



Community Climate Change Action Plan – Implementation Table

Timing	Budget
Ongoing: already initiated	N/A: covered by existing staff capacity or operating budgets
Immediate: within the next year	\$: Low Cost (\$0 - \$100,000)
Short: 2-3 years	\$\$: Medium Cost (\$100,000 - \$500,000)
Medium: 4-6 years	\$\$\$: High Cost (\$500,000+)
Long: 7-10 years	

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
SMART GROWTH							
1) Establish climate friendly land use and building policies							
Integrate climate change into land use planning policies and processes, including the Official Plan update	<ul style="list-style-type: none"> Draft a climate change discussion paper as part of the Official Plan review process to propose and gain feedback on climate-supportive planning policies Educate the public on the links between municipal land use decision-making and climate change Develop education and training for Committee of Adjustment members on climate change and planning/development 	Short	<ul style="list-style-type: none"> Planning tools¹ By-laws Green development standards (GDS) Incentives/rebates 	Town (Planning, Development, Finance, Economic Development, Energy and Environment)	<ul style="list-style-type: none"> Relevant Town departments Region of Peel Landowners and Developers Utilities Trades Clean Air Partnership The Atmospheric Fund 	<p>\$\$</p> <p>Staff time to update OP and relevant standards/ guidelines includes appropriate wording and policies</p> <p>Staff time and capital costs to develop the standard and update development processes</p>	<ul style="list-style-type: none"> Climate targets and by-laws adopted Policies updated/amended Building energy performance Instances of building standard certification (e.g. Passive House) Greenhouse gas emissions (tonnes/year) Total building energy consumption (MWh/year) Number of secondary plans or new developments built to the green development standard
Develop and apply a green development standard to ensure all new residential buildings are net-zero and climate resilient by 2030, and to promote efficient, green and livable community design	<ul style="list-style-type: none"> Review the Town's existing Development Charge rebate program for commercial buildings and explore options to enhance it and/or incorporate it into a broader community-wide standard Update development planning policies and relevant guidelines/standards (e.g. urban design guidelines, stormwater guidelines, etc.) to include in the new standard Consider requirement for a "climate impacts" section in all development applications submitted to the Town, including an assessment for how a development could reach net zero by 2030 	Immediate					

¹ Planning Tools include Official Plan, secondary plans, zoning policies/by-laws, development applications, development charges, design guidelines

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
2) Protect communities from flood risks							
Prohibit or restrict new development in high risk flood zones, maintain sufficient setbacks along water bodies, and enhance flood resiliency in urban areas through planning and zoning	<ul style="list-style-type: none"> Work with Conservation Authorities to determine the most vulnerable watercourses and management options Conduct a basement flood study to determine areas at high risk for groundwater flooding, and consider restricting new basement construction in high risk areas Review zoning by-laws to discourage increases in impermeable surface area on private lots 	Medium	<ul style="list-style-type: none"> Stormwater Management Master Plan Green Development Standards Planning tools Risk and Return on Investment Tool (Credit Valley Conservation) 	Town (Planning and Development, Parks, Stormwater)	<ul style="list-style-type: none"> Town (Energy and Environment) Region of Peel Conservation Authorities² Developers 	<p>\$</p> <p>Staff time for plan and policy updates</p>	<ul style="list-style-type: none"> ha of restricted/unrestricted flood-vulnerable area Permeable to non-permeable surface area ratio
Enhance the amount of green space/permeable surface incorporated into all new communities to provide green infrastructure, stormwater management, and recreation services	<ul style="list-style-type: none"> Maintain sufficient landscaped area on private properties Increase the viability of urban street trees (see also Agriculture and Natural Systems) Ensure adequate parkland is included in all new subdivisions Inventory the Town's natural assets 	Short					
3) Promote the development of compact, complete communities that are walkable, bikeable, transit friendly, and energy efficient							
Support the development of eco-districts to support sustainable commercial areas	<ul style="list-style-type: none"> Update the Town's Eco-Industrial Guidelines and incorporate into the Official Plan Update, and relevant zoning bylaws Work with local businesses and Town Planning staff to identify potential eco-district locations and collaborations 	Ongoing	<ul style="list-style-type: none"> Planning tools By-laws Green Development Standards Transportation Master Plan West Bolton SNAP Settlement Area Boundary 	Town (Planning, Development, Regulatory Services, Transportation)	<ul style="list-style-type: none"> Town (Energy and Environment) Developers/Builders/Real Estate Partners in Project Green 	<p>\$</p> <p>Staff time to update development processes, and engage with developers and the community</p>	<ul style="list-style-type: none"> Housing starts Dwellings per hectare Floor space ratio New building type ratios Amount of growth occurring in settlement areas Amount of growth occurring in built boundary
Prioritize mixed-use, compact community design that enables active transportation and transit	<ul style="list-style-type: none"> Focus residential and commercial development in infill/intensification and transit-served areas (such as Bolton and Mayfield West) Apply energy efficiency and climate change criteria, and require net zero plans for new development Decrease dwelling sizes and share of new single-family detached houses 	Ongoing					

