



INTEGRATING CLIMATE CHANGE INTO OFFICIAL PLANS AND MUNICIPAL DECISION-MAKING

TABLE OF CONTENTS

PART 1: VALUE OF INTEGRATING CLIMATE CHANGE INTO MUNICIPAL OFFICIAL PLANS	1
CLIMATE CHANGE AND MUNICIPAL OFFICIAL PLANS	1
CLIMATE CHANGE IN PROVINCIAL POLICY STATEMENT AND OFFICIAL PLANS	3
IMPORTANCE OF BRINGING CLIMATE CHANGE INTO OFFICIAL PLANS	4
INTEGRATING CLIMATE CHANGE INTO OTHER MUNICIPAL PLANS	4
ONTARIO'S GHG EMISSIONS IN 2019	8
PART 2: PROCESS OF INTEGRATING CLIMATE CHANGE INTO OFFICIAL PLANS	9
CONNECTION BETWEEN GHG REDUCTIONS, LAND USE, INFRASTRUCTURE DEFICIT AND FINANCIAL SUSTAINABILITY	9
DIFFERENCE BETWEEN CLIMATE CHANGE INTEGRATION AND CLIMATE CHANGE IMPLEMENTATION	12
LEVEL OF CLIMATE CHANGE DETAILS IN AN OFFICIAL PLAN	15
INTEGRATING CLIMATE CHANGE IN OFFICIAL PLANS OF TIERED MUNICIPAL GOVERNMENTS	16
PART 3: BEYOND OFFICIAL PLANS: INTEGRATING CLIMATE CHANGE INTO MUNICIPAL DECISION-MAKING (IN DEVELOPMENT)	30



PART 1- VALUE OF INTEGRATING CLIMATE CHANGE INTO MUNICIPAL OFFICIAL PLANS

Climate Change and Municipal Official Plans

Municipalities are on the front lines of climate action. It is crucial for municipalities to respond to local climate change impacts to reduce economic costs and potential environmental, social and health risks. Many municipalities have been exploring methods to better integrate climate change into their municipal decision-making. One mechanism identified to advance that goal is the policy direction of incorporating Climate Change into Official Plans (OPs).

Local decisions about growth management significantly influence the amount of energy used and have greenhouse gas and cost implications for local governments, businesses, institutions, and residents. The direction and principles that govern local decisions about land use and community energy needs are laid out in OPs. As such, how the community impacts and is impacted by climate change should be considered when planning for growth and infrastructure.

While the principle of incorporating climate change into municipal decision-making has been identified as a policy direction at the municipal, provincial and federal levels; many municipalities are seeking additional guidance to better understand how to put this into practice. Towards that goal, Clean Air Partnership convened several consultations bringing together municipal planning, climate change, energy and public health staff to gather input and better understand commonalities and differences in perspectives across municipalities and departments.

This primer summarizes the collective input received via those consultations and provides the beginning of a road map for municipalities seeking guidance on integrating climate change into their OPs. A companion document, *Climate Change Integration Consultation Guide*, is being developed with suggested starting questions to facilitate dialogue on climate change integration across municipal departments. As more of those climate change integration conversations occur, selected approaches and their rationale can be shared across Ontario municipalities.

This primer outlines:

- Approaches being used to bring climate change considerations into OPs;
- General areas of agreement and variations in perspectives across municipal departments (ex. planning, energy, stormwater, urban forest, public works, etc.);
- Case studies of approaches being used by municipalities;

As municipal discussions on climate change integration into OPs and other municipal plans occur, Clean Air Partnership will continue to compile and analyze commonalities and differences, and report back to municipalities to share insights, actions and outcomes.

Climate Change in Provincial Policy Statement and Official Plans

Land use planning in Ontario is shared between the province and municipalities. The province sets the ground rules and directions for land use planning through the Planning Act and the Provincial Policy Statement (PPS). The PPS is a high-level document that provides direction on land use planning and development policies in a province. In Ontario, the current (PPS) came into effect on May 1, 2020, and covers policies about managing growth, managing natural resources, protecting the environment, and public health and safety.

The PPS includes the following directions linked to climate change:

- The efficient use and management of land and infrastructure
- Environmental protection
- Energy conservation
- Preparing for the impacts of climate change

Municipalities implement the province's policy framework through local Official Plans. An Official Plan (OP) is a municipal policy document that guides both short-term and longer-term development within a community. The policies established in an OP are considered necessary to promote orderly growth and compatibility amongst different land uses in alignment with the province's policy direction.

