

**The Making of Climate Change Policy in Vancouver and Toronto:
A comparative analysis**

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Why do some Canadian cities enact policies to combat climate change? Initial findings of this study are surprising, in that they suggest some common assumptions about the sources of municipal policy do not hold. First, electoral factors, including public attention to climate change, do not seem to be related to the climate policy developed at the local level. Second, in spite of the province having constitutional authority over municipal affairs, provincial control of local climate change policy seems indirect at best. In contrast, the most important factor seems to be the personal beliefs and commitments of politicians and of staff who have the ability to influence outcomes due to their position within the bureaucracy. Another factor of note is the entrenchment of environmental attitudes and goals within the bureaucracy by means of having a dedicated environment office. These results are consistent with my earlier findings from a single case study of the City of Vancouver (Schwartz forthcoming).

The urban politics and politics of public policy literatures suggest that it is unlikely for municipalities to create climate change policy. Public policy, in general, is difficult to design, enact, and implement; environmental policy, and climate change policy specifically, is particularly so because of high levels of uncertainty (Dowlatabadi 2007), the concentration of costs and dispersion of benefits (Harrison 1996), and the intractable need to consider long-term trade-offs (Dowlatabadi 2007). Furthermore, city officials may be less likely than officials at other levels of government to consider climate change policy as they tend to have little authority and few incentives (Sancton 2009; Peterson 1981; Molotch 1976; Graham, Phillips and Maslove 1998, Wolman and Goldsmith 1992, Tindal and Tindal 2004).

Nonetheless, some cities do have climate policy. The local climate policy literature notes this and is extremely optimistic about the future. Studies of municipal climate change have pointed to theoretical and technical possibilities and opportunities, focusing on the international

context (e.g., Bulkeley and Betsill 2003), and voluntary programs initiated by nongovernmental organizations (NGOs) that encourage climate policy (Gore 2010; Bulkeley and Betsill 2006; Betsill 2001). Many case studies proclaim the triumph of municipal climate action by emphasising the success of particular cities in implementing specific measures (e.g., Fitzgerald 2010). Those that explicitly recognize institutional and other impediments to municipal action suggest that the removal of these barriers is both feasible and likely, and they perceive cities as useful and promising sites of climate change policy (Fitzgerald 2010; Robinson and Gore 2005; Bulkeley and Betsill 2003; Betsill 2001).

This view is substantiated by observed successes, including developments in major Canadian centres such as Toronto and Vancouver. This paper asks the specific question: What factors are most important to the adoption of climate change policy in Vancouver and Toronto? Although progress towards greenhouse gas (GHG) reduction is by no means even across Canadian cities, I hope to explain the factors that led to relative success in these two cities in order to move towards a generalizable explanation of climate policy in Canadian cities, while recognizing that there may be idiosyncratic features and the potential for multiple casual pathways to the same outcomes. Additionally, understanding how and why these cities have succeeded in creating climate policy may help others to follow in their footsteps.

I begin with definitions of climate policy used in this study and an outline of the methodology used. A detailed exposition of specific hypotheses and expectations is followed by a report of my specific findings from the experiences of the cities of Toronto and Vancouver.¹

What counts as “Climate Policy”? What are Canadian cities doing?

¹ Evidence is drawn from data gathered in interviews conducted with City officials and NGO representatives in Vancouver (September-December 2011) and Toronto (February-March 2012), as well as publicly available primary and secondary sources.

This study focuses on climate change mitigation policy, defined as any measure undertaken by the city government that limits greenhouse gas (GHG) emissions through energy conservation, energy efficiency, fuel switching or direct capture of GHGs (e.g., landfill methane capture). In this analysis, mitigation policy will not include targets, goals, plans for future policy, reports to the municipal council, or agreements signed by the municipality with other governments or organizations. Of note, mitigation policy, here, is about the measures enacted by local government, not about the successful implementation or the impact of these measures.

Table 1 Taking Climate Change Seriously Index

City Planning

1. Climate change plan (mid-/long-term) including an ambitious GHG reduction target
2. Comprehensive land-use plan incorporating climate change considerations
3. Zoning used to promote GHG emissions reductions

Buildings

4. Brownfield redevelopment program
5. Tax incentives for low- or zero-emission development
6. Renewable energy use by city government
7. Alternative energy offered to consumers
8. Green Building program
9. Energy conservation efforts (other than Green Building program)

Transportation

10. Limits on downtown parking spaces
11. Carpool (HOV) lanes on local streets
12. Bicycle ridership program
13. Alternatively fuelled city vehicle program
14. Public transit system

Other

15. Landfill methane capture
16. Active promotion of green business opportunities

I have developed an index of measures that indicate a municipality is “serious about climate change” (see Schwartz forthcoming) using indicators from Portney’s (2003) *Taking Sustainable Cities Seriously* and the Corporate Knights’ 2011 report on Canada’s most sustainable cities (Marchington 2011). As can be seen in Table 1, the index incorporates a total

of 16 types of climate change mitigation policy that can be grouped into four substantive issue areas: city planning, buildings, transportation, and other.

