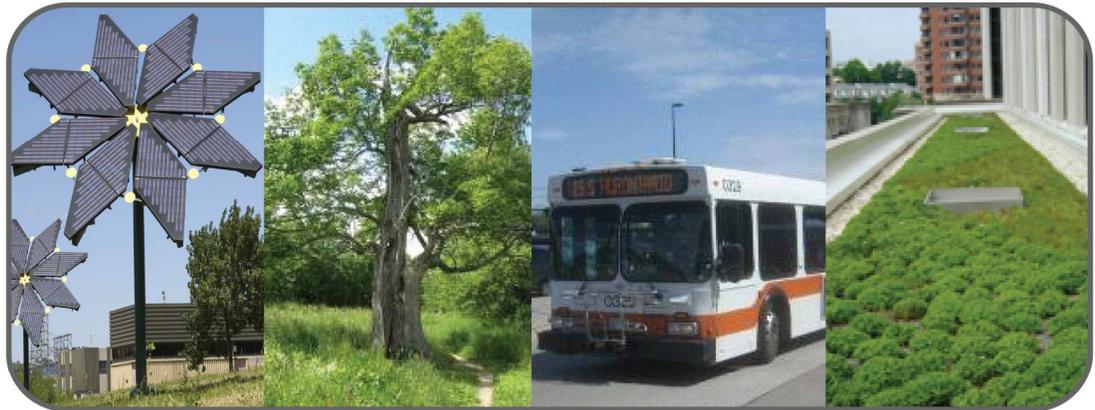




Peel Climate Change Strategy

A Strategic Plan for Climate Change for the Geographic Region of Peel



Updated June 20, 2011

www.peelregion.ca/climatechange

Welcome Letter from the Partners

Dear reader,

We, the Region of Peel, the City of Brampton, the Town of Caledon, the City of Mississauga, Credit Valley Conservation and the Toronto and Region Conservation Authority (the partners) in the geographic region of Peel, are pleased to present our Climate Change Strategy.

The six partners have worked together over the past two years to establish a terms of reference, conduct rigorous background research, examine potential impacts to our communities and establish priorities for action that are presented within this Climate Change Strategy. We thank all of those who have contributed along the way – from peer reviewers to workshop participants – your input has been invaluable.

We recognize that we are forerunners here in Ontario and across Canada. Not many municipalities, let alone regional partnerships, have developed strategies to respond on a local level to the global challenge of climate change. We believe that it is up to each community, region, province and nation to do their part in dealing with the effects of climate change. We have developed a collaborative strategy for the geographic region of Peel that builds on some of our existing policies and programs. We recognize that we will continue to need federal and provincial guidance and support for comprehensive implementation of this Strategy.

Our communities in Peel – extending from places along Lake Ontario like Port Credit in Mississauga, to high-density urbanized centres like downtown Brampton, and small communities like Palgrave in Caledon – are diverse in terms of their size, design, land use context and resources. However, they are all on the front-line of the sustainability challenge because it is at the community level where the effects of climate change (such as compromised air and water quality, heat alert days, and strained natural resources) will be experienced. It is also at this level that the greatest opportunities lie for both mitigating and adapting our neighbourhoods, natural systems and built infrastructure to anticipated impacts.

This Strategy recognizes the urgent need to respond to climate change at the local level. Many of the actions presented in this Strategy build upon the suite of policies, plans and programs already being undertaken by our partner organizations, and ensures they are to be applied, or revised, with consideration for anticipated climate change impacts. Other actions are new and reflect research, approaches or practices that have been identified through this study to address the climate change challenge. To develop this Strategy, we explored and defined the potential impacts of climate change here in Peel and consulted with a wide range of municipal and agency staff. The resulting Strategy includes

Note: For detailed information on climate change science, background information on project and detailed description of actions, please visit www.peelregion.ca/climatechange. 2

mitigation strategies to reduce greenhouse gas (GHG) emissions, the direct cause of climate change and adaptation strategies to prepare for and avoid impacts to our communities posed by our changing climate. While climate change presents our communities with unprecedented challenges, it also allows us prepare for potential opportunities.

