



Greater Peterborough Area Climate Change Action Plan

Chapter 1 – City of Peterborough

Community and Corporate Climate Action Plans

September 30, 2016

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Section 1: Introduction and Overview

Greater Peterborough Area Climate Change Action Plan

In 2014, the Greater Peterborough Area's (GPA) member communities joined more than 250 other communities across Canada to address climate change through participation in the Partners for Climate Protection (PCP) program aimed at reducing GHG emissions from both municipal/First Nation corporate operations and community sources.

As part of the PCP program, the Climate Change Action Plan sets a course to reduce local contributions to climate change and prepare communities for present and expected changes that will occur as a result of climate change. This plan represents an integrated approach to dealing with some of the most important issues related to the sustainability of our diverse region. The overall objective of the CCAP is to reduce our greenhouse gas emissions through a reduction in fossil fuel use and lowering our energy consumption, and to better prepare for our changing climate. The Plan identifies strategies, actions, and emission reduction targets that fit with and address the needs of each municipality and First Nation within the GPA. This regionally coordinated approach will ensure that we act together to safeguard the health of our residents and ensure the stability of our local economic and natural resources against impacts related to climate change.

Climate Change Vision

In 2010, the GPA embarked on an exciting journey – the development of an Integrated Community Sustainability Plan, coined *Sustainable Peterborough*. Within the Sustainable Peterborough Plan, climate change was identified as one of the eleven key theme areas of focus. Each community of the GPA is working together to collectively achieve the following vision, as originally identified as the climate change goal in the Sustainable Peterborough Plan:

We will reduce our contributions to climate change while increasing our ability to adapt to climate change conditions.

The City of Peterborough's Community and Corporate Action Plans

Chapter 1 of the CCAP includes the City of Peterborough's Community (Section 2) and Corporate (Section 3) Action Plans. Both of these build on the overarching components outlined in the main CCAP, but provide greater detail specific to the City of Peterborough. They both include the following:

- *Where are we now* – a brief discussion of community and corporate baseline GHG emissions.
- *Where do we want to go* – GHG emissions reductions targets for the community and corporation.
- *How are we going to get there* – actions that the community and corporation will take to achieve its emissions reduction targets.

Strategy H2: Build new homes to be more efficient and have a smaller environmental footprint	
Primary Action Assumptions	Results in full electrification of energy end uses.
Supporting Actions/ Policies	<p>Supporting Policies</p> <ul style="list-style-type: none"> • ‘Solar Ready’ Official Plan Updates • Decrease minimum parking requirements for new residential development where supporting public transit exists <p>Supporting Actions & Initiatives</p> <ul style="list-style-type: none"> • Identify potential amongst new developments to build a pilot neighbourhood to meet net-zero emissions
GHG Emission Reduction Potential	6,383 tonnes of CO ₂ e/per year

Strategy H3: Reduce the amount of waste generated by residents that contribute to greenhouse gas emissions	
Primary Action	Mitigation impact: direct Adaptation impact: none Explore feasibility of capturing energy from waste (e.g. anaerobic digestion) to manage organic material and to reduce emissions of methane gas.
Primary Action Assumptions	Assumes 50% of household waste that contributes to GHG emissions (i.e. organic material) is managed through the determined technology.
Supporting Actions/ Policies	<p>Supporting Actions & Initiatives</p> <ul style="list-style-type: none"> • Implement a “less waste challenge” to encourage reduction in waste generation, with a particular focus on food waste • Review efficiency of waste collection program and implement changes to reinforce diversion programs and reduce collection truck emissions
GHG Emission Reduction Potential	2,468 tonnes of CO ₂ e/per year ¹

Our Workplaces and Schools

Strategy W1: Improve energy and water efficiency of existing buildings and business operations	
Primary Action	Mitigation impact: direct Adaptation impact: indirect Work with utilities (PDI, Hydro One, Enbridge as appropriate) to deliver a coordinated deep energy retrofit program to industrial, commercial, and institutional organizations.
Primary Action Assumptions	Implement retrofits in 60% of industrial, commercial, and institutional facilities by 2031.
Supporting Actions/ Policies	<p>Supporting Policies</p> <ul style="list-style-type: none"> • Community Improvement Plans

¹ Note that GHG emissions avoided through managing organic waste have been attributed to the City’s corporate GHG reduction target because the landfill is owned by the City of Peterborough and is included in the City’s corporate baseline inventory.