² Conservation Authorities include Credit Valley Conservation (CVC) and the Toronto and Region Conservation Authority (TRCA)

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
Increase the share of sustainable and active travel modes, particularly in urban areas	<ul style="list-style-type: none"> • Prioritize development in areas well connected by transit, and with a mix of uses (residential, commercial, employment), and set affordable housing targets near transit hubs • Require active transportation infrastructure (sidewalks, bike lanes, bike racks) in new developments and upgrades • Develop a Complete Streets policy and design guidelines to support connectivity and continuity of on-road and off-road transportation networks, for all road and trail classifications throughout • Maintain and build upon drive-through restrictions in congested areas 	Ongoing	Expansion (SABE) Study				
Deliver Transportation Demand Management and education programs	<ul style="list-style-type: none"> • Continue implementation of the West Bolton SNAP project, including improving active transportation amenities • Work with schools, businesses, and advocacy groups on webinars, workshops, and other activities to promote active transportation 	Ongoing					

SUSTAINABLE COMMUNITIES

4) Retrofit homes, institutions, and commercial buildings to be net zero and climate resilient by 2040

Develop and deliver a residential building retrofit program to fast-track deep energy and climate resilience retrofits	<ul style="list-style-type: none"> • Explore design options for a retrofit program for Caledon residents, considering scope, market uptake, cost, financing models, and partnership/third-party delivery opportunities • Establish minimum performance standards for existing buildings and renovations, and develop a technical retrofit guideline • If required, pass an appropriate by-law enabling the program (e.g. LIC by-law) 	Short	<ul style="list-style-type: none"> • CIP Grant Program • GreenBiz Caledon Program • Property Assessed Clean Energy (PACE) Program or Local Improvement Charge (LIC) Program 	Town (Planning and Development, Finance, Building Services, Economic Development, Energy and Environment)	<ul style="list-style-type: none"> • Peel Climate Change Partnership • Clean Air Partnership • Federal/provincial retrofit programs • Utilities • Trades • Residents and Businesses 	<p>\$\$\$</p> <p>Staff time for program development and outreach. Retrofit incentives/grants</p>	<ul style="list-style-type: none"> • Buildings retrofit • Building energy performance • Total buildings energy consumption (MWh/year) • Retrofit program participation rate • Average GHG savings per building • Total GHG emissions (tonnes/year) • Average energy savings per building
Review and enhance the Community Improvement Plan (CIP) program to enable retrofits to commercial buildings	<ul style="list-style-type: none"> • Review energy efficiency and landscaping program criteria to maximize GHG reduction and adaptation opportunities • Review project funding caps and eligibility requirements • Educate and raise awareness about the program within Caledon's business community 	Immediate					

5) Reduce community-wide waste generation and improve water conservation

Work with Peel Region and other partners to reduce waste generation and increase waste diversion throughout the community	<ul style="list-style-type: none"> • Coordinate with the Region and other partners on waste disposal strategies such as education, incentives/disincentives on certain types of waste, organics diversion, etc. • Set annual waste reduction and diversion targets that progress towards a high level zero waste goal, and report on progress • Promote food donation and reusable takeout container programs 	Long	<ul style="list-style-type: none"> • Region of Peel Waste Management Plan • Town Green Fund Program 	<ul style="list-style-type: none"> • Region of Peel and Environment, Facilities, Recreation) • Town (Energy and Environment) 	<ul style="list-style-type: none"> • Town (Energy and Environment) • Resident and businesses • Schools 	<p>\$</p> <p>Staff time for outreach and engagement,</p>	<ul style="list-style-type: none"> • Town, Residential, and Commercial waste generation and diversion rates
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Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
Support water conservation in the community through education and awareness campaigns.	<ul style="list-style-type: none"> Work with CA's to minimize groundwater contamination through well and septic health programs in rural areas, road salt management, and other initiatives Work with Peel Region and CA's on protecting groundwater supply, particularly in anticipation of drought periods 	Long	<ul style="list-style-type: none"> Corporate GHG Reduction Framework 		<ul style="list-style-type: none"> Ontario Waste Management Association 	development of plans/strategies	<ul style="list-style-type: none"> Waste reduction and diversion programs implemented
Reduce waste and improve waste diversion at municipal facilities	<ul style="list-style-type: none"> Ban single-use plastics at all Town facilities Ensure waste bins are easy to use, install signage, and educate Town staff and residents on waste reduction and diversion at facilities Measure waste performance before and after retrofits have been completed 	Long					
6) Develop and enhance emergency response plans and protocols so that all Town residents, staff, businesses, and community organizations are prepared for climate-related emergencies							
Review and update the Town's emergency response plans and protocols to consider climate impacts and extreme weather	<ul style="list-style-type: none"> Create site specific and hazard specific plans for emergency outreach, response, and evacuation protocols, including identifying areas most vulnerable to flooding Investigate options to offset higher operating costs in emergency services and infrastructure investments due to extreme weather events, such as an extreme weather reserve fund or climate disaster bonds 	Short	<ul style="list-style-type: none"> Emergency response protocols Business Continuity Plans Community Emergency Response Plan Community Handbook for Flood Vulnerable Areas TRCA online platform for residents Conservation Authority Early Warning Systems 	<ul style="list-style-type: none"> Town (Fire and Emergency Services, Health and Safety, Energy and Environment) Conservation Authorities Region of Peel 	<ul style="list-style-type: none"> Town (Operations, Engineering, Communications, Stormwater, Finance, other departments) Conservation Authorities Office of the Fire Marshall and Emergency Management 	<p style="text-align: center;">\$</p> <p>Staff time to update plans and protocols, and conduct outreach and education</p>	Emergency plans/protocols updated or created
Improve emergency management communication and coordination	<ul style="list-style-type: none"> Work with Peel Region and Conservation Authorities to review and enhance early warning systems in light of climate-related emergencies Explore different communications channels to alert community members of major weather emergencies (e.g. working with local radio stations) 	Ongoing					
Develop an operations procedure to prepare for and respond to flood emergencies	<ul style="list-style-type: none"> Map flood and ice jam prone areas, Implement proactive response measures (i.e. culvert clean outs) Review equipment acquisition/upgrades to ensure the Town has the right equipment Review traffic control and detour routes 	Ongoing					
Continue education and training to prepare Town staff for climate impacts	<ul style="list-style-type: none"> Integrate climate change impacts into the Town's Business Continuity Plans, and continue emergency training for staff Modify work policies and protocols (e.g. schedules) for outdoor workers (i.e. operations, recreation and camp staff) if needed and ensure outdoor workers are well informed and trained to protect from extreme heat, diseases and pests 	Ongoing					