Thank you for your interest in the Strategy. We look forward to your support during implementation, monitoring and continual renewal of our commitment to proactive action on climate change.

Sincerely,

Regional Chair Emil Kolb
City of Mississauga Mayor Hazel McCallion
City of Brampton Mayor Susan Fennell
Town of Caledon Mayor Marolyn Morrison
Credit Valley Conservation Authority Chair Councillor Pat Mullin
Toronto Region and Conservation Authority Chair Gerri Lynn O'Connor

The Project Team, Steering Committee and Communications Working Group for
the Climate Change Strategy

Vision

A region where everyone does their part to mitigate and adapt to climate change by leading greener lifestyles, embracing a low carbon economy, and by enhancing and protecting our natural systems.

Mission

To work collaboratively with our municipal partners, conservation authorities, residents, employees and businesses to combat climate change at the local level.

Principles

Throughout the implementation of the Strategy, the following six principles will guide the partners' actions and behaviour:

- **PARTNERSHIP**

The Peel Climate Change Strategy is a collaborative partnership among the Region of Peel, City of Brampton, City of Mississauga, Town of Caledon, Credit Valley Conservation and the Toronto and Region Conservation Authority (the partners). The partners also recognize value of partnerships with residents, businesses, stakeholders, community groups, non-profit organizations, institutions, other levels of government, schools and schoolboards, professional and scientific groups.

- **LEADERSHIP**

The partners will be innovative, will lead by example, and will advocate environmental sustainability within and beyond the community. Applicable best mitigation and adaptation practices from around the globe will guide their operations and shape their policies and plans in the right direction.

- **INTEGRATION**

The partners will integrate cultural, social, economic and environmental sustainability initiatives into strategic planning, capital and operational decision making.

- **SYNERGY**

The partners will meet sustainable goals and greenhouse gas reduction targets by seeking synergies among environmental, social, cultural and economic imperatives. The partners will also consider the direct and indirect costs of their actions and inactions.

- **ACCOUNTABILITY**

The partners will continue to be open in their decision making and will monitor, evaluate and report their climate change actions and inactions.

- **STEWARDSHIP**

The partners will inform, educate, engage and participate with the community to protect, conserve and enhance public health, natural heritage and the built environment.

Goals

Through this Strategy, the partners collectively commit to address the following six goals:

1. PROACTIVE AND RESPONSIVE PLANNING AND LEADERSHIP:

Effectively address climate change impacts on our communities, infrastructure, economy and natural heritage through existing and future plans, policies, procedures, technologies and education programs.

2. ACTIONS TO REDUCE GREENHOUSE GAS EMISSIONS (MITIGATION):

Peel is committed to become a leader in climate change mitigation. By 2050, reduce partners' corporate and community net emissions by 80% below 1990 levels¹, through a range of mitigation and carbon sequestration actions. Progress will be tracked via a greenhouse gas monitoring program.

3. TARGETED AND PROACTIVE ADAPTATION ACTIONS:

Improve Peel's resilience to the local impacts of climate change with a focus on elements of our communities, infrastructure, and natural heritage that are considered most at risk as determined from the Vulnerability Risk Assessment conducted under Action 1.1.

4. MAKING THE SHIFT TO A GREEN ECONOMY:

Build on and support the numerous green economic initiatives underway by partners and the community.

5. INCREASING AWARENESS AND LEVEL OF ENGAGEMENT THROUGHOUT PEEL:

Increase community awareness and level of engagement about climate change. Support local actions that can be taken to reduce GHG emissions and improve our ability to adapt to and mitigate climate change.

6. ONGOING RESEARCH AND ADAPTIVE RISK MANAGEMENT:

Continue to expand our understanding of emerging climate change strategies, science and technologies for GHG reduction and climate adaptation so that Peel's Climate Change Strategy remains current.

Actions

A series of actions, to be initiated over the next five years, are outlined below.

Each action is associated with a goal and includes a suggested timeframe for initiation, an indication of the focus area, and lead(s) and support(s) to implement the action.