An OP deals with issues such as:

- Location of new housing, industry, offices and commercial uses;
- Allocation of roads, water mains, sewers, parks and schools;
- When, and in what order, parts of your community will grow; and
- Community improvement initiatives.

Importance of Bringing Climate Change into Official Plans

The direction and principles that govern local decisions about land use and community energy needs are laid out in municipal OPs. Incorporating Climate change language into an OP would help identify how the community's growth and land use management will affect greenhouse gas emissions (GHGs) and climate change vulnerabilities to its service delivery, infrastructure, residents and businesses, particularly those who are most vulnerable.

Municipal OPs provide an opportunity for climate change education within the planning department and across other municipal departments, and within council. This provides an opportunity for municipal staff to understand how municipal services and decisions affect climate (mitigation implications) and how climate impacts the community and municipal services and assets (resilience implications).

As OPs require public consultation, there is an opportunity for climate education within the community. It would be of value for planning and climate staff to discuss how the OP can serve this educational opportunity and the level of climate change background appropriate to include in the OP. The OP could describe why climate change is important to the municipality and how climate actions and commitments at the municipal level align with provincial and federal climate commitments.

Integrating Climate Change into Other Municipal Plans

While incorporating climate change into an OP is important, it is only one of many efforts that allow municipalities to reduce GHGs and build resilience to climate change. Municipal staff recognize that to incorporate climate change into municipal decision-making, there is the need for climate change to be integrated into various municipal plans (ex. Transportation Plans, Stormwater

Plans, Asset Management, etc.).

In order to advance that goal, Clean Air Partnership is developing an accompanying Climate Change Integration Consultation Guide to provide municipal staff with some preliminary questions to discuss and understand the climate implications and opportunities associated with various municipal implementation plans. In addition, to enable climate implementation opportunities, OPs need to reference the use of other mechanisms such as Green Standards or by-law authorities to enable municipalities to enact those authorities towards achieving their climate goals.

The Canadian Institute of Planners published a [Model Standard of Practice for Climate Change Planning](#) for Canadian municipalities that provides guidance to planners on climate mitigation and adaptation implications and opportunities.

Sample Climate Change Language for Inclusion in OPs

Increasing global surface temperatures, infectious diseases, melting glaciers, wildfires, extreme weather, and rising sea levels are indications of global climate change impacts resulting from GHG emissions from human activities. In Ontario, climate change impacts include:

- More variable and extreme local weather events such as heavy rains and prolonged droughts;
- Stressed and vulnerable ecosystems, wildlife and their habitats;
- Additional private and public costs associated with industries such as tourism and agriculture;
- Public health risks from hotter weather, more flooding, and insect-borne diseases; and
- Increased damage to public infrastructure such as sidewalks, roads and bridges.

Moving forward, municipalities need to respond to climate change impacts to reduce economic costs and potential environmental, social and health risks through actions that:

- Mitigate climate change - actions that reduce GHG emissions that cause climate change (also referred to as - avoiding the unmanageable).
- Adapt to climate change - actions that prepare for changes that are occurring, or are likely to occur, in the future (also referred to as - managing the unavoidable).

How are GHG Emissions Contributing to Global Warming?

GHGs absorb thermal infrared radiation from the sun and keep the heat from leaving our atmosphere and being radiated back into space. It is this physical property of GHGs that causes the greenhouse effect.

The greenhouse effect is a natural phenomenon that has resulted in the Earth having a climate conducive to life (not too hot, not too cold – which has often resulted in the Earth being called the Goldilocks planet).

By using fossil fuels to meet our energy needs, humans are impacting the Earth's carbon cycle and increasing the amount of GHG emissions in the atmosphere, thereby increasing global average temperatures and disrupting the Earth's natural carbon/climate cycle.

In Ontario, transportation, electricity generation, buildings, and waste account for the majority of GHG emissions. Multi-sectoral actions need to be taken to reduce GHGs and meet the targets the IPCC has identified as necessary to keep global average temperatures to 1.5 to 2°C above pre-industrial levels.

