



Planning for Climate Change in Mid-Sized Ontario Cities

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Introduction

This paper examines the need and motivation for climate change planning for Ontario's mid-sized cities, describes actions that mid-sized cities can take to mitigate and adapt to climate change, and then examines some of the challenges preventing mid-sized cities in Ontario from effectively and comprehensively planning for climate change. First, we suggest that the revenue-raising tools available to mid-sized cities do not provide adequate funding streams for climate planning and action. Second, we suggest that a multi-level model of governance is needed, where the provincial government interacts and works with mid-sized municipalities, who then work with their local publics in co-designing local and provincial climate planning and actions.

Climate change holds profound implications for mid-sized Ontario cities

Climate change will have profound impacts on mid-sized cities and, consequently, the planning profession. Many municipalities have developed climate change plans and are working to implement them. Still, it seems that climate change remains at the margins of municipal planning activities in mid-sized Ontario cities.

Delaying action either increases the risk of climate change or increases the future costs of making the necessary reductions.

Climate change mitigation – the work of reducing greenhouse gas emissions – requires an ambitiously

rapid transition to a low-carbon future. The Paris Agreement target of limiting average warming to below 2°C implies that global greenhouse gas emissions peak in the decade ahead then drop significantly below current levels by 2050, continuing until emissions reach net zero. Delaying action either increases the risk of climate change or increases the future costs of making the necessary reductions.

The Canadian government has set a national reduction target for greenhouse gases of 30% below 2005 levels by 2030 while the Ontario government has set targets of 37 percent below 1990 levels by 2030 and 80 percent by 2050. These reductions require a fundamental change in how we produce and consume energy.

Even with far-reaching greenhouse gas reductions, our climate will still change. In Ontario, average temperatures are projected to increase 3.3 to 4.9°C by 2050, with greater warming in the winter and in the northern parts of the province (McDermid, Fera, & Hogg, 2015). In short, Toronto's climate will seem more like that of Washington, DC in only the next few decades and extreme weather events such as floods, droughts, and ice storms will become more common.

Comprehensive climate change planning is needed across mid-sized Ontario cities

Local governments have a central role in climate action (Newman, 2004). The Federation of Canadian Municipalities estimates that local municipalities have some control over roughly half of Canada's greenhouse gas emissions mid-size (Robinson & Gore, 2005). Local government is also closest to citizens, which is central to understanding the social realities of climate protective actions. As well, smaller, mid-sized communities may, in theory, be able to undertake experiments in terms of

climate governance, policy and action on a local scale that aren't possible at a national or regional level (Mans, 2012). Much can be learned from paying attention to innovative local policies and actions.

Integrated climate planning and policy needs to focus on how to mitigate and prepare for climate change. It connects land use, ecosystem, watershed, and spatial planning with energy systems and infrastructure. It brings public awareness and engagement to the fore, it reaches across sectors and agencies, and it connects local activity with higher levels of government. A comprehensive local plan to address climate change should have elements such as:

- a regularly updated inventory of local greenhouse gas emissions,
- an understanding of local of energy demand and supply,
- a local action plan to reduce greenhouse gases,
- an assessment of the local vulnerabilities to climate change, and
- a plan to reduce local vulnerability to climate change (Mans, 2012).

The elements of this planning framework align well with the rational-comprehensive model of policy making, where options are assessed, implemented and reviewed. Groups such as ICLEI: Local Governments for Sustainability have a lot of experience helping local governments undertake this work (Betsill & Bulkeley, 2007). But there is a need to also appreciate the diversity and uniqueness of local actions and the social learning created through these experiments (Broto & Bulkeley, 2013)

Climate change concerns have and continue to be incorporated or "mainstreamed" (Rauken, Mydske, & Winsvold, 2015) into existing policy and planning activities related to the Planning Act and Provincial Policy Statements, Official Plans, the Building Code, asset management, sewer and storm water engineering and design, public health planning,

transportation planning, and others. But much of this activity is technocratic in nature, tangential to the main objectives of the activity, and not always well integrated across sectors. The values and priorities of the public may not be adequately captured through the mainstreaming of climate change into other activities (Fenton, Gustafsson, Ivner, & Palm, 2016; Sheppard et al., 2011).