Strategy W1: Improve energy and water efficiency of existing buildings and business operations

	<p>Supporting Actions & Initiatives</p> <ul style="list-style-type: none"> • Encourage local businesses to participate in energy benchmarking through the use of Energy Star Portfolio Manager provided through Natural Resources Canada • Work with the Building Owners and Managers Association (BOMA) to expand their Operator Training program to the Greater Peterborough Area (County and City partnership)
GHG Emission Reduction Potential	25,623 tonnes of CO ₂ e/per year

Strategy W2: Build new buildings to be more efficient and have a smaller environmental impact

	Mitigation impact: direct	Adaptation impact: direct
Primary Action	Implement gradual improvement in efficiency of industrial, commercial, and institutional buildings.	
Primary Action Assumptions	<ul style="list-style-type: none"> • Commercial & Institutional: full electrification, and uses 70% less energy • Industrial: only 20% of the energy mix consists of fossil fuels (i.e. natural gas), and uses 40% less energy 	
Supporting Actions/ Policies	<p>Supporting Policies</p> <ul style="list-style-type: none"> • Implement zoning requirements and policy direction to encourage cycling and other sustainable modes of travel for new commercial development (e.g. reduced parking requirements, bike storage, employee showers) 	
GHG Emission Reduction Potential	6,143 tonnes of CO ₂ e/per year	

Strategy W3: Facilitate climate change friendly business operations and practices

	Mitigation impact: indirect	Adaptation impact: direct
Primary Action	Support Sustainable Peterborough Business Initiative to build a toolkit for Greater Peterborough Area businesses to assist with climate change impact analysis and business continuity planning for extreme weather.	
Supporting Actions/ Policies	<p>Supporting Actions & Initiatives</p> <ul style="list-style-type: none"> • Engage with businesses and institutions to implement corporate sustainability initiatives aimed at reducing greenhouse gas emissions • Work with institutions and businesses to support implementation of food waste reduction and/or diversion 	
GHG Emission Reduction Potential	Impact on GHG emissions nominal	

Strategy W4: Support local economic resilience and growth of the local green economy

	Mitigation impact: indirect	Adaptation impact: indirect
Primary Action	Support GreenUP as a “one-stop shop” for businesses to learn about and advance sustainability through the Green Business Peterborough Program.	

Our Food

Strategy F1: Support localization of the food system	
Primary Action	Mitigation impact: indirect Adaptation impact: indirect Undertake a community food system assessment to better understand local food production and movement within the GPA.
Supporting Actions/ Policies	<p>Supporting Policies</p> <ul style="list-style-type: none"> Update Official Plan policies to support urban agriculture and the growing, processing and distribution of locally-produced food for all residents <p>Supporting Actions & Initiatives</p> <ul style="list-style-type: none"> Continue to expand the network of community gardens throughout the Greater Peterborough Area and engage the broader community in the value of gardening Support local organizations to provide community skill sharing programs to increase awareness among community members on how to grow, process, and store food Support local organizations in training, facilitating access to land and promoting successful entrepreneurship of new farmers and food business to increase the production and processing, distribution and retailing of local food
GHG Emission Reduction Potential	Impact on GHG emissions nominal

Strategy F2: Encourage purchasing of locally produced food	
Supporting Actions/ Policies	Mitigation impact: indirect Adaptation impact: indirect <p>Supporting Actions & Initiatives</p> <ul style="list-style-type: none"> Support local organizations to promote the marketing of locally-produced food through initiatives such as the Purple Onion Festival and Local Food Month Expand and promote the Farmers Market Network across the Greater Peterborough Area Support and encourage farm gate sale of produce
GHG Emission Reduction Potential	Impact on GHG emissions nominal

Strategy F3: Reduce the amount of wasted food	
Primary Action	Mitigation impact: direct Adaptation impact: none Implement a residential awareness campaign to encourage elimination of wasted food in the home, workplaces, and schools.
Primary Action Assumptions	Generally could achieve a reduction in the proportion of wasted food in the waste stream by 11%.
Supporting Actions/ Policies	Supporting Actions & Initiatives

Strategy L2: Identify climate change risks and prepare for potential impacts	
Supporting Actions/ Policies	Supporting Actions & Initiatives <ul style="list-style-type: none"> • Adopt the Low Impact Development Stormwater Management Planning and Design Guide (CVC/TRCA) for landscape-based stormwater management planning and low impact development stormwater management practices • Update engineering design standards to improve climate change readiness of new infrastructure by taking a green infrastructure approach first and increasing flood standards to a 200-year storm standard rather than the current 100-year standard
GHG Emission Reduction Potential	None

Strategy L3: Protect and enhance natural assets	
Primary Action	Mitigation impact: indirect Adaptation impact: direct Develop and implement a Natural Heritage System Plan (City and County with Townships).
Supporting Actions/ Policies	Supporting Policies <ul style="list-style-type: none"> • Place restrictions on cutting down trees on private property and/or a tree replacement policy • Update Official Plan policies to require greater buffers around wetlands to protect them from surrounding land uses Supporting Actions & Initiatives <ul style="list-style-type: none"> • Continue to implement an Urban Forest Strategic Plan • Support and promote local Conservation Authorities’ tree planting programs to encourage planting trees on public and private property • Support local Conservation Authorities to deliver planting and restoration projects at strategic high priority areas with climate ready species
GHG Emission Reduction Potential	Non-quantifiable with available information