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
7) Green Caledon's economy by supporting existing businesses in becoming low carbon and climate resilient, attracting new businesses, and diversifying the Town's energy supply							
Develop programs and education to support businesses in reducing GHG emissions and increasing adaptive capacity	<ul style="list-style-type: none"> Deliver the GreenBiz Caledon pilot program starting in 2021 to support businesses to develop and implement climate change measures that enhance their business Develop business-specific information and resources about climate impacts, available supports, and energy reducing measures 	Ongoing	<ul style="list-style-type: none"> Community Improvement Plans Green Development Standards Development Charges GreenBiz Caledon Economic Development Strategy 	Town (Economic Development, Energy and Environment, Planning, Development)	<ul style="list-style-type: none"> Region of Peel Downtown Bolton Business Improvement Area Partners in Project Green Caledon Businesses 	<p>\$</p> <p>Staff time for program development and implementation</p>	<ul style="list-style-type: none"> # of participating businesses efficiency/resilience upgrades made
Integrate climate change and energy management into the Town's Economic Development Strategy and its implementation	<ul style="list-style-type: none"> Support energy efficient and resilient new building design and retrofits of existing buildings, to help businesses save energy costs (see also Resilient Buildings and Energy Systems) Explore opportunities for district energy and renewable energy sources in the institutional, commercial and industrial sector 	Medium					
8) Enhance community capacity by engaging and empowering climate action from residents, businesses, community groups and schools							
Prepare and support vulnerable populations for and during extreme weather and heat events	<ul style="list-style-type: none"> Map where vulnerable populations are in Caledon (including seniors, children, and rural/isolated residents) relative to potential impacts, evacuation routes, and community centres Partner with community and faith groups that can help establish 'hubs' and support vulnerable populations 	Short	<ul style="list-style-type: none"> Emergency response protocols Community Emergency Response Plan Community/School Green Fund Peel Public Health and Education Conservation Authority 	<ul style="list-style-type: none"> Town (Energy and Environment, Fire & Emergency) Region of Peel (Public Health) 	<ul style="list-style-type: none"> Town (Stormwater, Communications) Health Authorities Region of Peel Conservation Authorities Caledon Community Services Other community organizations Schools and School Boards Seniors' homes 	<p>\$</p> <p>Staff time for vulnerability assessments, plan development and outreach and engagement</p>	<ul style="list-style-type: none"> # of engagement events held #/list of plan(s) and policies developed or updated # of Green Fund projects implemented and financial resources provided
Educate residents and businesses about potential climate change impacts, what they can do to prepare, and how they can reduce their carbon footprint.	<ul style="list-style-type: none"> Develop a toolkit for residents, businesses and schools to better understand the impacts of climate change on: <ul style="list-style-type: none"> Health (heat stress, ticks, disease) Flooding (how to protect your property) Extreme weather (ice storms, windstorms, etc.) Enhance communications to residents and businesses before and after major events. Include communications to keep people away from water hazards, especially during high water or flood conditions 	Ongoing					

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
Review and enhance Caledon's School and Community Green Fund programs to build community capacity to address climate change	<ul style="list-style-type: none"> Review program criteria and application process Explore ways to expand the program through greater community involvement 	Short	<ul style="list-style-type: none"> education programs Stormwater Outreach Collaborative West Bolton SNAP 		<ul style="list-style-type: none"> Office of the Fire Marshall and Emergency Management 		
Engage students and youth in Caledon on Planning and local climate action	<ul style="list-style-type: none"> Participate in the Innovate MY Future challenge to empower young people to develop community-based climate action projects 	Ongoing	<ul style="list-style-type: none"> Communications channels (social media, website, radio, news, etc.) 				