Ontario's GHG Emissions in 2019

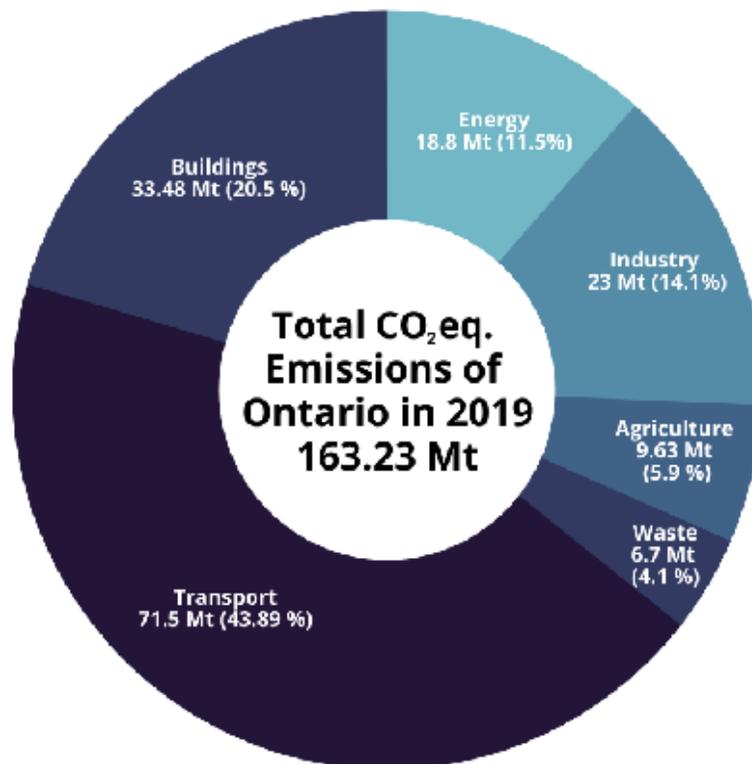


Figure 1: Ontario's GHG emissions in 2019

Source: Environment and Climate Change Canada (2021) [National Inventory Report 1990-2019: Greenhouse Gas Sources and Sinks in Canada](#).

PART 2- THE PROCESS OF INTEGRATING CLIMATE CHANGE INTO MUNICIPAL OFFICIAL PLANS

Municipalities can be large energy users within the community, accounting for between 2 – 6% of the community's GHG emissions, depending on the services they deliver. Therefore, municipal efforts to reduce energy and GHGs from their operations are critical to demonstrate leadership in addressing climate change. While a municipality has direct control over their operations, it is important to recognize the considerable influence municipalities have on community emissions resulting from land use and growth decisions. How a community is built, and the energy needed for buildings, transportation, and waste systems will influence 40 – 60% of a community's total GHG emissions.

Many municipalities have passed Climate Change Emergency Declarations and have set science-based GHG reduction targets of 30 – 50% by 2030, leading to net-zero by 2050. Ontario's land use planning system supports GHG reductions through the Provincial Policy Statement (PPS), provincial plans (e.g., Greenbelt Plan and Growth Plan for the Greater Golden Horseshoe) and a range of authorities and planning tools (such as green standards and climate change by-laws). Municipalities can reference the provincial plans to implement development practices that minimize GHG emissions and contribute towards more sustainable, healthier, and economically strong communities.

Connection Between GHG Reductions, Land Use, Infrastructure Deficit and Financial Sustainability

The way our communities are designed, built and managed will have a considerable influence on the energy needed to heat and cool our buildings

as well as how people travel. For example, a [study undertaken by the University of Toronto](#) found that across most of the Greater Toronto and Hamilton Area (GTHA), GHGs from private automobile use are on par with building heating. Once beyond the transit intensive central core, however, transportation emissions often surpass building operations. Moreover, the highest GHGs emissions from transportation were in lower-density suburbs, primarily due to more private automobile use.