Local municipalities have some control over roughly half of Canada's greenhouse gas emissions

It is worth noting that the local climate action that has been taking place for many years in Canada has been in the absence of concerted federal and provincial leadership on climate change (Robinson & Gore, 2005). There is a wide range of activity across different communities with some communities having been able to develop plans while others lag. Large cities such as Vancouver and Toronto have demonstrated global leadership on climate mitigation and adaptation but there is more diversity in approach among mid-sized cities (Mans, 2012).

There are barriers to climate change planning in mid-sized Ontario cities

Funding and resources are limited

While the lack of funding has led some municipalities to be quite entrepreneurial in leveraging resources for climate planning (Broto & Bulkeley, 2013), the much larger impact is that climate-related programs and planning are not being developed or sustained (Anguelovski & Carmin, 2011).

Much of the sustainability and climate planning in Canada has been shaped by the Federation of Canadian Municipalities (FCM) Partners for Climate Protection (PCP) program, which was developed in 1994 in conjunction with ICLEI Canada (Gore, 2010; Krause, 2012). The FCM has for many years administered the Green Municipal Fund, a \$550 million federal endowment that offers funding and knowledge to support sustainable community planning and climate change action. The PCP program asks communities to complete five sequential milestones:

1. Create a greenhouse gas emissions inventory and forecast;
2. Set an emissions reduction target;
3. Develop a local action plan;
4. Implement the local action plan or a set of activities; and
5. Monitor progress and report results.

According to the FCM, 289 municipalities across Canada have joined PCP as of March 2016 including 30 Ontario municipalities with populations between 50-500,000 (Table 1). Of these 30 mid-sized Ontario cities, only nine have managed to complete milestones four and five, namely to implement a plan or set of actions.



Car dominant retail malls on Chemong Road corridor with single storey retail-only use, and large paved parking areas, Peterborough. *Photo by Margo Perun*

Those who have been able to achieve milestone one to three, have typically done so with outside funding from the FCM Green Municipal Fund.

There has been no similar funding agency to support local climate planning across Ontario. At a municipal-level, the Toronto Atmospheric Fund (TAF) has for many years benefited from a one-time \$23 million endowment from the City of Toronto to advance carbon reduction and air quality projects in the city. In 2016, the province of Ontario announced an additional \$17 million endowment to the newly renamed The Atmospheric Fund to pursue projects across the greater Toronto and Hamilton area. Many mid-sized cities in Ontario such as Waterloo, London, Peterborough, Sudbury or Kingston are not eligible for this funding.

The main barrier is that dedicated climate-related funding and own-source revenue streams don't yet exist for the municipal level, but there are possibilities worth considering.

The weakness of merit and grant-based funding of climate action is that it is a zero-sum game; if Sudbury and Peterborough receive a grant, Kingston and London do not. Since its inception, the FCM states that roughly two-thirds of Green Municipal Fund applications have been approved for funding, leaving the other third of applicants to either abandon their plans or search for alternate sources of outside funding.

There is a stick approach as well. The Chretien Liberal federal government sought to make an integrated sustainability plan a prerequisite for other types of federal funding such as the gas tax which cajoled some actions but was eventually dropped by the Harper Conservative government as a requirement (Robinson & Gore, 2005). The main barrier is that dedicated

Table 1. Ontario mid-sized cities that have joined the Federation of Canadian Municipalities Partners for Climate Protection program and the milestones that each has completed (Federation of Canadian Municipalities, 2017).