The planning category captures whether the city in question has created a mid- to long-term climate change plan that includes an ambitious GHG reduction target, whether there is a comprehensive land-use plan that incorporates climate change considerations, and whether the City uses zoning as a tool to promote GHG emission reductions. In the category of buildings, I measure whether the cities have a brownfield redevelopment program, tax incentives for low- or zero-emission development, renewable energy use within City buildings, whether alternative energy is offered to consumers, if there is a Green Building program in the city, and if the City engages in energy conservation efforts other than the Green Building program. A range of modes of transportation are included in the “Transportation” category: whether there is a public transit network, carpool or high-occupancy vehicle (HOV) lanes on local streets, limits on downtown parking spaces, a bicycle ridership program, and an alternatively fuelled city vehicle program. Promotion of green business opportunities and landfill methane gas capture fall into the “Other” category.

“Taking climate change mitigation policy seriously” neither means that each measure is specifically labelled as a climate change policy, nor that there was a deliberate intention on the part of municipal actors that the principal purpose of the policy would be to reduce GHG emissions. Instead, since the measures included in the index are those that are likely to be the most important in terms of reducing the city’s GHG emissions, a city is said to be “serious” about climate change mitigation if these measures have been adopted, regardless of intention. However, in order to ensure that the enacting of these policies is not coincidental – that the city just happens to have done all these things for other reasons and really does not have an

awareness of climate change — there must at least be a mention of the issue in plans, by-laws or policy statements, so that it is clear that city officials understand that reductions in GHG emissions are related to the mitigation of global climate change. My preliminary survey, summarized in Table 2, identifies significant variation in climate change mitigation policy among Canada’s eleven largest cities. Vancouver has the highest score (14 of 16), followed closely by Toronto with 13 of 16 possible policies.

Table 2 Taking Climate Change Mitigation Seriously in Large Canadian Municipalities

	Indicators																Score
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Montreal	✓	✓		✓				✓	✓	✓		✓		✓		✓	9
Toronto	✓			✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	13
Vancouver	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14
Ottawa	✓			✓		✓	✓	✓						✓	✓		7
Halifax	✓					✓	✓	✓	✓					✓	✓	✓	8
Calgary	✓					✓		✓	✓				✓	✓	✓		7
Edmonton	✓		✓	✓		✓	✓	✓						✓	✓	✓	9
Hamilton	✓			✓									✓	✓	✓	✓	6
Mississauga									✓					✓		✓	3
Winnipeg								✓						✓			2
Quebec	✓													✓	✓	✓	4
<i># of Cities</i>	9	2	2	5	1	6	5	8	6	2	2	3	4	11	8	8	

Methodology

In this paper I compare the climate change mitigation policies of Toronto and Vancouver. While the two cities do not have the same policies in the area of climate change mitigation, each has chosen to implement multiple strategies to reduce their contribution to the increase in global average temperatures and to climatic change more generally. While there is a comparison to be

made between the cities in terms of which has more or better climate policy, for the purposes of this study, and using the index above, Toronto and Vancouver both are cases of Canadian cities that have adopted significant climate change mitigation policy.

Mill's method of agreement (Mill 1970), upon which my analysis is loosely based, is used to explain two cases with similar outcomes by identifying commonalities in "hypothesized causal factors, although the cases vary in other ways that might have seemed causally relevant" (Skocpol and Somers 1980, 183). This method has significant and commonly cited disadvantages. As Lieberson (1991) notes, case selection can influence the findings of the study, and since the cases are unlikely to be representative of the population, and results are difficult to generalize. Measurement error, especially at the margins of categories, may affect findings. And the validity of those findings depends on the researcher having included all relevant independent variables. Finally, Mill's methods do not allow for interaction effects between the variables.

However, Skocpol and Somers argue that "highly suggestive studies can often be successfully completed" (Skocpol and Somers 1980, 194), and that Mill's methods can be used as a simple, yet powerful tool to point out flaws in commonly accepted explanations. Furthermore, "[s]uch critical use of [this type of] analysis in turn prods social scientists to look for more promising explanatory hypotheses" (Skocpol and Somers 1980, 194).

In the section below, I outline a number of hypotheses regarding potential causal factors that may explain why Canadian municipalities implement climate change mitigation policy. I then compare these factors across the two cities. Unlike in the classic application of Mill's method of agreement whereby there must only be one cause of the common outcome, I suggest that multiple causal factors may be at work. My aim here is not only to identify factors that are likely influential in the adoption of climate policy at the municipal level, but also to follow Skocpol

and Somers (1980) in their goal of poking holes in commonly accepted explanations.

Acknowledging Lieberman's (1991) criticisms, this is only the first step in explaining municipal climate change mitigation policy in Canada. Within-case analysis, using process tracing, will be required to identify the potentially multiple causal pathways, and interactions between variables. However, this falls outside the scope of the current project.