AGRICULTURE AND NATURAL SYSTEMS

9) Support a resilient food and agriculture sector across Caledon

Develop an agriculture strategy to help farmers adapt to changing climate conditions and access new opportunities	<ul style="list-style-type: none"> Conduct a study to assess the vulnerability of the local food and agriculture sector in Caledon to climate impacts - identify vulnerabilities in production, distribution and processing. Work with local, regional and other representatives to create and implement an Agriculture Plan to support the long-term viability of the agriculture sector in Caledon. Activities could include: <ul style="list-style-type: none"> Expanding on-farm diversified uses Farm incubator programs for new farmers Regular updates on local climate projections and potential impacts for the agriculture sector Studying skilled farm labour availability 	Long	<ul style="list-style-type: none"> Environmental farm plans CVC Site Assessment Tool Official Plan Development charges 	<ul style="list-style-type: none"> Town (Planning and Development, Economic Development, Energy and Environment) Farmers/ agriculture organizations 	<ul style="list-style-type: none"> Agriculture organizations and Farmers Conservation Authorities Ontario Ministry of Agriculture, Food, and Rural Affairs 	<p style="text-align: center;">\$</p> <p>Staff time and capital costs for vulnerability assessments and strategy development</p>	<ul style="list-style-type: none"> MW of on-farm renewable energy Uptake of on-farm best management practices (from agricultural census reports) Farm support programs implemented
Support community agriculture initiatives to enhance local food security	<p>Initiatives may include:</p> <ul style="list-style-type: none"> Farm-to schools/businesses/restaurants/grocery store programs, including web-based initiatives Urban agriculture policy for Caledon to supporting urban agriculture initiatives like community and back-yard gardens Establishment of a permanent or semi-permanent Farmer's Market in Caledon to help local farmers get their products to local markets Education or community events focused on climate smart food 	Medium					

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
Support agricultural best management practices that improve soil health, mitigate impacts on local ecological systems, reduce runoff and erosion and improve adaptive capacity	<ul style="list-style-type: none"> • Work with representatives from the agricultural community and Conservation Authorities to support and promote low carbon, resilient farming practices, including those that minimize stormwater runoff and associated contamination issues (i.e through manure management, drainage activities, etc.) • Investigate potential incentives for programs that reward farmers for the environmental services that they provide to reduce runoff and contamination and improve soil health • Support on-farm renewable energy projects such as solar and biogas (see also Resilient Infrastructure and Energy) • Exempt new energy efficient farm structures from development charges 	Medium					
10) Protect Caledon's natural and agricultural lands							
Enhance protection of agricultural lands, natural features, and water resources through planning and zoning policies	<ul style="list-style-type: none"> • Establish a Town-wide target for minimum protected area within designated growth areas and incorporate into Official Plan. Ensure connectivity of natural features and farmland. • Work with Conservation Authorities and agricultural organizations to determine natural/riparian areas of high value, as well as prime agriculture land, and maintain sufficient setbacks from natural features when siting new development 	Ongoing	<ul style="list-style-type: none"> • Planning Tools • Green Development Standards • Easements, buffers • Region of Peel Greenlands Securement Program • Rural Land Classification • By-laws • Park management plans/ procedures • Municipal Natural Asset Initiative (CVC) • Town Green Fund 	<ul style="list-style-type: none"> • Town (Planning, Development, Parks, Energy and Environment) • Conservation Authorities • Region of Peel 	<ul style="list-style-type: none"> • Environmental non-profit organizations • Landowners/ Farmers • Residents • Developers/ builders • Peel Climate Change Partnership 	<p style="text-align: center;">\$</p> <p>Staff time to develop and implement by-laws, update park management procedures</p>	<ul style="list-style-type: none"> • Total ha of protected land • ha of agricultural lands • ha of protected agricultural lands • # of projects implemented (monitoring assessments, invasive species management) • species diversity • # hectares invasive species removed
Explore a tree protection by-law to prevent loss of the Town's tree canopy, and provide guidelines for tree replacement where appropriate	<ul style="list-style-type: none"> • Review existing Woodland Conservations By-Law, and explore options to introduce similar protection to individual trees in residential areas 	Short					
Work with Conservation Authorities to manage priority invasive species in Caledon	<ul style="list-style-type: none"> • Support prevention, monitoring and management of invasive species and pests, and allocate resources where appropriate • Introduce an invasive species by-law to prevent property owners from planting and growing invasive plants • Identify opportunities to remove invasive species as a part of other projects (e.g. roads projects) in collaboration with CA's 	Ongoing					
Identify and implement alternative land procurement approaches	<ul style="list-style-type: none"> • Work with Conservation Authorities to identify and monitor priority areas for park acquisition, particularly land that has significant ecological value, vulnerable ecosystems or species, and/or high vulnerability to climate impacts like flooding 	Long					