Legend – Focus Areas:

Built Form and Infrastructure	
Communities	
Natural Heritage	
Other	
Overarching	

Legend – Timeframes:

Ongoing	O
Short Term:	
Initiate within 1 to 2 years	ST
Medium Term:	
Initiate within 2-5 years	MT

1. PROACTIVE AND RESPONSIVE PLANNING AND LEADERSHIP:

Effectively address climate change impacts on our communities, infrastructure, economy and natural heritage through existing and future plans, policies, procedures, technologies and education programs.

<p>1.1 Complete a vulnerability risk assessment of all infrastructure, of the community (such as assessment of human health impacts) and of natural heritage.</p>	<p>All</p> <p>ST</p>	<p>Region of Peel to lead</p>	<p>Area Municipalities and Conservation Authorities to support</p>
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<p>1.2 As municipal official plans, by-laws and policies (including Water Quality Plans, Stormwater Management Plans and Infrastructure Maintenance Plans) are updated on a regular cycle, ensure that they reflect climate change adaptation considerations targeted to reduce vulnerabilities to the projected impacts and achieve GHG reductions.</p>	 <p>All ST</p>	<p>Area Municipalities to lead</p>	<p>Region of Peel and Conservation Authorities to support</p>
<p>1.3 Build on existing decision making tools and strategies so that climate change mitigation and adaptation activities can continue in the spirit of collaboration.</p>	 <p>All MT</p>	<p>Region of Peel to lead</p>	<p>Area Municipalities and Conservation Authorities to support</p>
<p>1.4 Work with other jurisdictions to urge more stringent provincial action on the redevelopment of Ontario's Building Code.</p>	 <p>All ST</p>	<p>All partners to share equal responsibility</p>	
<p>1.5 Build on and update strategic plans and initiatives, policies, guidelines and standards related to land use and urban design to achieve sustainable, compact, complete communities to adapt to and mitigate climate change.</p>	 <p>All ST</p>	<p>Area Municipalities to lead</p>	<p>Region of Peel and Conservation Authorities to support</p>
<p>1.6 Address water, natural heritage and land management issues related to climate change through integrated watershed management.</p>	 <p>All ST</p>	<p>Region of Peel and Conservation Authorities to co-lead</p>	<p>Area Municipalities to support</p>

	MT		
1.7 Work with other jurisdictions to develop agricultural strategies in response to changes in weather and other potential climate change impacts.	 MT	Region of Peel and Conservation Authorities to co-lead	Area Municipalities to support
1.8 Review key or applicable public health programs and policies using a climate change lens.	 MT	Region of Peel to lead	Area Municipalities and Conservation Authorities to support
1.9 Enhance emergency management (which includes mitigation, response, preparedness and recovery) to adapt to climate change considerations.	 ST	Region of Peel and Area Municipalities to each update their respective plans.	Conservation Authorities to provide support to municipalities on emergency management with respect to flooding – will also update respective flood forecasting and warning systems per provincial policy.
1.10 Encourage the Province of Ontario to provide financial support to implement the adaptation actions in “Climate Ready: Ontario’s Adaptation Strategy and Action Plan”, which is based on recommendations in the Report of the Expert Panel on Climate Change Adaptation, entitled	 ST	Region of Peel to lead	Area Municipalities and Conservation Authorities to support

<p>“Adapting to Climate Change in Ontario”, 2009.</p>			
<p>1.11 Undertake a cost/benefit analysis of climate change adaptation and mitigation actions and inactions in the geographic region of Peel.</p>		<p>Region of Peel to lead</p>	<p>Area Municipalities and Conservation Authorities to support</p>

2. ACTIONS TO REDUCE GREENHOUSE GAS EMISSIONS (MITIGATION):

Peel is committed to become a leader in climate change mitigation. By 2050, reduce the partners' corporate and community net emissions by 80% below 1990 levelsⁱⁱ through a range of mitigation and carbon sequestration actions. Progress will be tracked via a greenhouse gas monitoring program.