Hypotheses

Despite significant differences between local and other levels of government,² I suggest that the politics of municipal policy-making can be studied using the same theoretical tools as those used to explore the creation of national level policy. Drawing on general models from the politics of public policy literature, I have identified three groups of motivating factors that may influence how climate change is developed at the city level: electoral, ideational and institutional.³

Electoral Factors

² On the whole, Canadian city governments have several characteristics in common with one another that differentiate them from their provincial and federal counterparts. First, Canadian municipalities have different institutional features. There is no direct relationship between the legislature (the elected mayor and councillors) and the executive (the permanent bureaucracy). While the Mayor heads the legislature, the City Manager is the chief administrative officer in charge of the bureaucracy. This creates a different dynamic than is seen in provincial and federal parliaments where there is a fusion of executive and legislative power and elected cabinet ministers formally control bureaucratic departments. Furthermore, the task-specific multi-level governance (Ostrom 1973; Hooghe and Marks 2003) that is controversial for provincial and federal governments is commonplace at the local level. A variety of local bodies are legally responsible for developing policy and providing services – this often includes school boards, transportation authorities, police services, and more. Finally, municipal governments face challenges that are more specific and concrete than those faced by provincial and federal governments, and compared to their senior government counterparts, city governments have less autonomy and thus access to a different, and often reduced, range of solutions.

³ While many local climate change studies seek to explain why municipalities enact climate change policy, they generally do so in a manner that treats them as unitary actors (for an exception see Robinson and Gore 2011). For example, cities may seek co-benefits such as financial savings, reputational gains, achieve other environmental goals (Betsill 2001), or to fill gaps left by more senior levels of government (Bulkeley and Betsill 2003). This paper differs from that approach by recognizing the agency of specific actors within the municipality – in particular, politicians and staff. I suggest that the motivations of these actors, be they material or ideational, are fundamental to cities' policy outcomes. This is consistent with much of the broader politics of public policy literature (Niskanen 1971; Moe 1984; Scharpf 1997).

The first group of hypotheses posits that variation in climate policy among cities and over time is motivated by an associated variation in material incentives, primarily the electoral considerations of politicians. This explanation emphasises politicians' drive to be re-elected, either as their primary goal (Mayhew 1974), or as an indirect path to policy influence (Jacobs 2011, Docherty 1997). Politicians' actions in the electoral arena may be explained by several factors, including the salience of a particular issue (Harrison 1996), and the influence of interest groups (Jacobs 2008).

Interest groups are dedicated organizations that lobby governments at all levels to create policy in accordance with the preferences of their members, and to prevent policies that may hurt their interests (Jacobs 2008). These organizations attempt to keep their preferred policy issues on the political agenda, even when public attention is low. In this context, interest groups play two roles: communicating citizens' views and preferences to government, and providing information to government that helps to promote the adoption of their preferred policy options.

From an electoral perspective, the views and input of interest groups, such as environmental organizations, local business councils, industry lobby groups, and neighbourhood associations, may be solicited by politicians and staff and incorporated into policy because of a perception that they represent the views of a large group of citizens who will vote together. In a similar vein, interest groups could be perceived as drivers of public opinion – able to influence the votes of a politician's constituents or the general public. Because of a fear that the groups will negatively affect their chances of re-election, politicians may enact policies in line with the groups' demands. If these hypotheses are correct, we should observe that local politicians and bureaucrats listen to, and maybe even solicit, the views and input of interest groups. Further,

politicians and bureaucrats should perceive these groups in terms of their relationships with voters.

‘Salience’ refers to the degree of public attention focused on a particular issue. Public attention can be defined as “the scarce resources – time and other – that citizens willingly dedicate toward thinking about a publicly debated issue” (Ripberger 2011, 240). If political representation is framed in terms of retrospective voting (Fiorina 1982) or principal-agent theory (Strøm 2000), then variation in climate policy can be explained as a consequence of politicians who respond to an underlying variation in public attention across cities – in other words, to the electoral salience of environmental, and specifically climate change-related, issues. This suggests that when and where there is significant public attention to an issue, politicians will interpret this as a strong desire to see that issue addressed, and the government is likely to create policy in that area. Attention may be drawn to the issue of climate change through focusing events, such as unusually violent storms or flooding. Differences in public attention may thus account for policy differences both across cities and within a city over time.⁴

If issue salience was a cause of climate change policy making, we would expect to observe correlation between public attention to the climate change and the development of climate policy – perhaps with a time lag. If there is no variation in public attention, or attention is

⁴ Issue salience and public opinion may be linked to the background conditions (or underlying characteristics) of particular cities. Some cities may simply be at greater objective risk of the negative outcomes of climate change. This geographic vulnerability (e.g., being located in a low-lying coastal area or in a flood-plain; depending on glaciers for water supply) may lead climate change to be a more top-of-mind issue. The presence of vulnerable populations or experiences of dealing with extreme weather events may such as floods or droughts may likewise increase the salience of climate change.

correlated with non-local events or policy adoption, then it is unlikely to be the cause of government decisions to adopt climate policy at the municipal level.⁵

Ideational Factors

The second group of hypotheses suggests that the variation in climate policy is caused by differences in ideational factors, specifically policy learning (Hall 1993) and the principled beliefs of both bureaucrats and elected politicians (Goldstein and Keohane 1993). In this framework, the priorities of individuals – independent from their electoral motivations – can change policy outcomes.