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
Create an Open Space strategy for parks and green space in Caledon that considers future climate conditions in park development and management	<ul style="list-style-type: none"> Establish park management procedures that enhance climate resiliency, including selecting climate resilient trees and plant species, reviewing procedures, and training staff Identify vulnerable parks or park areas and determine interventions that will improve resilience to climate risks Identify opportunities to expand the Town's trail network ("regional greenways") to provide both recreation and commuter routes 	Medium					
11) Restore and enhance natural features on public and private land							
Improve coordination between the Town, Conservation Authorities and other partners to implement restoration strategies that address natural systems vulnerabilities to climate impacts and stressors (e.g. invasive species, wildfire, heat, dryness)	<ul style="list-style-type: none"> Develop a key contacts list of municipal, Conservation Authority and other organization partners and meet at least once per year to identify priority restoration sites, and track restoration progress over time Support Conservation Authority's restoration work where possible Consider waiving fill removal fee for restoration projects like wetland creation and creek daylighting 	Ongoing	<ul style="list-style-type: none"> Planning tools Green Development Standards Easements, buffers By-laws Park management plans/ procedures Municipal Natural Asset Initiative Tree Seedling Program Town Green Fund Peel Region Urban Forest Strategy/ Working Group West Bolton SNAP Credit Valley Conservation Risk and Return on Investment Tool 	<ul style="list-style-type: none"> Town (Development, Parks, Facilities, Energy & Environment) Conservation Authorities Region of Peel 	<ul style="list-style-type: none"> Environmental Organizations (Ducks Unlimited Canada, Nature Conservancy, Ontario Streams) Landowners Agriculture organizations and Farmers Residents Developers/builders Peel Climate Change Partnership 	<p>\$</p> <p>Staff time for developing, implementing, monitoring, and reporting on programs</p>	<ul style="list-style-type: none"> Annual increase in canopy cover total ha of restored land # of projects implemented (e.g. stream bank restoration, wetland creation, planting projects)
Expand restoration efforts on private land (residential, commercial, rural, and agricultural), including tree planting, wetland restoration, stream rehabilitation, etc.	<ul style="list-style-type: none"> Establish canopy cover targets for Caledon and measure cover on a regular basis Work with Conservation Authorities and others to educate residents and develop guidelines on planting and care of native and climate-resilient vegetation Review and enhance the Town's Tree Seedling Program (e.g. better align with CA tree sales programs, ability to match donors with landowners, higher incentives for planting in priority restoration areas, etc.) 	Ongoing					
Increase planting in Town-owned Parks, Conservation Areas, public right of ways and other public spaces with climate-resilient species	<ul style="list-style-type: none"> Review street tree planting guidelines for new developments to ensure trees are able to survive and grow to maturity Maintain and regularly update geospatial inventory of public trees and potential planting sites Determine priority opportunities for public plantings (e.g. shading, stormwater management, etc.) and identify climate-resilient vegetation Enhance naturalization plantings in parks, accompanied by public education and awareness Identify opportunities to install LID projects/rain gardens at Town facilities 	Ongoing					

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
Explore an offsetting program to require that new developments compensate for loss or degradation of natural features	<ul style="list-style-type: none"> Review existing tree replacement guidelines and ratios Work with Conservation Authorities to align with their offsetting policies 	Long					

LOW CARBON TRANSPORTATION

12) Increase walking and cycling through improved programs and infrastructure

Expand and enhance active transportation infrastructure to promote walking and cycling in urban areas	<ul style="list-style-type: none"> Explore bike sharing programs, cycle only parking, priority lanes and traffic lights, and signage Improve pedestrian crossings, install connected walking routes, and provide walking maps and signage Expand bike paths and lanes, prioritizing commuter routes and routes into commercial centres Implement road diets to expand space for active transportation modes Expand the Town's trail network (see also Agriculture and Natural Systems) 	Medium	<ul style="list-style-type: none"> Transportation Master Plan Complete Streets Policy Transportation Demand Management Plan Traffic calming strategies Planning tools Active Transportation Task Force West Bolton SNAP 	Town (Transportation, Parks)	<ul style="list-style-type: none"> Town (Energy and Environment, Engineering, Planning, Recreation) Peel Region (Public Health) School Boards and local schools Employers Institutions Toronto and Region Conservation Authority 	<p>\$\$</p> <p>Staff time to manage infrastructure upgrades and conduct public engagement. Capital costs to install bike lane and sidewalk infrastructure</p>	<ul style="list-style-type: none"> Traffic counter data (vehicle counts, and vehicle kilometers traveled) in key areas User experience (surveys, interviews) Total kms of bike lanes and trails
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13) Expand Caledon's transit network in alignment with new growth areas