Municipality	Population	Joined PCP	Milestones Completed (as of 2015)
Niagara Region	435,000	2009	3
London	432,451	1994	5
Halton Region	375,229	2005	0
Vaughan (City of)	288,301	2011	3
Kitchener	219,153	1997	3
Markham	208,615	2007	1
Windsor	208,402	2002	1
Richmond Hill	185,541	2000	5
Oakville	182,520	2004	3
Burlington	175,779	2002	5
Sudbury	155,219	1997	4
Oshawa	149,607	2009	2
Peterborough (County)	134,933	2014	1
St. Catharines (City of)	131,989	2009	0
Cambridge	126,748	2012	3
Kingston	123,363	2001	3
Waterloo (City of)	113,100	1999	3
Whitby (Town of)	111,184	2011	0
Ajax	109,600	2010	4
Thunder Bay	109,102	1997	5
Guelph	106,170	1998	5
Barrie	103,710	2001	3
Pickering	94,200	2005	5
Brantford	86,417	1996	0
Peterborough (City)	78,777	2000	1
Kawartha Lakes	73,214	2016	0
Newmarket	65,788	2001	0
Lanark (County)	65,667	2015	0
Caledon	59,460	2003	4
Halton Hills	59,008	2001	3

climate-related funding and own-source revenue streams don't yet exist for the municipal level, but there are possibilities worth considering.

The Ontario cap-and-trade program presents one possible dedicated source of carbon and climate-related revenue that could fund local government action on climate. But these funds are, at this point, mostly allocated to provincially directed programs and activities through the Ontario Climate Change Action Plan. Mid-sized cities can apply for program money from the Green Fund in the Ontario Climate Change Action Plan but will have to follow provincial directives in spending these funds. Local control and autonomy is limited.

Municipalities could develop a variety of dedicated user fees to pay for climate-related planning. For example, some Ontario municipalities have begun to adopt user-pay financing of stormwater management – a type of climate adaptation – so that a dedicated funding stream exists outside of the general municipal tax base (Cameron, Cincar, Trudeau, Marsalek, & Schaefer, 1999). But user fees remain politically challenging to implement and may not be an appropriate way to raise the funds to pay for local climate action.

The province could choose to mandate that each municipality develop a climate action plan. Indeed, this mandated approach was used to require the development of energy inventories and conservation and demand management plans for broader public sector facilities in Ontario (O Reg. 397/11). The results of this exercise show that many smaller communities are simply not able to develop meaningful energy conservation programs for their own facilities. Without a dedicated funding stream, it's hard to imagine that municipal governments would make the complex work of climate planning a priority or be able to do it effectively.

The main revenue – raising tools available to mid-sized cities – namely, property taxes and development charges – may not be effective revenue sources to

fund local climate action. First, property taxes are highly visible to the public, which constrains the ability of municipal governments to raise them to pay for additional services such as climate planning (Slack, 2002b). Second, the total revenue from property taxes does not automatically increase over time as income and sales taxes do (ibid). Third, there is evidence that property taxes can encourage urban sprawl (Slack, 2002a) which frustrates effective climate action. This last point has several political dimensions. In many mid-sized municipalities, the building and development sector has a subtle but real influence over the nature and approval of development plans (MacDermid, 2016) which may undermine the ability of mid-sized cities to do land-use planning that is climate protective and resilient.

Policy implication #1: *The provincial government needs to directly fund climate planning and actions in mid-sized cities and/or review models of taxation to ensure mid-sized cities have sufficient own-source revenue to undertake climate planning actions.*

Effective models of climate governance are needed for mid-sized cities

Climate governance refers to the institutions, norms, and rules that different policy actors follow in relation to climate planning and action (Anguelovski & Carmin, 2011). Effective governance will take time to create and is still emerging at urban, regional and national levels.

There is evidence that multi-level and multi-scalar governance that stretches across geographic scales and higher and lower orders of government will be more effective implementing climate planning actions (Bulkeley & Betsill, 2005). This implies that the governance model for climate action in Ontario could be better. One can imagine mid-sized cities as a coordinating hub of climate planning activities for their region, with coordination and funding from the

province or a new regional climate planning agency (akin to the watershed-based Conservation Authorities). Local climate planning offers an effective way to connect provincial priorities with local realities for climate action.

Research also suggests that cities that belong to a sub-national or trans-national network of local governments will be advantaged (Giest & Howlett, 2013; Gordon, 2010; Gore, 2010). Moreover, these networks offer an alternative governance framework to traditional national and provincial interactions.