Learning comes in many forms. One way that policy learning may take place is through interest groups. For example, politicians and bureaucrats may perceive groups and their members as credible sources of expert knowledge to draw upon in the policy process. If learning is occurring in this manner, we should expect to observe both the dissemination of information from groups to governments, as well as politicians and bureaucrats who describe the groups as “experts”. Policy learning may also occur through municipal government participation in intergovernmental organizations (IGOs). Cities could be adopting climate change policy as a result of information or norms acquired through participation in, and interaction with, these organizations. If cities are adopting climate policy because of this factor, we should observe participation in IGOs that are oriented towards climate policy, or the dissemination of environmental best practices.

Local climate policy could also be the result of politicians’ and staff’s principled beliefs (Goldstein and Keohane 1993) – their personal investment in the cause of avoiding catastrophic

⁵ It could be that politicians perceive public attention to an issue where none exists. While this explanation cannot be ruled out, municipal politicians likely have access to sophisticated polling data and are generally well informed about hot-button issues in their communities.

climate change and their belief that action at the local level can make a difference. This hypothesis parallels Robinson and Gore's (2005) argument that a major barrier to municipal climate change mitigation policy is that many officials do not consider climate change to be a matter of local concern. If the principled beliefs of politicians and staff are an important cause of local climate change decisions, we should expect to observe key local officials in both cities who see greenhouse gas emissions as threat, embrace the need for municipalities to adopt climate change mitigation policy, and take an active role in creating climate policy.

Institutional Context

The final group of hypotheses addresses the institutional framework of the municipality. For this study, the institutional features considered are the capacity of the bureaucracy, intergovernmental relationships within the Canadian federal system and cities' electoral and party systems.

Skocpol (1985) suggests that an important factor in the creation of public policy is the capacity of the state apparatus itself. The organization of a city's bureaucracy and the distribution of resources within it are likely to have important impacts on the output of climate policy. Adding climate policy to the responsibility of already busy municipal bureaucrats is unlikely to result in the creation of significant climate policy as these staff are unlikely to have time to devote sufficient attention to an issue that is tacked on to their existing and often congested schedules. Another option is to establish a dedicated environment or sustainability branch. This should lead to the development of more extensive climate policy for several reasons. First, staff in such a branch are likely to have sought out their job because of enthusiasm about the topic. They are also more likely to be surrounded by colleagues and managers who are supportive of their work on climate change. Finally, they will have sufficient

time to work on climate policy without being sidetracked by other priorities. This leads to the hypothesis that cities with a dedicated environment or sustainability branch will have more climate policy.

From a constitutional perspective, Canadian provinces “can do whatever they want with municipalities” (Sancton 2009, 11) since the *Constitution Act, 1867* provides that the provinces have exclusive jurisdiction over “Municipal Institutions in the Province” (Constitution Act 1867, s 92(8)). However, each province limits its intervention in municipal affairs by creating statutes that outline the responsibilities of local governments and the limits of acceptable provincial interference.

Thus, quite apart from the internal workings of the city bureaucracy, a city’s climate policy might be simply a reflection of climate change policy at the provincial level. The provincial government may take responsibility for climate change policy, and leave little latitude for independent city action. If formal, legal jurisdictional authority is a cause of variation in municipal climate policy, mitigation policy in cities should correlate with their respective provinces’ commitment to climate change mitigation as demonstrated through legislation and regulation, especially legislation and regulation aimed at shaping municipal government action.⁶

Another way in which federalism can affect municipal policy choices is through the generation and distribution of revenue among levels of government. In Canada, city governments collect property taxes and fees for various public services. Within the bounds of their statutory powers and purposes, municipalities are free to use these funds as they wish. Cities also receive small grants from the federal government for the provision of services that are the result of federal policy decisions, such as immigrant services, and through the Gas Tax Fund, established

⁶ The variable of interest here is the ‘quantity’ of municipal policy, as measured by the “Taking climate change seriously” score. Content of the policies is not considered in this measure, but is an important part of any process tracing exercise (an exercise that is outside the scope of this paper).

in 2005.⁷ If federal funding is a motivator of municipal climate change policies, infrastructure projects funded by the Gas Tax Fund should be common, and officials should cite the program as an important source of financial resources for their endeavours.

A large portion of municipal budgets comes from transfers by the provincial government. This is the result of a trend of increasing provincial influence over municipalities throughout the twentieth century (Tindal and Tindal 2004). Conditional grants became larger and more common after the Second World War as municipalities began to assume responsibility for more and more social services. Funding structures changed in the 1990s as fiscal strain prompted a switch to unconditional grants, often in smaller amounts than provided by previous funding arrangements. This trend was accompanied by “downloading” and “disentanglement”: attempts by provincial governments to rationalize federal relationships by reducing replication and simplifying lines of accountability. Although their responsibilities grew, municipalities neither saw large increases in the fiscal transfers from the provinces, nor were granted significant autonomy. If provincial transfers are a major influence on municipal climate policy, we should expect to observe either very little policy because of municipalities’ limited financial resources or only climate policy that is mandated by provincial governments. Alternatively we might expect to see that most climate policy is prompted by promises of provincial funding.