Expand opportunities for low carbon transit and car sharing in built up areas and plan for transit in new communities.	<ul style="list-style-type: none"> Expand bus service density, coverage and scheduling Establish a policy to purchase electric vehicles for transit when they are procured Explore on-demand transit opportunities using zero emissions vehicles, and prioritize low carbon opportunities where possible Prioritize parking for car share and car cooperative vehicles at transit hubs and parking lots Encourage the uptake of car share and car cooperative programs (i.e. starting with a pilot in MURB areas) Consider future bus rapid transitways or partial priority facilities for bus services in network upgrades 	Long	<ul style="list-style-type: none"> Transportation Master Plan Transit Action Plan Transportation Demand Management Plan Development plans Official Plan 	Town (Transportation, Planning)	<ul style="list-style-type: none"> Town (Engineering, Roads and Fleet) Local transit authorities Metrolinx Employers (incentive programs) Institutions (incentive programs) School Boards and local schools 	<p>\$\$\$</p> <p>Staff time to coordinate transit service upgrades and conduct public outreach and engagement. Capital costs to expand and maintain transit fleet</p>	<ul style="list-style-type: none"> Ridership Vehicle kilometres travelled (VKT, km/year) Transit mode share in urban areas
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Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
14) Expand Caledon's EV charging network and encourage the adoption of low carbon vehicles							
Work with regional partners to develop and implement a community-wide strategy to promote the use of zero-emissions vehicles in Caledon	<ul style="list-style-type: none"> Continue to expand electric vehicle charging infrastructure across Caledon, including level 3 charging stations Require EV infrastructure in new residential and commercial developments Support green hydrogen fuel expansion particularly for heavy duty trucks Evaluate options to incentivize the use of green vehicles, and work with Peel Region on a region-wide approach to traffic congestion Educate and raise awareness about the benefits of EV's in Caledon 	Immediate	<ul style="list-style-type: none"> Transportation Master Plan Official Plan PCCP Zero Emissions Vehicle Strategy Green Development Standard Green Fleet Strategy Corporate GHG Reduction Framework 	Town (Planning, Energy and Environment, Roads and Fleet, Facilities, Finance)	<ul style="list-style-type: none"> Vehicle suppliers Provincial and Federal Governments Businesses Institutions Auto dealerships and rental agencies Local transportation-focused not for profit groups Region of Peel/Peel Climate Change Partnership (PCCP) 	<p>\$\$\$</p> <p>Staff time to develop strategies, manage new charging infrastructure, and engage residents and businesses. Capital costs for EV charging infrastructure, and Town fleet upgrades and replacements</p>	<ul style="list-style-type: none"> Greenhouse gas emissions (tonnes/year) Average fleet kilometrage (km/l equivalent) Annual operating costs (\$/km) EV market penetration Available charging infrastructure EV vehicle user experiences/recommendations # of EV charging connectors
Develop a municipal Green Fleet Strategy to convert the Town's fleet to zero emissions	<ul style="list-style-type: none"> Provide support for maintenance, operations, and staff training for new fleet vehicles Establish a policy for fleet replacements with low carbon options Evaluate the infrastructure requirements to support low carbon vehicle fleet Ensure that vehicles are right-sized with staff needs 	Medium					
Reduce transportation-related pollution in Caledon through education and enforcement	<ul style="list-style-type: none"> Improve compliance with the Town's anti-idling by-law through education campaigns and increased signage, as well as enforcement Increase enforcement of illegal trucking operations 	Ongoing					

RESILIENT INFRASTRUCTURE AND ENERGY

15) Diversify Caledon's energy supply with renewable and resilient energy sources and systems

Develop a Renewable Energy Plan to advance solar and other renewable energy systems, and explore low carbon energy procurement	<ul style="list-style-type: none"> Convene stakeholders in the related energy, electrification, and education fields to advise on the Plan 	Short	<ul style="list-style-type: none"> Official Plan Zoning By-Laws Green Development Standards Community Improvement Plan Program 	<ul style="list-style-type: none"> Town (Planning, Energy and Environment, Finance, Building Services) 	<ul style="list-style-type: none"> Town (Economic Development) Utilities Local/regional renewable energy generation businesses and suppliers 	<p>\$\$\$</p> <p>Staff time for strategy development and coordination. Capital costs for feasibility studies and installing new renewable energy capacity</p>	<ul style="list-style-type: none"> Annual projects initiated and completed Grid emissions avoided (tCO2e/year) Installed solar PV capacity (MW/year) Annual maintenance cost (\$/year)
Identify and support areas and opportunities for district energy and renewable energy infrastructure	<ul style="list-style-type: none"> Explore a low carbon district energy pilot for residential new development Include consideration of district energy opportunities alongside the actions for eco-districts and mixed use, compact design 	Medium					