At the local level, there is evidence that governance arrangements that include local researchers, civil society and NGOs, and connect with higher-levels of government are more effective (Lee & Painter, 2015). But it can be difficult to get meaningful citizen engagement because the public is too often seen as a passive consumer rather than a partner in governance (Slocum, 2004). Public trust can be developed and nurtured through collaborative and participatory processes, undertaken repeatedly over extended periods of time (Forester, 1999; Lerner, 2014). This can be expensive and time consuming, but is crucial to create governance models that effectively involve the public.

Effective governance also requires political leadership. Climate and energy policy is normally centralized at provincial and federal levels of government (Mans, 2012) so municipal leaders may not face the same political pressure to deal with these files; they can defer to the provincial or federal government. Yet every level of government needs to be engaged. In addition, actions that reduce greenhouse gases (i.e., mitigation) can seem much less locally relevant when compared with actions to reduce local vulnerability to climate change (i.e., adaptation) (Hjerpe, Storbjörk, & Alberth, 2015). Mitigation measures need to be part of a set of collective actions whereas adaptation is rooted in local needs and place-based realities (Groulx, Lewis, Lemieux, & Dawson, 2014). The consequence is that

local actions on climate change may focus more on adaptation than mitigation.

The driving force for climate action in mid-sized cities is often political leadership or a few key champions in the community (Mans, 2012). But political leadership on climate is not present in every local government (Lee & Koski, 2012). Some recent political barriers to climate mitigation were created by the governance arrangements of the 2009 Green Energy & Economy Act (Shaw et al., 2015). The act, crafted by provincial politicians, was successful in deploying a great deal of renewable electricity but left political and social divisions in its wake across many parts of Ontario (Fast et al., 2016; Hill & Knott, 2010; Stokes, 2013). Energy planning and deployment was centralized at a provincial level, leaving local municipalities with no meaningful authority over how energy infrastructure intersected with land use planning (Hill & Knott, 2010).

The deployment of renewable energy became and remains a contentious political issue in many Ontario communities outside of the Greater Toronto Area (Stokes, 2013). The consequence is that the province and local municipal councils have found very little common ground in policies that will transition us to a low-carbon energy system.

It is our view that there is inadequate communication and sharing of information between provincial and municipal levels of government around climate planning. A personal anecdote is illustrative. As active members of the Greater Peterborough Area's climate change action planning process (Sustainable Peterborough, 2017), we were surprised that no one from the province contacted those involved in the Peterborough plan to seek any input into the development of the Ontario Climate Change Action Plan. One hopes that a regional climate plan, developed over two years and involving hundreds of people and politicians, might have some useful insight into the local realities of climate planning and action.

Policy implication #2: *Mid-sized cities should meaningfully involve local NGOs and institutions (particularly anchor institutions) in the ongoing development and implementation of their local climate plan. As well, the provincial government needs to create a process for their departments and agencies to work regularly with mid-sized cities and regions on climate change planning.*



Greenfield development in Peterborough: entrance to housing subdivision under construction on former farmland, Chemong Road. *Photo by Margo Perun*

Conclusions and next steps

The range of research needs in this area is long. Some European research focussed on climate planning in mid-sized cities exists, but there is little comparable work in Canada or Ontario. A research program focussed on climate planning in mid-sized Ontario cities could build on the significant professional and real-world experience of climate planning in Ontario. There is also a need to connect research and insight in the areas of sustainability planning and community energy planning to discern overlap and unique features.

We suggest a few questions to start:

- a.** What are the existing gaps and needs in climate change planning for mid-sized cities, in terms of governance, funding, resources, human capacity, and/or information?
 - i.** How do mid-sized cities differ in their climate planning from major cities?
 - ii.** How might a community driven ecosystem-based or regional approach inform climate change planning in a mid-sized city?
 - iii.** How can these gaps best be filled?
- b.** What is the relationship between sustainability planning and climate planning? How do these intersect?
- c.** What is the relationship between community energy planning and climate planning? How do these intersect?

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