Electoral and party systems may indirectly influence climate policy outcomes in Canadian municipalities as they may lead to the election of a larger or smaller number of city councillors who are personally committed to enacting climate change mitigation policy. If municipal politics is structured by local political parties – often called “civic associations” –

⁷ Under the GTF program the federal government transfers funds raised through gasoline taxes to Canadian municipalities to fund “environmentally sustainable municipal infrastructure” (Infrastructure Canada 2012). Initially a five-year pilot project, the GTF became a permanent program in 2011.

environmental issues, including climate change, could be incorporated into the platform of one or more parties. If one of these parties wins a majority of council seats, it is likely that climate change mitigation will be on the government's agenda and policies to address it will have a higher likelihood of being adopted. Additionally, a party system may permit more environmentalists to be elected. Parties provide financial and promotional resources to all of their candidates, so that they do not have to rely solely on personal reputation and name recognition which may be more limited for environmentalists than other community leaders. I expect that cities with an established local party system will have more climate policy than cities where candidates must run as independents.

In many Canadian municipalities councillors are elected using a ward system. This single member plurality system divides the municipality into geographical constituencies, known as wards. As in federal and provincial elections candidates compete with one another within each ward, and the candidate who receives the largest number of votes is named the winner. In other municipalities councillors are elected at-large. This is a non-proportional plurality electoral system in which all candidates compete against one another in a single multimember constituency that spans the entire municipality. Voters may select as many candidates as there are seats on City Council, and the candidates with the most votes assume office.

In a ward system candidates must appeal to voters on a geographical basis, campaigning on issues that are relevant to that neighbourhood. Once elected, councillors become representatives of a particular region. In an at-large system candidates must appeal to voters on a more abstract level, speaking to issues that affect residents across the city. This gives candidates the opportunity to champion a particular issue. Once elected, councillors then have a non-geographical constituency of voters from across the municipality who support their issue. Thus, I

expect that cities where candidates are elected at-large rather than will have more climate policy than cities employing ward systems.

Findings

From September to November 2011, I conducted 17 interviews with current and former Vancouver City Councillors and staff, a former staff member at Metro Vancouver (the regional government), the director of a sustainable transportation NGO, and a journalist who has covered Vancouver city politics for many years. In February and March 2012, I conducted a total of 20 interviews with politicians, city staff, and NGO representatives in the City of Toronto.

Participants were selected using a “snowball sampling” method whereby I identified individuals who were either involved in the climate policy process or knowledgeable about it. During each interview, I asked these respondents to recommend others who they thought would be able to contribute meaningfully to the study. In contrast to random sampling, this method has the advantage of allowing the interviewer to identify respondents with expertise in the issue area of interest. The interviews themselves were semi-structured: a list of questions provided a common framework to all the interviews, but the exact wording of the questions and their order flowed from the conversation. All questions were open-ended, allowing respondents to express themselves freely.

As Table 2 indicates, both Vancouver and Toronto have created a large number of climate change mitigation policies. The goal of the comparative method is to identify those factors (independent variables) that are common across the two cases, and that are consistent with theoretical expectations. This approach provides a first cut at an explanation of climate policy creation in Canadian cities. The results are not definitive as this method cannot account for different combinations of factors or particular causal pathways that may have led to policy

adoption in each case. However, comparative analysis can help to identify necessary conditions and will allow for a greater degree of generalization.

Table 3
Mill's Method of Agreement – Climate Change Mitigation Policy in Vancouver and Toronto

		Toronto	Vancouver
Level of Climate Policy		High	High
Electoral Incentives	Interest Groups (Representative)	No	No
	Interest Groups (Influential)	No	No
	Issue Saliience	Correlated with non-local events	Correlated with non-local events
Ideational Motivation	Participation in IGOs	Yes	Yes
	Interest Groups as Experts	Yes	Yes
	Principled Beliefs	Yes	Yes
Institutional Framework	Federalism (Legislation)	No	No
	Federalism (Funding)	No	No
	Party System	No	Yes
	Electoral System	Ward	At-Large
	Dedicated Environment Office	Yes	Yes

The results of the comparative analysis suggest that there are several variables that may play a role in promoting the creation of climate change mitigation policy: specifically ideational and institutional factors. Ideational factors that are shown to matter are participation in inter-municipal networks (ICLEI-Local Governments for Sustainability, the Federation of Canadian Municipalities' Partners for Climate Protection program, and professional networks), the perception by politicians and staff that environmental non-governmental organizations (ENGOS) are experts and sources of credible information (rather than simply being representatives of a

particular viewpoint), and the presence of multiple highly placed political and bureaucratic officials who hold strong principled beliefs in favour of municipal climate change policy action. In terms of institutions, the most relevant factor is the presence of a dedicated environment office to focus government attention on the issue of climate change.

Principled Beliefs

This hypothesis suggests that high levels of climate policy in Vancouver and Toronto are the result of the personal values of politicians and bureaucrats, independent of electoral considerations. Evidence from interviews conducted with politicians and staff in Toronto and Vancouver suggests that in both cities there are multiple, highly-placed political and bureaucratic figures who hold strong principled beliefs in favour of municipal climate change policy action. Interviewees universally noted the personal commitment of key officials at all levels to the prevention of climate change and adaptation to its impacts. In Vancouver, this list included Mayor Gregor Robertson, Deputy City Manager Sadhu Johnston, Vancouver Deputy Engineer Brian Crowe, and others. In Toronto, interview respondents cited former Toronto Mayor David Miller, Director of Fleet Services Gary Pietschmann, John Mendes in Transportation, and others. Such individuals were often referred to as “policy champions” – people in either political or administrative positions who eased the passage of climate change mitigation policy through official channels and helped ensure its success in the city council.