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
Encourage investment in ground mount solar projects	<ul style="list-style-type: none"> Explore potential for a new solar neighbourhood, combined with battery back-up power Identify potential solar sites, and prioritize their development with input from stakeholders and the public, and include in Official Plan zoning by-laws as a permitted use 	Short	<ul style="list-style-type: none"> GreenBiz Caledon Caledon Renewable Energy Potential Study (U of Guelph) Municipal Energy Maps (2016) 	<ul style="list-style-type: none"> Renewable Energy providers 	<ul style="list-style-type: none"> Peel Climate Change Partnership Large-scale energy organizations and local non-profit renewable energy groups Transmission and distribution companies Subject matter experts/ academia Farmers/ agriculture organizations 		<ul style="list-style-type: none"> Scale of community participation in renewable procurement purchases (MWh, as a percentage of total community electricity demand)
Support the uptake of community rooftop PV	<ul style="list-style-type: none"> Deliver outreach and training to homeowners, businesses, developers and builders Arrange bulk solar PV system purchasing Coordinate with electrical utilities on new metering programming Develop partnerships with local renewable energy system providers and installers and coordinate pricing Establish installed capacity milestone targets (kW/year) 	Immediate					
Develop energy storage as an emergency back-up power supply and energy demand management measure	<ul style="list-style-type: none"> Conduct a feasibility study and determine energy storage options for Town facilities Coordinate with partners to develop an energy storage installation schedule and install energy storage in concert with new renewable energy systems 	Medium					
Seek opportunities to develop on-farm renewable energy systems	<ul style="list-style-type: none"> Conduct a feasibility study on local options for on-farm renewable energy systems, including biogas, biodiesel, solar, wind, and geothermal Coordinate with the local farming community to promote and assess options Consider potential incentives for farmers that install renewable energy systems 	Medium					

16) Enhance the capacity of Town roads and bridges to withstand extreme weather impacts

Update engineering codes and design standards for new and upgraded municipal and private infrastructure	<ul style="list-style-type: none"> Review updated federal and provincial guidelines, and industry best practices, considering design, construction practices and materials Incorporate best practices and participate in research and pilot projects to evaluate climate impacts and adaptation measures for transportation infrastructure 	Medium	<ul style="list-style-type: none"> Asset Management Plan Engineering Design Standards Road Needs Study NRCan design guidelines for road adaptation 	Town (Road Operations, Engineering, Asset Management)	<ul style="list-style-type: none"> Town (Energy and Environment) Region of Peel Ministry of Transportation Conservation Authorities 	<p>\$\$</p> <p>Staff time to update standards and procedures, perform additional inspections and maintenance. Capital costs for new road design and upgrades</p>	<ul style="list-style-type: none"> # of transportation infrastructure assets identified as high or medium risk # of road repair requests/ complaints per year related to climate impacts (i.e. potholes, flooding, etc.)
Prioritize infrastructure upgrades/replacement/maintenance based on susceptibility to climate impacts	<ul style="list-style-type: none"> Conduct asset scale vulnerability assessments, aligned with existing infrastructure update/review cycles (see also Asset Management Plan) Incorporate stormwater management considerations into road upgrades 	Immediate					

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
Enhance the Town's Salt Management Plan to minimize salt use in ecologically and agriculturally sensitive areas, consider alternatives and pilot new approaches/technologies.	<ul style="list-style-type: none"> Partner with Conservation Authorities to monitor the impacts of road salt use on ecologically sensitive areas and develop remediation plans where required Educate residents and businesses on appropriate use of road salt 	Medium	<ul style="list-style-type: none"> Stormwater Management Master Plan Transportation Master Plan CityWide Asset-scale risk and vulnerability assessments Asphalt rehab, resurfacing and gravel programs Annual winter reserve budget Weather information systems 				
Update road operations and maintenance procedures in response to climate impacts	<ul style="list-style-type: none"> Review operations and maintenance procedures for Town roads in light of climate impacts, including staffing levels, equipment needs, etc. Allocate budget/establish a reserve fund for expected increase in road repairs due to weather-related damages Implement consistent monitoring and reporting framework to track road damages 	Medium					

17) Upgrade stormwater plans and practices to reduce risks from extreme weather events

Update the Town's stormwater management master plan to incorporate updated floodplain maps and climate change adjusted intensity-duration-frequency curves		Short	<ul style="list-style-type: none"> Stormwater Management Master Plan Asset Management Plan Engineering Design Standards Planning Tools Green Development Standard Provincial standards and guidelines Risk and Return on Investment Tool 	Town (Stormwater, Asset Management, Engineering, Planning and Development, Road Operations, Regulatory Services)	<ul style="list-style-type: none"> Town (Energy and Environment, Building Services) Conservation Authorities 	<p>\$\$\$</p> <p>Staff time to update procedures and guidelines, and coordinate monitoring and maintenance. Capital costs for Stormwater Master Plan, and stormwater upgrades/maintenance</p>	<ul style="list-style-type: none"> # of stormwater infrastructure assets implemented/maintained/upgraded
Develop a monitoring and maintenance program for all stormwater infrastructure (culverts, storm sewers, stormwater ponds, LID, etc.) and incorporate into the asset management plan		Medium					
Develop and implement a stormwater by-law and sustainable financing option to incentivize lot level stormwater retention and discourage increases in impervious surfaces	<ul style="list-style-type: none"> Review levels of service and risk for stormwater assets (through the Asset Management Plan) to determine maintenance costs required Develop financing options to offset potential for higher stormwater costs Investigate permit and regulatory approaches to reduce increases in impervious surfaces 	Medium					