Our People

Strategy P1: Prepare for the health impacts associated with a changing climate	
Primary Action	Mitigation impact: none Adaptation impact: direct Conduct a local community vulnerability assessment of public health impacts from climate change to identify climate risks on vulnerable populations (in partnership with all communities).
Supporting Actions/ Policies	Supporting Actions & Initiatives <ul style="list-style-type: none"> • Establish a protocol for extreme weather alerts and flooding updates
GHG Emission Reduction Potential	None

Strategy P2: Foster a culture of climate change awareness	
	Mitigation impact: indirect Adaptation impact: indirect
Supporting Actions/ Policies	Supporting Actions & Initiatives <ul style="list-style-type: none"> • Support Sustainable Peterborough and other local organizations in hosting regular events focused on climate change (speaker series, annual event, etc.) • Support Sustainable Peterborough in seeking buy-in and endorsement/support for the shared vision and goals of Community Climate Change Action Plan from existing groups and organizations in the Greater Peterborough Area • Support Sustainable Peterborough to host a community, youth, adult, and senior climate change champion through the annual Sustainable Peterborough Awards
GHG Emission Reduction Potential	Impact on GHG emissions nominal

Strategy P3: Encourage civic engagement around climate change	
Primary Action	Develop a charter and guidelines (engagement strategy) to foster meaningful community engagement in climate change issues and environmental stewardship (partnership amongst all communities).
	Mitigation impact: indirect Adaptation impact: indirect
Supporting Actions/ Policies	Supporting Actions & Initiatives <ul style="list-style-type: none"> • Support Sustainable Peterborough to establish a youth advisory committee on climate change to empower youth to take action on climate change
GHG Emission Reduction Potential	Impact on GHG emissions nominal

Decarbonization of the Electric Grid

Since the baseline year of 2011, the Province of Ontario has taken steps to reduce the GHG emissions associated with the electrical grid. For example, it closed all of its coal-fired power plants. This in turn will result in significant GHG Emission Reduction Potential for the City of Peterborough community, totalling 27,529 tonnes of CO₂e/per year.

Section 3: Corporate Action Plan

Where are we now?

In 2011, 15,129 tonnes of CO₂e were emitted by the City of Peterborough's corporate operations. The business-as-usual forecast for the corporate operations is based on annual growth rates derived from official population projections. Emissions from corporate operations are projected to increase to 16,852 tCO₂e per year by 2031 if the City continued to operate as it did in the baseline year without taking any actions to reduce GHG emissions. For further details on the City of Peterborough's baseline corporate emissions, please see the Appendix attached to this chapter entitled *City of Peterborough Corporate and Community Emissions Inventory*.

Where do we want to go?

The City of Peterborough is aiming to achieve a 30% reduction in its corporate GHG emissions from the 2011 baseline by 2031. This is equivalent to 4,539 less tonnes of CO₂e emitted per year by 2031, which would put the City's corporate emissions at 10,590 tonnes of CO₂e per year by 2031 compared to the current 15,129 tonnes per year.

How are we going to get there?

The following table details the strategies and actions that the City of Peterborough will use to achieve its corporate GHG emissions reduction target.

City of Peterborough Corporate Action Plan	Timeframe			
	Underway or Complete	Short (1-4 years)	Med (5-9 years)	Long (10+ years)
Buildings				
Strategy 1: Institutionalize energy efficiency and low carbon thinking into the organization				
Implement employee training for energy efficiency	X	X	X	X
Implement staff behaviour change programs to reduce usage of electricity and heating in day-to-day activities	X	X	X	X
Establish a policy to consider highest energy efficiency as part of procurement requirements and evaluation (City and PU)	X	X	X	X
Continue to monitor incentive programs offered through utilities and other third party funding source to be leveraged for implementing energy efficiency improvements	X	X	X	X
GHG Emission Reduction Potential: In-direct GHG reductions				
Strategy 2: Enhance operational efficiency of existing buildings				
Develop and deliver an equipment preventative maintenance program on an ongoing basis	X	X	X	X
Conduct regular energy audits of City facilities on a rotational basis to identify opportunities for improved efficiency	X	X	X	X
Explore installation of building automation systems to optimize building operations where feasible	X		X	X