2.1 Create a common understanding of actual and forecasted GHG emissions within Peel and at the partners' facilities by developing a series of corporate and community inventories by 2012.	 All ST	Region of Peel to lead	Area Municipalities to support
2.2 Assess existing monitoring systems and tools that correspond with the partners' ongoing GHG reduction programs.	 All ST	Region of Peel to lead	Area Municipalities and Conservation Authorities to support.
2.3 Build on and identify a series of progressive and cost-effective actions (such as corporate and community action plans, green development standards, etc.) using a strategic analysis to achieve the emissions reduction target.	 All MT	Area Municipalities/ Region of Peel to lead where appropriate	Conservation Authorities to support

<p>2.4 Continue to preserve existing trees and expand tree planting and related naturalization programs. Develop estimates of their potential long term benefits in countering the effects of ongoing GHG emissions through carbon sequestration.</p>	 <p>All MT</p>	<p>Conservation Authorities to lead</p>	<p>Region of Peel and Area Municipalities to support</p>
<p>2.5 Support the development and implementation of partners' new and ongoing sustainable transportation initiatives.</p>	 <p>All O</p>	<p>Area Municipalities/ Region of Peel to lead where appropriate</p>	<p>Conservation Authorities to support</p>
<p>2.6 Building on existing policies and programs, implement additional strategies to minimize waste generation and maximize resource recovery including energy recovery.</p>	 <p>ST</p>	<p>Region of Peel to lead</p>	<p>Area Municipalities and Conservation Authorities to support</p>
<p>2.7 Seek opportunities to show leadership through developing green development standards for all partners' corporate facilities and seek out opportunities to participate in community greening programs.</p>	 <p>ST</p>	<p>Area Municipalities to lead</p>	<p>Region of Peel and Conservation Authorities to support</p>

3. TARGETED AND PROACTIVE ADAPTATION ACTIONS:

Improve Peel’s resilience to the local impacts of climate change with a focus on elements of our communities, infrastructure, and natural heritage considered most at risk, as determined from the Vulnerability Risk Assessment conducted under action 1.1.

<p>3.1 Undertake specific initiatives, such as implementing best practices related to urban forestry, which are intended to maintain and restore natural habitats, trees and naturalized spaces within the urban system. (See section 3.4 of the Peel Climate Change Strategy Background Report for a list of best practices)</p>		<p>Co-led by Conservation Authorities and Area Municipalities</p>	<p>Region of Peel to support</p>
<p>3.2 Explore the creation of a regional forest management program for landowners.</p>		<p>Co-led by Region of Peel and Area Municipalities</p>	<p>Conservation Authorities to support</p>
<p>3.3 Develop a near urban food production strategy to identify areas for local food production to help address food security and support small scale local food production, such as those listed in the Grown in Peel Guide, in urban and rural areas of Peel.</p>		<p>Area Municipalities to lead</p>	<p>Region of Peel and Conservation Authorities to support</p>

<p>3.4 Redesign and retrofit water collection and conveyance infrastructure and systems to reduce vulnerabilities due to climate change. (See section 3.4 of the Peel Climate Change Strategy Background Report for a list of adaptation measures)</p>	 <p>MT</p>	<p>Co-led by Region of Peel and Area Municipalities</p>	<p>Conservation Authorities to support</p>
<p>3.5 Work with the farming community to better understand and address climate change impacts, e.g. use of best management practices to reduce soil erosion and the need for chemical fertilizers.</p>	 <p>O</p>	<p>Co-led by Region of Peel and Conservation Authorities</p>	<p>Area Municipalities to support</p>
<p>3.6 Building on existing programs, implement additional water quality and water and wastewater conservation strategies and incentives.</p>	 <p>ST</p>	<p>Co-led by Region of Peel and Conservation Authorities</p>	<p>Area Municipalities to support</p>

<p>3.7 Develop and enhance programs to alleviate public health vulnerabilities.</p>		<p>Co-led by Region of Peel and Area Municipalities</p>	<p>Area Municipalities and Conservation Authorities to support</p>
<p>3.8 Enhance pavement design to prevent buckling due to intense heat events (e.g. use new designs such as mesh joints during pavement re-construction or repair).</p>		<p>Co-led by Region of Peel and Area Municipalities</p>	<p>Conservation Authorities to support</p>

4. MAKING THE SHIFT TO A GREEN ECONOMY:

Build on and support the numerous green economic initiatives underway by partners and the community.