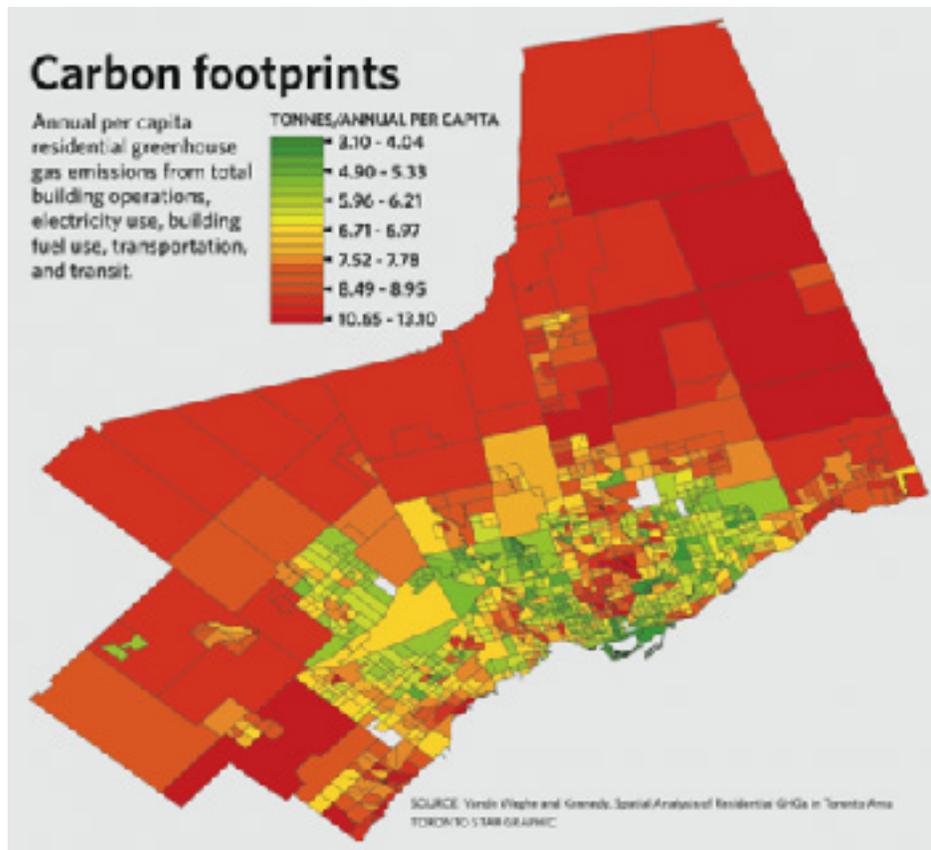


Figure 2: [A Spatial Analysis of Residential Greenhouse Gas Emissions in the Toronto Census Metropolitan Area](#), Jared R. VandeWeghe and Christopher Kennedy, 2007.

In addition to influencing energy and GHGs, how our communities are built impacts infrastructure costs and plays a significant role in addressing municipal financial sustainability and Canada's growing infrastructure deficit. In 2019, Canada's infrastructure deficit was calculated to be over \$150 billion. The Federation of Canadian Municipalities estimates that municipally controlled water and wastewater facilities alone need an injection of over \$50 billion to renew infrastructure in poor condition.

Halifax and Calgary have led Canadian municipal efforts to calculate the role land use planning can play in addressing energy, GHGs and infrastructure costs. In their Plan It Calgary study, Calgary examined the infrastructure implications of two growth scenarios - Compact and Dispersed. The recommended Compact land use scenario resulted in a 25% reduction in the land area required and a 33% reduction in infrastructure costs compared to the Dispersed Scenario. In their Costs and Benefits of Growth Scenarios study, Halifax Regional Municipality found that adopting a more condensed land use scenario could result in more than \$3 billion in reduced costs.

More studies undertaken to estimate infrastructure, operational, and rehabilitation costs for different land use archetypes at the municipal level would significantly increase our understanding of the role growth management and land use archetypes play in ensuring an appropriate balance between revenue and infrastructure construction, servicing, and rehabilitation costs.

Strong Towns, an organization that works in the US and Canada to maximize efficient use of resources to foster resilient and livable communities, has developed a [Value Per Acre Analysis Tool](#) that enables municipalities to compare land use scenarios with property tax revenue. This tool identifies which land use provides adequate revenue to cover their servicing and rehabilitation infrastructure costs and which are most likely to require subsidies and/or contribute to further infrastructure deficits.

The Difference Between Climate Change Integration and Climate Change Implementation

Municipal consultations on OP and climate change have identified the following key considerations:

- There was recognition that while an OP is primarily a planning tool, it can also serve as an educational opportunity for highlighting the connection between land use, growth management and the GHG emissions associated with the community's chosen land use.
- It was recognized that an OP should reference language for why climate action is important to the municipality and why climate change needs to be incorporated into OPs. There is the opportunity for the insertion of the climate change language to serve as an educational opportunity for describing the context, science, roles and commitments of different orders of government, social, economic and environmental connections and synergies.
- There was general agreement that the OP should define what climate change means to the municipality, their role, the actions that the municipalities should take and the reporting requirements.
- There was some differentiation in perspective between planning and climate staff relating to the level of detail that the OP should contain regarding the general climate change language and municipal commitment and information on priority actions.

Even with the inclusion of climate change language into OP, there was recognition across municipal staff from different departments that integrating climate change language into OPs does not sufficiently achieve the goal of incorporating climate change into municipal decision-making.