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
Establish an encroachment by-law on Town right-of-ways or easements to prevent blockages to stormwater flow		Short					
Review and enhance development guidelines for stormwater infrastructure in new developments	<ul style="list-style-type: none"> Review stormwater guidelines with Planning and Engineering, and ensure alignment with planning policies and zoning by-laws Integrate climate projections into stormwater guidelines to account for impacts like higher intensity and duration storms 	Short					
18) Ensure Town facilities are carbon neutral and climate resilient							
Meet the targets established in the most recent Corporate Greenhouse Gas Emissions Reduction Framework, working towards more ambitious targets in the next update	<ul style="list-style-type: none"> Meet the Town's corporate emissions reduction target of 24% below 2017 levels by 2024, then work towards a net zero by 2050 target. Set interim targets that will help achieve this goal Continue to transition to low carbon energy sources in Town buildings and pursue deep energy retrofits to improve the efficiency of buildings Explore innovative financing mechanisms to fund deep energy retrofit projects at Town facilities Allocate annual budget for energy efficiency projects at recreation and non-recreation facilities 	Ongoing	<ul style="list-style-type: none"> Corporate Green Building Standard Corporate Greenhouse Gas Emissions Reduction Framework Asset Management Plan 	Town (Facilities, Energy and Environment, Recreation, Finance)	<ul style="list-style-type: none"> Town (Asset Management) Council 	<p>\$\$\$</p> <p>Staff time to develop the standard, and manage energy audits, retrofits and energy performance monitoring. Capital costs for building upgrades and net zero new buildings</p>	<ul style="list-style-type: none"> Greenhouse gas emissions (tonnes/year) Natural gas consumption (M3/year) Electricity consumption (kWh/year) Annual energy costs (\$/year) # of annual retrofits
Update the Corporate Green Building Standard for new municipal buildings and building retrofits to achieve net zero carbon and climate resiliency	<ul style="list-style-type: none"> Work with key staff to guide the update of the Town's Corporate Green Building Standard to ensure that new Town buildings and major renovations meet a standard aligned with net zero or net zero ready 	Medium	<ul style="list-style-type: none"> Asset Management Plan Corporate Energy Team Building Condition Assessments 				
Incorporate climate change risks into building condition assessments to consider how future climate trends will impact facility structure and operations	See also Asset Management Plan actions	Medium	<ul style="list-style-type: none"> Corporate Energy Revolving Fund 				
Establish low-carbon back-up power systems in all Town facilities to serve as community hubs during emergencies	<ul style="list-style-type: none"> Include natural gas generators in the short-term, then look to lower carbon solutions such as solar with battery storage, biogas, etc. in the longer term 	Medium - Long					

Actions	Supporting Actions	Timing	Implementation tools	Lead	Supporting partners	Resources required	KPIs
19) Embed climate change considerations into the Town's Asset Management planning process							
Incorporate climate change considerations into Levels of Service, Levels of Risk, and the risk assessment of core and non-core infrastructure assets.	<ul style="list-style-type: none"> Identify where climatic changes may impact costs of service delivery, including evaluating the costs of delivering current vs. desired level of service when accounting for climate risks Conduct asset scale vulnerability assessments for core and non-core infrastructure - review annually and re-assess every 3-5 years 	Medium	<ul style="list-style-type: none"> Asset Management Plan Climate Change Action Plan Municipal Natural Assets Initiative (CVC) Risk and Return on Investment Tool (CVC) CityWide 	Town (Asset Management)	<ul style="list-style-type: none"> Town (Engineering, Stormwater, Facilities, Energy and Environment, Parks) Conservation Authorities Federation of Canadian Municipalities Asset Management Ontario 	<p>\$\$</p> <p>Staff time to update Asset Management Plan with climate change. Capital costs for asset-scale vulnerability assessments</p>	<ul style="list-style-type: none"> Plans/policies updated
Update asset maintenance and monitoring programs of core infrastructure to reflect climate change considerations	<ul style="list-style-type: none"> Enhance monitoring and data collection through programs like CityWide to track infrastructure damage, causes and impacts 	Medium					
Incorporate green infrastructure and natural assets into the AMP by identifying and valuating Town-owned assets and developing management plans	<ul style="list-style-type: none"> Continue updating Caledon's public tree inventory Develop Levels of Service for Town-owned green infrastructure assets like street trees (e.g. that trees planted in new developments survive and grow to maturity) Over the long term consider the value of community green infrastructure assets, and incorporating into the AMP 	Medium					