<p>4.1 Work in partnership to develop guidance for a corporate sustainable procurement strategy to improve quality of products to minimize waste. The strategy will build in the opportunity for customization by each of the partners.</p>	 <p>MT</p>	<p>Region of Peel to lead (specifically a joint procurement group similar to Greenlands Securement Program. Clean Air Council is an existing opportunity)</p>	<p>Area Municipalities and Conservation Authorities to support</p>
<p>4.2 Develop a Corporate Climate Change Business Planning Tool Kit. (See Section 3.4 of the Peel Climate Change Strategy Background Report for details)</p>	 <p>MT</p>	<p>Conservation Authorities to lead</p>	<p>Region of Peel and Area Municipalities to support</p>
<p>4.3 Explore opportunities for developing additional eco-business parks in Peel and the use of incentives for green innovation in collaboration with industry.</p>	 <p>ST</p>	<p>Conservation Authorities and Area Municipalities to co-lead</p>	<p>Region of Peel to support</p>
<p>Prepare a joint feasibility study to determine how to optimize the use of alternative energy sources through community energy planning and</p>	 <p>ST</p>	<p>Co-led by Region of Peel and Area Municipalities</p>	<p>Conservation Authorities to support</p>

through pilots in district energy in Peel.			
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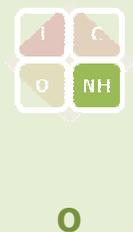
5. INCREASING AWARENESS AND LEVEL OF ENGAGEMENT THROUGHOUT PEEL:

Increase community awareness and level of engagement about climate change. Support local actions that can be taken to reduce GHG emissions and improve our ability to adapt to and mitigate climate change.

<p>5.1 Develop a Peel-wide communications strategy to inform and engage staff and elected officials.</p>	 <p>ST</p>	<p>Region of Peel to lead</p>	<p>Area Municipalities and Conservation Authorities to support</p>
<p>5.2 Develop a Peel-wide communications strategy to inform and engage members of the public, such as youth, young adults and businesses.</p>	 <p>MT</p>	<p>Region of Peel to lead</p>	<p>Area Municipalities and Conservation Authorities to support</p>
<p>5.3 Work with partners to increase community awareness and level of engagement about climate change impacts.</p>	 <p>ST</p>	<p>Region of Peel to lead</p>	<p>Area Municipalities and Conservation Authorities to support</p>
<p>5.4 Build capacity and support the development of community-led climate change adaptation and mitigation initiatives.</p>	 <p>MT</p>	<p>Co-led by Region of Peel and Area Municipalities</p>	<p>Conservation Authorities to support</p>

6. ONGOING RESEARCH AND ADAPTIVE RISK MANAGEMENT:

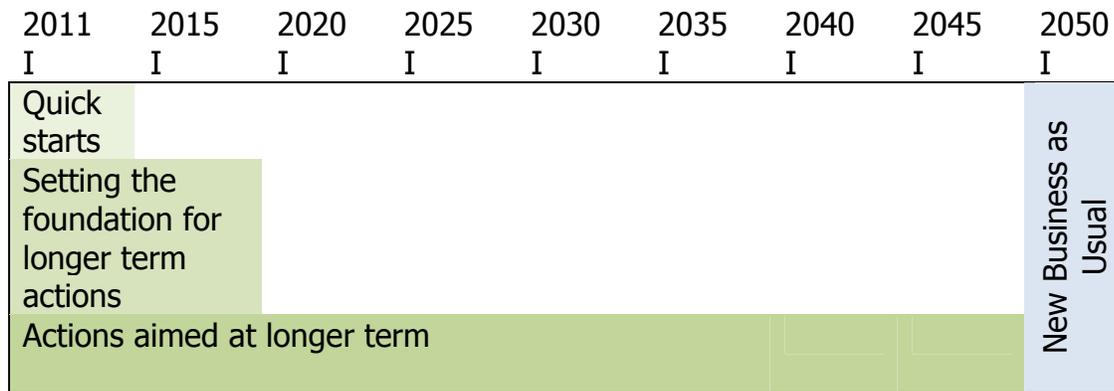
Continue to expand our understanding of emerging climate change strategies, science and technologies for GHG reduction and climate adaptation so that Peel’s Climate Change Strategy remains current.