To follow through on the climate change integration goal, a municipality should develop climate action plans that speak to the local circumstances,

such as current and future impacts of climate change on the community. Mitigation and Adaptation Climate Plans should outline the targets, actions, monitoring, reporting and update structure for municipalities to reduce GHG emissions or improve the climate resilience of their community.

Potential Municipal Planning and Climate Staff Discussion Points

It would be of value for planning and climate staff within the municipality to discuss the following questions to determine the perspectives across the departments regarding the integration of general climate change language into OPs.

- Should general language regarding the science of climate change and its global and community impacts be brought into the OP? If so, what points should this general section aim to get across? If not, why would bringing this topic into an OP be inappropriate?
- What would be the pros and cons of incorporating general climate change language into OP? Discussions regarding the possible pros like educational opportunities for planning staff/council, community education during OP consultation may be of value. Discussions regarding possible cons such as incorporating information on climate action and commitments at other levels of government. For example, will changes at other levels of government require an OP amendment if the targets or plans get updated, etc.?

If the municipality does not yet have a council direction to develop a Climate Action or Community Energy/Emissions Plan, then the OP should state that the municipality will develop one that will commit them to: (Resource: [Guideline on Community Emissions Reduction Planning](#))

- Undertake an energy and GHG emission inventory;
- Set a GHG reduction target;
- Outline actions that are prioritized for implementation by the municipality and its stakeholders;
- Identify indicators on progress made towards actions and/or emissions reductions;
- Develop a monitoring and reporting framework for the Plan and the timeframe associated with progress reporting; and
- Set up a timeframe and process for evaluation and update of the Plan.

If the municipality does not yet have a council direction to develop a Climate Adaptation/Resilience Plan, the OP should state the direction to develop such a Plan. The Plan itself should include:

- The context and rationale for the need to address climate change adaptation and resilience (i.e., impacts of severe weather events);
- The scope of the Plan: departmental/corporate-wide/community/sector-specific (e.g. agriculture, infrastructure);
- The actions that will be undertaken to identify and mitigate risk and vulnerabilities and build resilience to climate changes impacts;
- The monitoring and reporting framework, and:
- Timeframe and process for evaluation and updating of the Plan.

Level of Climate Change Details in an Official Plan

From the discussions across municipal staff, there may be differences in perspective between planners and climate change staff related to the level of detail within climate plans that should be incorporated into OPs. Climate change staff feel that additional detail adds strength to the commitments made in climate plans. On the other hand, the planning staff noted that too much detail increases the likelihood of necessitating OP amendments, taking a significant amount of time. This area would benefit from further conversations between climate/energy/environment and planning staff.

It is recommended that planning and climate change staff meet to discuss the pros and cons of different levels of detail reading the plan for inclusion into OPs.

Suggested questions for discussion can include:

- What would be the value of including GHG reduction targets, climate mitigation and resilience actions, monitoring and reporting framework within an OP? As these plans are updated regularly, what impact would those updates have on increasing the need for OP amendments to ensure that the OP is aligned with municipal plans?
- What is the value of making specific reference to climate actions identified in plans? Would there be value in identifying the actions within each of the themes of the OP or setting up a separate climate change section? Or would it be better to reference the other municipal plans that are critical for securing the implementation of actions that meet the OP priorities? Or some combination of the above?
- Does incorporating this level of information into the OP strengthen the support to implement climate plans? If so, how? If not, how come?

The Value of Climate Change Integration into Official Plans of Tiered Municipal Governments

1) Upper-Tier OP and Climate Change Integration Approach

For those jurisdictions within a two-tiered system, upper-tier municipalities (such as counties and regional/district municipalities) deal with broad land use planning issues that concern more than one local municipality. All upper-tier municipalities have their own OPs and are responsible for approving OPs of their lower-tier municipalities. Regional OPs provide guidance to local municipalities and there is a requirement that the OPs of the lower-tier municipalities must conform to the Regional OP. Therefore, Regional OPs can provide guidance and direction to their lower-tier municipalities regarding climate change integration as well as other planning direction for climate change implementation.

For example, [York Region's OP](#) directs how lower-tier municipalities must develop community energy plans in compliance with the Regional OP: *“These plans will detail the municipality’s energy use requirements and establish a plan to reduce energy demand and consider the use of alternative and renewable energy generation options and district energy systems and will ensure that communities are designed to optimize passive solar gains.”*

Therefore, regional governments play a critical role in setting the direction for their lower-tier municipalities regarding how climate change will be considered within the OP, overall planning processes and on specific instructions, as evidenced above.