Furthermore, almost all respondents reported that, at a general level, everyone they interacted with in the municipal organization —councillors and staff alike —believed in climate

change science, and supported broad principles of mitigation and adaptation.⁸ This is strong evidence, from a comparative perspective, that the general attitudes towards climate change policy, as well as the principled beliefs of individuals within the municipal organization may positively affect the creation of climate change mitigation policy.⁹

Interest Groups

The evidence from Toronto and Vancouver is inconsistent with both electoral hypotheses about interest groups outlined above. Politicians and staff I spoke with in both cities almost universally suggested that representativeness and the ability to influence voters are not the reasons that they consult with or listen to interest groups. Instead, the most common responses were that a) staff are legislatively required to consult with all stakeholders; b) consulting with all stakeholders at the point of policy development prevents later implementation headaches; and that c) interest groups – especially ENGOs – are experts on issues of climate change policy and are sources of credible information. This is not to suggest that all interest groups, or even all ENGOs, are treated equally. However, the perception in both cities that ENGOs are credible information sources provides support for the claim that interest groups matter to policy creation because of their ability to disseminate pertinent information: an ideational, not electoral explanation.

Participation in IGOs

⁸ Although some Toronto respondents mentioned that there are a few Councillors who are not believers in climate change science - such individuals were never mentioned by name and respondents seemed to see this as an isolated problem that is relatively easy to overcome rather than a systemic barrier to change.

⁹ There may be an argument to be made that the importance of principled beliefs is inversely related to the influence of electoral incentives. For example, Kent Weaver (1986) argues that in some situations politicians make decisions based on electoral motives, and in others these incentives are reduced and they are free to act on their own “good policy motives.”

Both Vancouver and Toronto are members of major Canadian IGOs such as the Federation of Canadian Municipalities (FCM), as well as climate change-specific organizations and programs such as ICLEI-Local Governments for Sustainability and the FCM's Partners for Climate Protection. Furthermore, staff in both municipalities are active participants in professional networks – e.g., engineers, city planners, city managers, fleet services managers, etc. These groups often have regular telephone conferences and annual in-person meetings where members share their experiences and solicit advice. This evidence is consistent with the hypothesis above suggesting that learning in the context of participation in IGOs may be a relevant factor in the creation of climate policy.

Presence of a Dedicated Environment Office

Both Toronto and Vancouver have long been aware of local and global environmental issues, and have established task-specific agencies. The Toronto Environment Office (TEO) is the current incarnation of the Environmental Protection Office (EPO) established in 1987 under the auspices of the Health Department, and tasked with a multitude of environmental responsibilities.¹⁰ The TEO has been responsible for coordinating the city's climate change approach – including acting as lead author on both mitigation and adaptation plans.¹¹ In Vancouver, the original environment office was formed in the 1980s as part of the health department and was then transferred to the Engineering Department when responsibility for public health was transferred back to the province.¹² The current Sustainability Group, established in 2005, coordinates and supports the development of climate change policy in the

¹⁰ Interview with Kate Davies, Former Director, Environment Protection Office, City of Toronto, 1987-1988, (Seattle, WA, 28 February 2012).

¹¹ *Change is in the Air: Toronto's Climate Change, Clean Air and Sustainable Energy Action Plan* (2007); *Ahead of the Storm: Preparing Toronto for Climate Change* (2008); Interview with Lawson Oates, Director, Toronto Environment Office, City of Toronto, (Toronto, ON, 6 March 2012)

¹² Interview with Judy Rogers, Former City Manager, City of Vancouver, 1999-2008 (Vancouver, BC, 25 October 2011)

City.¹³ That both cities have high levels of climate policy and a dedicated environment group is consistent with the hypothesis above, suggesting that the organization of the bureaucracy may facilitate or impede the creation of climate change policy in Canadian municipalities.

Issue Salience

The above results suggest that the existence of a dedicated environment group together with ideational factors influence the adoption of climate change policy in Canadian cities. My findings also suggest that several common explanations of policy adoption do not hold in the area of municipal climate change policy. Of note, electoral factors are not responsible for the creation of climate change mitigation policy in Vancouver and Toronto. Of the various electoral hypotheses, it is most surprising that issue salience does not seem to have played a major role.

Here I use public attention, as measured by Internet searches, as an empirical measure of issue salience. Ripberger (2011) suggests that Internet searches are a more valid measure of public attention than media coverage. The argument is that because individuals must use search terms associated with the issue in order to perform internet searches, aggregate search trends demonstrate active attention. *Google Insights for Search* is a Google product that allows users to observe trends in internet searches over time, as well as comparisons between locations and among search terms. Although Google is only one of many online search engines available, it dominates the market. According to Netmarketshare, 88 percent of all Internet queries in British Columbia and 90 percent of those in Vancouver are performed using the Google search engine (Netmarketshare 2011).

¹³ Interview with Malcolm Shield, Climate Program Manager, Sustainability Group, City of Vancouver (Vancouver, BC, 19 October 2011)

Google Insights for Search does not permit analysis at the city level in Canada.