6.1 Enhance local climate modelling and monitoring capabilities. (See section 3.4 of the Peel Climate Change Strategy Background Report for details)		Region of Peel/ Area Municipalities to lead where appropriate	Conservation Authorities to support
6.2 Model and monitor the impacts of changes to precipitation on groundwater recharge and flood risk.		Conservation Authorities to lead	Region of Peel and Area Municipalities to support
6.3 Continue and expand on monitoring of key terrestrial and aquatic species and habitats.		Conservation Authorities to lead	Region of Peel and Area Municipalities to support
6.4 Undertake targeted research projects in support of building local knowledge about responses to climate change by engaging local universities/colleges. (See section 3.4 of the Peel Climate Change Strategy Background Report for a list of target research topic areas)		Conservation Authorities to lead	Region of Peel and Area Municipalities to support

Priority Setting and Considerations for Future Action

This Climate Change Strategy includes a series of actions for initiation within the next five years. The partners recognize that the first phase of implementation will need to include a series of actions that can be quickly implemented and the establishment of foundational research and planning pieces to set the stage for future action.

A Three-Phased Transitional Approach to Climate Change Planning³



Considerations for future, longer-term action by the partners include, but are not limited to:

- Continuing and expanding education and outreach programs about climate change and energy use;
- Actively soliciting partnerships with various organizations and groups in the community to implement various actions at the local level;
- Revising priority actions based on the outcome of the vulnerability assessment;
- Monitoring progress against targets and other relevant factors such as cost savings on a continual basis and provide stakeholders with regular reports;
- Developing an “adaptive risk management” tool that facilitates the adjustment of actions based on successes;
- Undertaking revised corporate and community inventories and revise targets as necessary based on the results; and
- Continuing to integrate community and business partners in the implementation of the Strategy.

Our Commitment to Implementation

The six partners commit to the goals and actions described in this document and to the ongoing monitoring of their progress during the implementation of the Peel Climate Change Strategy. This will allow us assess to the results and impacts of the actions we have taken.

The partners propose to develop a rigorous **monitoring framework** – to monitor the execution of the actions and adjust priorities in response to changes in climate science; in this way, the Strategy will become a living document – reflective of new priorities as they emerge.

The partners will establish a **Strategy Implementation Group** with staff-level appointees from each organization. The group will meet and develop a terms of reference, clearly establish roles and responsibilities, establish a facilitator/chair, and work with the partners to establish an agreed-upon set of priorities for the first year of implementation, and each year thereafter. The group will establish its meeting frequency (likely quarterly, or as needed).

Each organization's representative on the group will act as an internal liaison to their partner organization – ensuring consistent messaging about the Strategy and working to engage other staff members and Council/Board members in the implementation process.

In addition, each of the partner organizations will commit to developing action plans for their organizations. These organizational action plans will follow a consistent template and will include a series of commitments related to the Strategy.

The group will monitor and report on the progress of the actions. A **Climate Change Action Progress Report** will be developed that can be shared with their Councils/Boards, staff and the public-at-large.

As climate science evolves, and/or as conditions change in Peel, the Implementation Monitoring Group will have the authority and responsibility to adjust the actions associated with the Strategy on an annual basis. This system for **continual renewal** will ensure that the Strategy is nimble and flexible as time passes and priorities change. The partners will respond to the results of the monitoring program with the modification of the Climate Change Strategy. Over the longer term the vision and goals established for the Strategy will likely remain consistent. The Climate Change Strategy will be renewed on a five year cycle, with an eye to revising the climate science and re-assessing the targets and actions to ensure that the partners are aligning themselves with a phased approach.

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The Project Team and Steering Committee extend thanks to all workshop participants, contributing organizations and reviewers.

ⁱ This target is in line with the target introduced by the Intergovernmental Panel of Climate Change (IPCC), which is the leading international body for the assessment of climate change. - <http://www.ipcc.ch/>

ⁱⁱ This target is in line with the target introduced by the Intergovernmental Panel of Climate Change (IPCC), which is the leading international body for the assessment of climate change. - <http://www.ipcc.ch/>

³ Phased approach adapted from http://oee.nrcan-rncan.gc.ca/publications/cem-cme/ices_e.pdf