York Region Case Study

York Region has been working since 2016 to develop a range of climate change-related plans:

- Energy Conservation and Demand Management Plan - corporate mitigation
- Asset/Risk Management Plan - corporate adaptation
- Community Energy Plan - community mitigation
- Municipal Comprehensive Review (MCR) - community adaptation

York Region is now developing a Climate Action Plan where vulnerability assessments are being conducted (e.g. health, roads and bridges, natural systems, energy agriculture and so on) to help set climate targets.

The Climate Action Plan process involves:

- Conducting a current state analysis;
- Incorporating this with corporate and community actions;
- Identifying gaps; and
- Developing a climate change action plan to address these gaps.

This Climate Action Plan will inform policy updates for York Region's OP review. The Region expects to reference existing corporate and municipal actions in the revised OP and use an infographic or alignment map to illustrate overlaps and gaps.

The Region plans to integrate their Climate Action Plan into their OP by inserting climate change considerations into the various chapters of the OP, including the sustainable natural environment, healthy communities, economic vitality, urbanization, agricultural and rural areas and servicing our population. Some example areas are outlined below.

Sustainable natural environment:

- Recognize the role natural heritage sites play in moderating climate change impacts.
- Introduce tree canopy cover targets (for urban forests).
- Watershed targets and objectives.

Healthy communities:

- Expand climate change and air quality detail.
- Introduce GHG emission reduction targets and support high-priority actions.
- Detail how climate change impacts human health (especially vulnerable populations).

Economic vitality:

- Detail the financial case for climate mitigation and adaptation.
- Full lifecycle costing.

Durham Region Case Study

Durham Region's experience with integrating climate change into their new OP emphasizes that integration does not need to come at the cost of important detail. The Region plans to include information on the policies/actions committed to within their climate mitigation and adaptation plans such as:

- District energy systems
- Urban tree canopy targets
- Electric vehicle targets
- Smart city measures
- Green infrastructure
- Transit-friendly community design

Durham Region is going through the MCR process to create a new OP called "Envision Durham 2041: Our Region. Our Plan. Our Future". Incorporating climate change considerations throughout this new OP is a key goal.

Since the Region's previous OP review, there have been changes in Provincial legislation. These changes are set to guide this OP review. These include the updated:

- Provincial Policy Statement;
- Growth Plan amendment (that provided population employment forecasts to 2051);
- Planning Act;
- Water Resource Protection Plan

The MCR plans to address several socio-economic and environmental matters as required under new provincial legislation.

The Region has divided work into the following areas (while noting that climate

change is interdisciplinary, meaning it is an important consideration in each area):

- Growth management
- Housing
- Agriculture/rural system
- Environment/Greenlands system
- Climate change/healthy neighbourhoods
- Transportation system

Some examples of how the Region intends to integrate climate change are:

In terms of the environment/Greenlands system, the MCR plans to:

- Incorporate the new Provincial Growth Plan's natural heritage system additions.
- Update the Greenbelt Plan natural heritage system (including minor greenbelt boundary adjustments and the addition of urban river valleys).
- Review water resource system mapping (including the Lake Simcoe Protection Plan policies and source protection issues).
- Update watershed planning (via a partnership with local conservation authorities) to include climate change considerations and embed recommendations in the OP.

In terms of climate change/healthy neighbourhoods, the MCR plans to:

- Incorporate climate change policy requirements from the provincial land use plans (Growth and Greenbelt Plans).
- Incorporate climate change policy recommendations and initiatives from other levels of government
- Ensure conformity with Provincial guidance materials (including community emissions reduction planning, low impact development and green infrastructure).

- Develop OP policies from Regionally led climate change initiatives (from the Local Climate Action Plan, Adaptation Plan, Community Energy Plan and others).

The Region is conducting background research to develop various discussion papers. It also consults with lower-tier municipalities as well as citizen advisory committees (such as the Durham Agricultural Advisory Committee and the Environmental Advisory Committee) for input. More information on Durham Region OP update process is [available here](#).

Peel Region's Approach to Official Plan and Climate Change Integration

Peel Region has been advancing climate action work through the [Peel Climate Change Partnership](#) that brings together all lower-tier and Conservation Authority partners. Climate Change is one of 13 focus areas that make up the Region's OP Review and MCR.

Top areas where climate change policies are being integrated throughout the Regional OP include:

In addition to climate integration regarding the 13 focus areas and their associated chapters, a climate section has been added to the OP that includes:

- A preamble to climate change and how Regional and local land use can help address impacts;
- Broad goals and objectives for climate change reflecting provincial policies;
- Policy direction for GHG emission reduction and adaptation planning, including direction for requiring updated GHG inventories;
- Policy direction to undertake infrastructure risk and vulnerability assessments; and

- Policy direction to support climate change planning through collaborative partnerships.