Conduct building re-commissioning to optimize building operations where applicable	X	X	X	X
Continue to implement a utility bill validation process to identify and correct any billing issues and variations in energy usage	X	X	X	X
Work with utilities to install sub-metering capacity at each City facility where feasible to better monitor energy usage	X	X		
GHG Emission Reduction Potential: 212 tonnes of CO₂e/per year				
Strategy 3: Build municipal facilities to ensure high environmental performance				
Establish a Green New Building Policy to require new municipal buildings and major renovations be built to high environmental standards		X		
Install electric vehicle charging facilities as part of new facility builds	X	X		
Formalize and continue to implement a full lifecycle analysis costing process for new buildings or major renovations to consider the sustainability of the building over its life	X	X	X	X
Install geothermal heating and cooling systems for new buildings and major renovations if feasible			X	X
Explore feasibility of district energy for new facilities (e.g. social housing)			X	X
GHG Emission Reduction Potential: 330 tonnes of CO₂e/per year				
Strategy 4: Improve environmental performance of existing municipal facilities				
Conduct annual assessments of each facility to identify opportunities to improve energy efficiency	X	X	X	X
Continue implementation of interior and exterior LED lighting retrofit program in facilities where feasible	X	X	X	
Install programmable thermostats and occupancy sensors in all facilities where feasible	X	X	X	
Establish policy direction to replace appliances with Energy STAR rated appliances as needed	X	X	X	X
Upgrade insulation/building envelope while conducting other essential building work (where feasible)	X	X	X	X
Replace windows and doors with high efficiency according to replacement schedule/need	X	X	X	X
Replace mechanical equipment with high efficiency according to replacement schedule/need	X			X
GHG Emission Reduction Potential: 712 tonnes of CO₂e/per year				
Strategy 5: Utilize renewable energy sources				
Conduct an assessment to explore opportunities for solar photovoltaic panels and other renewable energy options at all municipal facilities	X	X		
Converting electric hot water heaters to solar			X	X
GHG Emission Reduction Potential: 138 tonnes of CO₂e/per year				

Fleet				
Strategy 6: Transition the municipal fleet to be more efficient and less carbon emitting				
Develop and implement a Green Fleet Strategy and replacement schedule				
• Right sizing vehicle/appropriate vehicle class (fit-for purpose vehicles) through replacement schedule				
• Transitioning to low emission and alternative fuel vehicles (e.g. clean diesel, advanced natural gas, ethanol, or hybrid)	X	X	X	X
• Use of anti-idling technology				
• Fuel and vehicle performance monitoring				
Implement an operator training and education program (e.g. eco driving and anti-idling)	X	X	X	X
Continue preventative maintenance program for vehicles and equipment	X	X	X	X
Continue conducting vehicle/fuel performance audits	X	X	X	X
GHG Emission Reduction Potential: 1,274 tonnes of CO₂e/per year				
Water & Sewage				
Strategy 7: Enhance operational efficiency of the water services system				
Review and optimize pumps and blowers at Waste Water Treatment Plant	X	X		
Continue to deliver preventative maintenance program	X	X	X	X
Continue to deliver operator training and education program	X	X	X	X
Conduct regular energy performance audits of water and waste water treatment facilities	X	X	X	X
Monitor and track energy performance of water and waste water treatment facilities	X	X	X	X
GHG Emission Reduction Potential: 175 tonnes of CO₂e/per year				
Streetlighting				
Strategy 8: Improve energy efficiency of the streetlighting system				
Retrofit all remaining street lighting to LED		X		
Retrofit all decorative lights and street signage to LED		X		
Retrofit all rental lights to LED (Peterborough Utilities)		X		
Retrofit all parking lot lighting to LED			X	
Explore retrofitting of media boards and other digital signage			X	
GHG Emission Reduction Potential: 271 tonnes of CO₂e/per year				
Solid Waste				
Strategy 9: Reduce the amount of organic waste generated through municipal operations				
Continue to participant in and enhance the office waste reduction and diversion initiatives	X	X	X	X
Implement collection of organic waste from City offices/facilities	X		X	X
Implement staff education and awareness program related to waste minimization and diversion	X	X	X	X
Conduct annual corporate waste audits at each facility to understand waste composition and identify opportunities for improvement	X	X	X	X
Develop a corporate waste diversion target and strategy	X	X		
Monitor and track corporate waste generation and diversion	X	X	X	X

Redevelop and implement the corporate green procurement policy	X		X
Develop and implement a green event policy	X	X	
GHG Emission Reduction Potential: 1,974 tonnes of CO₂e/per year			

Decarbonization of Electricity Grid

Since the baseline year of 2011, the Province of Ontario has taken steps to reduce the GHG emissions associated with the electrical grid. For example, it closed all of its coal-fired power plants. This in turn will result in significant GHG Emission Reduction Potential for the City of Peterborough’s corporate emissions, totalling 1,287 tonnes of CO₂e/per year.