkland, daycare and recreation facilities.	Municipalities can collect development charges to fund net zero municipal buildings, low/zero carbon vehicles, green infrastructure to manage stormwater. The implementation of a future community benefit provision should consider a development strategy that is tied directly to passive design strategies for sites, as part of the performance requirements for development. New regulations surrounding community benefits are an opportunity to look at how integration of district energy or other climate related strategies, such as energy objectives, might be achieved.
Plan of Subdivision	This is a legal document that shows the boundaries of a building, location and width of streets and sites of any schools or parks.	The Plan of subdivision approval process is an important tool for achieving neighbourhood design features and infrastructure that meet the policy objectives for climate change. This should be done through the requirement of passive design, complete streets, parks and low impact design. It is also a collaborative tool for including new infrastructure, such as district energy, which can be established through conditions of the subdivision plan and associated agreements. Conditions of approval may also include easements or land dedication for natural features which can store carbon and reduce stormwater management needs.
Parkland Dedication	Municipalities can adopt policies requiring developers to provide land, or cash-in-lieu for municipal parks. The rate is set based on the total units in the development, and the intended density of the development location.	Park space provides an important neighbourhood feature and function that can include co-benefits for climate change. The opportunity to allow for co-benefits in park and open spaces, such as underground energy infrastructure should be considered to future-proof spaces where such uses are not currently contemplated for neighbourhoods. Municipalities can adopt policies requiring developers to provide land, or cash-in-lieu for municipal parks. The rate is set based on the total units in the development, and the intended density of the development location. Cash in lieu requirements can be exchanged for sustainability features that address climate change, including green roofs, permeable surfaces, tree planting, renewable energy technologies, and water conservation measures.
Easements	Easements are a legal interest in land that provides limited rights to the beneficiary over another property owners lands for specific purposes. Municipalities have easements on private properties to ensure the necessary rights to access and maintain municipal infrastructure.	The ability to enter into agreements as conditions of subdivision approval provides a key tool for advancing alternative infrastructure, such as district energy systems. Where the Town is approving subdivision agreements for new neighbourhoods, the approach of inclusive collaboration by the municipality can include the use of easements to support solutions for pilots or implementing new technology, such as non-regulated district energy systems or renewable energy installations. The municipality needs to have a process for engaging widely with staff and in review of design standards for public spaces, such as road right of ways, parks and public realm and open spaces to consider feasibility of integrated use solutions that may be accommodated in public spaces. Municipal Access Agreements and Easements provide forms of agreement to advance projects. Identifying potential areas for consideration where the municipality would encourage this type of infrastructure consideration would support the process.

		Easements can also be used to ensure land dedication for green spaces, natural features and agricultural activities.
Green Development Standards	Green Development Standards are voluntary or mandatory standards implemented by municipalities to encourage sustainable community design. These Standards are integrated into the planning approvals process for development applications and can be used to create incentives for developments that adhere to environmental, social and economic benefits.	Green Development Standards are increasingly providing a performance-based approach to securing climate supportive requirements. The Toronto Green Development Standards are Provincially the most stringent sustainable design requirements for new private and city-owned developments. The Standard consists of 4 tiers of performance measures with supporting guidelines that promote sustainable site and building design. Tier 1 of the Toronto Green Standard is a mandatory requirement of the planning approval process. Financial incentives are offered through the Development Charge Refund Program Version 3 or Version 2 for planning applications that meet higher-level voluntary standards in Tiers 2 to 4. Sustainable building technologies and materials, which also satisfy the Ontario Building Code, may include: • sustainable, durable and low-maintenance building design and operation • energy and water efficiency • attention to indoor and outdoor air quality • use of recycling and conservation in building materials and products Changes to provincial legislation and policy mean that development-related Green Development Standards must be updated periodically to align with the performance metrics for climate action set out in provincial plans and policies. The consideration of passive house equivalent standards and Life Cycle Assessment for low carbon construction as well as flexible building design and zoning are all emerging strategies that would further support climate objectives.
Design Guidelines	Design guidelines provide design standards for development, that consider community character, creativity, natural environment, and current and future development and architectural needs and designs.	Design guidelines can be used to promote complete streets, encourage consideration of renewable and low carbon energy opportunities and inclusion of climate resilient grey and green infrastructure.
Development Permit System	This is an approval framework that allows municipalities to address local planning issues, promote community building and streamline development. This system streamlines and expedites the planning process by combining zoning, site plan and minor variance into a single application for approval.	This system can require demonstration of climate resilient measures under projected climate scenarios (i.e. flood preparedness, back up power, reflective surfaces), and provide conditions for the preservation of vegetation and natural features. These systems can also use innovative tools, such as health assessments, to understand the health impacts related to current and future climate change conditions of the proposed development/land use decision.