Several studies are taking place to identify climate implications of the Settlement Area Boundary Expansion review, with a report on that going to the council in 2022.

More information on the Peel Region OP process is available [here](#).

2) Lower-Tier OP and Climate Change Integration Approach

Lower-tier municipalities are required to develop their OP and ensure that it is in alignment with the Regional/County level OP. Therefore, the Regional/County level OP is critical for driving the climate integration requirements/direction for lower tier municipalities. However, lower-tier municipalities also have the opportunity to play a leadership role by strengthening their OP and climate change integration and setting a precedent or example for neighbouring jurisdictions (and the Regional/County level government).

Burlington's Climate Change and Official Plan Integration Approach

Burlington's climate mitigation actions are guided by its [Climate Action Plan](#) that outlines the actions Burlington will use to achieve its GHG reduction target. The update to the OP has focused on alignment between the OP and the targets and actions within the City's Climate Action Plan.

From a resilience to climate impacts perspective, the City is developing a Climate Adaptation Plan to assess the climate risks to the community and identify actions to mitigate and address those risks. Municipal departments are undertaking measures to address community climate risks outside of what is specified in the Adaptation Plan.

Upon passing a Climate Emergency in 2019, council identified a climate lens approach and that all council reports address climate implications to build climate change considerations into municipal decision-making. The 2018 OP was updated and approved in 2020 by the new Burlington council (currently under appeal). The OP has aligned priority growth patterns to coincide with transit priority routes.

The approach used by Burlington to integrate climate change into its OP is to dedicate the entire **Chapter 4** to Climate Change and Air Quality. The City also recognizes the far-reaching influence that climate has by focussing on climate integration in chapters such as:

- **Chapter 1** – Healthy and Greener City
- **Chapter 6** – Multi-modal Transportation
- **Chapter 7** – Urban Design – Sustainable Building and Development Guidelines
- **Chapter 8** – Major Transit Station Areas
- **Chapter 12** – Implementation Guidance – Area Specific Planning
- **Appendix D:** Sustainable Development Principles and Objectives

Chapter 12, 'Implementation Guidance' addresses how climate considerations in the OP will get incorporated and implemented across municipal plans. In addition to climate change integration within the OP, there are also significant efforts to incorporate climate change into other municipal plans to ensure implementation including:

- Climate Adaptation Plan
- Sustainable Buildings and Development Guidelines Review
- Major Transit Station Area – Area Specific Planning
- Integrated Mobility Plan
- Cycling Plan
- Urban Forestry Master Plan Update
- Parks Master Plan
- Asset Management Plan Update
- Corporate Policy – Energy and Sustainable Buildings

3) Single Tier Official Plan and Climate Change Integration Approach

City of Toronto Case Study

The approach guiding OP and climate change integration in Toronto addresses the climate connections, implications, policies, and actions across the various chapters of the OP.

- **Chapter 2:** Shaping the City, Section 2.3.2 Green Space System and Waterfront – focuses on integration with the Greenbelt Plans and Greenbelt River Valley Connections, enhancing lands along the water's edge for ecosystem services and human and wildlife uses. Also designated 68 new Environmentally Significant Areas (ESA) and expanded 14 existing ESAs as well as Provincially Significant Areas and enhanced their protection via the OP. Chapter 2 also includes an Energy section requiring secondary plans to assess opportunities to address peak demand reductions, resilience to power disruptions, and low carbon distributed energy opportunities.
- **Chapter 3:** Building a Successful City updated the Natural Hazard section to address slope concerns and protections. Most of the environmental policies are identified in Policy 3.4.1. Policy 1, the foundation policy, identified the implementation tools including, the Ravine and Natural Features Protection by-law, Toronto Green Standard and the Wet Weather Flow Master Plan. Climate change policies are added into Public and Ecosystem Health, Biodiversity and Light Pollution. Policy 3.4.18 addresses energy policies. Policy 3.4.1 describes how development will reduce impacts of climate change on biodiversity and ecosystem health, reduce GHG emissions and advance low carbon distributed energy opportunities, consider impacts of climate change and promote green infrastructure.