However, it does provide a list of municipalities and their relative search volumes (controlled for size) within the context of the data based on internet searches conducted at the provincial level, reported below. Table 4 shows that in British Columbia the terms “climate change” and “global warming” are most heavily searched in Victoria, and that Internet users in the City of Vancouver also search for these terms in large numbers. In Ontario, although the City of Toronto is ranked sixth among Ontario municipalities, the distribution of scores suggests that residents search for the terms “climate change” and “global warming” with about the same frequency as other Ontarians, with the exception of York which vastly outstrips all other municipalities in terms of the volume of searches for these terms relative to total searches on Google. These results suggest that using provincial trends as a proxy for city trends would be acceptable.

Table 4 *Relative Search Volumes for Ontario and British Columbia Municipalities*

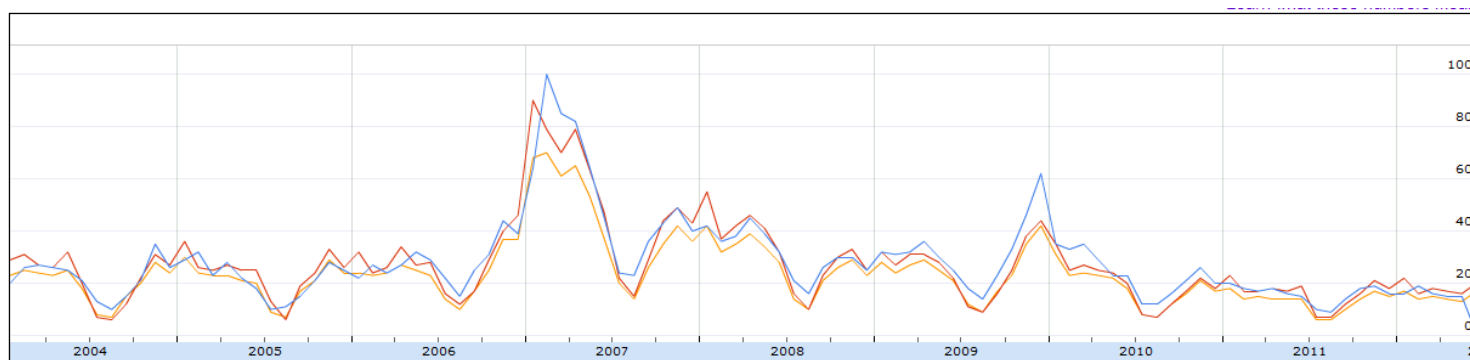
Ontario	Normalized Score	British Columbia	Normalized Score
York	100	Victoria	100
Markham	23	<i>Vancouver</i>	71
Guelph	21	North Vancouver	69
Peterborough	20	Nanaimo	55
Oshawa	18	Kamloops	51
Toronto	18	Williams Lake	50
Barrie	16	Prince George	48
Burlington	15	Langley	48
Ottawa	15	New Westminster	47
Thunder Bay	14	Burnaby	47

Data generated using *Google Insights for Search*. Comparison of Ontario and British Columbia search patterns using the search terms “climate change” OR “global warming”

The theory of issue salience presented above cannot explain the patterns of climate policy observed in Vancouver and Toronto. Figure 1 shows patterns of aggregate Google search trends over time (2004-2012) in British Columbia, Ontario, and Canada as a whole for the terms

“Global Warming” OR “Climate Change”. If issue salience was a cause of climate change policy making, we would expect to observe correlation between public attention to the issue and the development of municipal climate policy – perhaps with a time lag. Although the data show variation in attention to climate change over time in each of the provinces, the levels of attention do not track the timing of climate policy development in Vancouver or Toronto.¹⁴ The patterns of attention to climate change in British Columbia and Ontario mirror patterns of attention in the country as a whole, suggesting that subnational events and policy (both provincial and municipal) neither drive nor follow public attention to the issue. The patterns reflect larger climate policy developments at the national and international levels, suggesting that voters’ attention to climate change is motivated by non-local policy decisions, and that municipal politicians do not see these spikes in public attention as opportunities to attract votes through policy development.

Figure 1 *Patterns of Public Attention to Climate Change in Canada.*



Search Terms: “climate change” OR “global warming” **Legend:** Blue = BC; Red = Ontario; Orange = Canada
 Generated using *Google Insights for Search* (www.google.com/search/insights)

Federalism – Constitutional Effects

¹⁴ Google Insights for Search provides normalized and scaled data. For comparisons between geographic regions for the same search term the data is “normalized by the total traffic from each region” (“Is the data normalized” *Google Insights for Search*), and then the results are plotted “on a scale from 0 to 100 by dividing the total search volume at each point in time by the highest value within that same time frame” (Ripberger 2011, ft 9)

Another surprising finding of this study is the seeming lack of importance of federalism – in both its constitutional and fiscal forms. Toronto and Vancouver are located in different provinces that have expressed different priorities in terms of climate change through legislative action. The British Columbia government has enacted several legislative measures with the goal of mitigating climate change at the provincial level, including the implementation of a carbon tax in 2008.¹⁵ The province has also taken a number of actions in an attempt to shape climate policy at the municipal level.¹⁶ While Ontario is by no means a laggard, it has been less active in terms of creating legislation. While the David Suzuki Foundation’s *All Over the Map 2012* report heralds Ontario’s *Green Energy and Green Economy Act* as “pioneering” (Holmes 2012, 13) and “far-reaching” (Holmes 2012, 46), the report also notes that the province’s “current climate change action plan is very short on details” (Holmes 2012, 46). Furthermore, Ontario lacks policy intended to shape municipal climate policy development or a carbon pricing mechanism. This evidence suggests that the common mantra that “cities are creatures of the provinces” and thus have insufficient jurisdictional independence from provincial governments to make their own policy is overstated, at least in this policy area.

Fiscal Federalism

Most of the respondents I spoke to in both cities indicated that funding is an important part of implementing climate policy and that more money would be better, but when asked specifically about provincial and federal support they argued that their projects do not receive such funding and that it is not a significant consideration in their daily routine. Malcolm Shield

¹⁵ These measures are the Carbon Tax Act 2008; the Greenhouse Gas Reduction (Cap and Trade) Act 2008; the Greenhouse Gas Reduction (Emissions Standards) Statutes Amendment Act 2008; the Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act 2008; the Greenhouse Gas Reduction Targets Act (GGRTA) 2007; the Greenhouse Gas Reduction (Vehicle Emissions Standards) Act 2008, and the Utilities Commission Amendment Act 2008

¹⁶ Local Government (Green Communities) Statutes Amendment Act 2008; BC Climate Action Charter 2005; and the Climate Action Revenue Incentive Program (CARIP).

of the Sustainability Group explained that he and his colleagues look for funding for specific projects wherever they can find it (Shield 2011). This includes the provincial and federal governments, non-profit organizations, and private enterprise. Neither provincial nor federal funding was portrayed as a more important source of funding than any other. Furthermore, none of the Vancouver or Toronto officials I spoke with suggested that they adapted their policy initiatives in order to meet criteria for provincial or federal funding opportunities. Taken together, this evidence is inconsistent with the hypotheses above – that provincial and federal funding shapes climate change policy in municipalities.

Electoral and Party Systems

While both Vancouver and Toronto have high levels of climate change policy, they differ significantly in terms of the electoral and party systems in place. In the City of Vancouver the mayor and 10 councillors are elected in at-large elections rather than the more common ward, or neighbourhood system. Vancouver is also unusual for a Canadian municipality in that prospective mayors and city councillors tend to organize themselves into “civic organizations” – the equivalent of political parties – each of which runs a slate of candidates. In contrast, the 44 Toronto city councillors are chosen using a ward-system. This is a smaller-scale version of the single member plurality electoral system used for provincial and federal elections. Candidates may have ties to provincial or federal political parties, but they run in local elections as independent candidates and are not formally organized into civic parties. This evidence is inconsistent with the hypotheses above which predicted that cities in which politics was not structured by a party system and cities with ward-based elections would have low levels of climate policy. The findings here suggest that neither the party nor electoral systems are the cause (even indirectly) of climate change policy in Canadian municipalities.

Conclusion

Vancouver and Toronto have been more successful than most Canadian cities in implementing climate change mitigation policies. Despite literature about the importance of electoral factors, and the relative weakness of municipalities relative to their provincial counterparts, these have not emerged as relevant factors in my comparative analysis of the creation of climate change mitigation policy. Instead, ideational factors – participation in municipal level IGOs, learning from ENGOs, and the principled beliefs of key officials, as well as the existence of a dedicated environment department, an institutional factor, have been shown to be most important.

Further, I employ a methodologically innovative technique of using *Google* search trends to measure public attention to policy issues. Given the widespread availability and uptake of Internet use in Canadian society, the online tools available through *Google Insights for Search* allow researchers to measure the active attention of citizens to a range of issues. In this paper I have used this software to compare search trends for a single issue across geographic areas, but it can also be used to compare attention to different terms or issues in the same physical location. I suggest that this will be an important new technique to add to commonly used approaches to measure issue salience including media surveys and “most important issue” polling.

This paper presents an initial, simplified look at why two Canadian cities with good climate change policy records have made the decisions they have. An important strength of this study is that it helps us to rule out factors as necessary conditions to the adoption of policy measures. However, the methodology used here has an important limitation: it cannot account for multiple causal pathways, or any type of complex causality. It is likely that that several combinations of factors could lead to high levels of climate policy. This might mean that some factors found not

to be important in this study can lead to the development of municipal climate policy through interaction with other variables.

In future work I will move towards a more complete explanation of municipal climate policy in Canada that takes into account these challenges. Process evidence will be needed to create a fuller picture of the climate policy process in each city. By tracking the development of policy in detail, I will be able to identify causal mechanisms and see *how* particular variables matter – whether on their own or in combination with other factors.

Understanding why and how local governments create climate policy need not be a purely intellectual pursuit. Ideally, increased knowledge on this topic will help governments and environmental activists to design more effective strategies to reduce GHG emissions and create sustainable communities. And further, the increased knowledge will give us, as policy analysts and scholars, new tools and strategies to support efforts to reduce emissions and find alternative ways to achieve equivalent emissions reductions.

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