- **Schedule 3:** Energy Strategy Application Requirements that require a complete application from the developers of large sites include an energy strategy to identify low carbon opportunities right from the beginning of the development planning process. So far, over 200 energy strategies have been submitted and reviewed. Schedule 3 also includes a Soil Volume Plan requirement for all developments to ensure adequate soil volume to support plant growth.
- **Chapter 5:** Implementation – Making Things Happen is where Toronto Green Standards authorities are activated and secured. These site plan authorities are available to all Ontario municipalities.

There is also a Toronto Green Roof Bylaw (aligned with Authority Section 108 of the City of Toronto Act). Since 2010 there have been over 844 green roof installations with an annual benefit of 222 million litres of stormwater retention and 225 tonnes of CO2 sequestration. The Toronto Transit Authority (TTC) has the largest green roof covering 14,881 metres. These green roof authorities have been included in the update of the Municipal Act for all other Ontario municipalities.

- Tools for Resilience include a variety of zoning by-laws, for example, Zoning Bylaw 569-2013 requiring 75% soft landscaping and 10m set back.
- Communications are another key effort and Toronto has developed a number of books such as [Enduring Wilderness](#), [Birds of Toronto](#), [Butterflies of Toronto](#), [Spiders of Toronto](#), [Fishes of Toronto](#), [Mammals of Toronto](#), [Reptiles and Amphibians of Toronto](#), [Trees and Shrubs of Toronto](#), [Bees of Toronto](#), [Mushrooms of Toronto](#).

Next Steps: The OP will be updated with the 2019 Growth Plan focusing on where to grow and expand transit and develop additional OP policies related to water, energy, air quality, waste, and stormwater; and water resources related to wetlands and other key hydrologic features.

- The Transform TO Plan will get updated to align with new climate emergency commitments of net-zero.
- Updates to Green Standards was approved by council in June of 2021.
- Addressing an increase of impervious areas with regards to increased growth and densification.
- Resilience Workshop Principles were identified that will guide development application reviews and have been incorporated into Toronto's Resilience Strategy and Planning processes.
- Climate targets have not been added into the OP but are listed in the Climate Emergency as well as TransformTO which are referenced in the OP. The Toronto Green Standard which is integrated into the OP is one of the mechanisms the City uses to achieve the target of net zero new builds by 2030. This indicates that the City has considered the OP as a higher-level policy document and secondary plans have specific details.

City of Ottawa Case Study

The City Council approved a new OP in November 2021. Council passed a Climate Emergency Declaration in 2019 with the direction to embed climate change considerations across all elements of City business. There was also the direction to investigate current GHG targets to ensure they align with the international science-based target to align with a 1.5°C increase.

In January of 2020, the update to the [Climate Change Master Plan](#) identified applying a climate lens to the new Official Plan as a priority action and a net-zero GHG target by 2050 (there are short and mid-term targets as well). The City also worked with the federal government to undertake climate projections for the National Capital Region for 2100 to inform upcoming climate vulnerability, risk assessments and adaptation planning. In late 2020, [Ottawa's Energy Evolution](#) was approved by council and identified how the OP and planning processes will support the top 20 priorities and actions identified in the Strategy.

Some of those priority actions include:

- Implement Energy Evolution (Climate Mitigation Strategy)
- Develop climate vulnerability assessment and climate resilience strategy
- Apply climate lens to OP and supporting documents
- Apply climate lens to asset management and capital projects
- Study and pilot corporate carbon budgets
- Explore carbon sequestration and green infrastructure
- Encourage private action through education, programs (ex: Building Retrofit Financing and Support Program), incentives and advocacy
- Develop governance framework

The City is integrating climate change policies into the new OP and supporting master plans using a “nested” approach.

The Draft OP went out for public and internal review in late 2020, it aligned with the 2020 Provincial Policy Statement; OP policies incorporated the Five Big Moves, Discussion Papers, Preliminary Policy Directions; and the crosscutting issues of energy and climate change were incorporated across the chapters of the OP. Green Standards will play a large part of the implementation of those policies.

PART 3- BEYOND OFFICIAL PLANS: INTEGRATING CLIMATE CHANGE INTO MUNICIPAL DECISION-MAKING

Municipal staff across all departments and municipalities have recognized that it is important for climate change to get integrated into various municipal implementation plans.

To advance that goal, Clean Air Partnership is developing an accompanying Climate Change Integration Consultation Guide to provide some preliminary questions for municipal staff to discuss and understand the climate implications and opportunities associated with the various municipal implementation plans.

As these climate change integration conversations take place in Ontario municipalities, Clean Air Partnership will facilitate municipal sharings related to approaches and the rationale for the selected approaches across municipalities.

