

Developing Green Cities: Explaining Variation in Canadian Green Building Policies

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Urbanization and global warming are among the most pressing issues facing humanity over the next 50 years. The International Panel on Climate Change reports that from 2000 to 2010 greenhouse gas (GHG) emissions were the highest in human history and annual increases were nearly double those from 1970 to 2000. Urban areas, where more than half of the global population currently lives, produce a disproportionate share of per capita emissions (IPCC, 2014). Although local governments have control over some sources of GHG emissions, there is significant variation among cities in terms of their responses to this challenge (Krause, 2011, 2012; Robinson and Gore, 2005; Schwartz, 2016).

Why do some local governments enact more climate change policies than others? Looking specifically to Canada, why has Toronto been more successful than Winnipeg and Brampton in this regard? Applying insights from the literature on the comparative politics of public policy to the study of urban politics, I use process tracing to examine how decisions were made in specific instances of policy making for one type of climate change policy: green building standards. I argue that in most cities electoral disincentives limit the adoption of green building policy but that some cities have successfully adopted such policy as a result of independent environment departments within the local government administration.

Buildings account for 27 per cent of Canada's total GHG emissions (Lawlor et al., 2006: 22), and represent approximately 40 per cent of the emissions over which local governments have direct or indirect control (calculated from EnviroEconomics, 2009: 4).¹ In contrast, municipal operations (including emissions from government-owned buildings) represent only 1.3 per cent of emissions controlled by local governments (4). This means that

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municipal policies to decrease emissions from private sector buildings are among those with the most potential to reduce overall GHG emissions in urban areas, but policies that apply only to buildings owned by the local government are likely to be minimally effective.

Green building practices “efficiently us[e] energy, water, and other resources; protec[t] occupant health and improv[e] employee productivity; and reduc[e] waste, pollution and environmental degradation” (US EPA, 2012: 1). Specifically as it relates to climate change, green building reduces GHG emissions through decreased energy use and more sustainable construction and demolition practices. Green building techniques are used in the design of new buildings and in the renovation of existing buildings.

In addition to their environmental benefits, green building and green building policies are attractive to local governments for many reasons. Green buildings often lead to long-term cost savings for building owners (Koski and Lee, 2014), and the task of determining whether building practices are sufficiently “green” is facilitated by the presence of multiple organizations, such as the Canadian Green Building Council, that provide guidelines, verification and certification for public and private sector buildings. Moreover, municipal policy makers have a wide variety of policy options for addressing this issue, and the Federation of Canadian Municipalities’ Green Municipal Fund provides financial support for local government studies and projects aimed at improving buildings’ water and energy conservation (Federation of Canadian Municipalities 2016).

A growing number of scholars have begun to explore local government sustainability and climate change policy, particularly in the United States and Europe (Aall et al., 2007; Bulkeley and Betsill, 2003; Krause, 2012; Portney 2013) but also in Canada (Dale et al., 2012; Gordon, 2016; Robinson and Gore, 2005). However, despite the advantages noted above, few have focused specifically on green building policy (but see Koski and Lee, 2014, on the US and McDonald, 2012, on Canada).

The Dependent Variable

The dependent variable here is the likely impact of green building policy on GHG emissions. I define policy as actions or regulations by the government that have measureable outcomes. While action plans and strategies may lead to the development of policy, they do not have tangible outcomes that can be measured and therefore are not considered policies. The likely impact of a policy is shaped by three key dimensions: its ambition, its scope, and the degree of coercion inherent in the policy instruments used.

The ambition of a policy is determined by the level of emissions reduction to be achieved. For example, a policy that requires buildings to be at

Abstract. Buildings produce a large proportion of Canada's greenhouse gas emissions and municipalities control a number of policy levers that can help to reduce those emissions. This article explains variation among Canadian cities regarding policies adopted to reduce greenhouse gas emissions, with a particular focus on green building standards. By applying insights from the study of the politics of public policy to urban politics, this article finds that while electoral disincentives prevent most cities from enacting high impact green building policies, the success of some cities can be attributed to the influence of independent municipal environment departments. These departments facilitate policy learning by providing information and resources. The findings suggest that policy makers could improve the effectiveness of local climate change policy by creating municipal environment departments that have organizational capacity—funding, staff, and a cross-cutting mandate—and are insulated from interference from politicians and line departments.

Résumé. Les édifices produisent une forte proportion des émissions de gaz à effet de serre du Canada et les municipalités contrôlent un certain nombre de leviers politiques susceptibles d'aider à réduire ces émissions. Cet article explique les variations entre les villes canadiennes au regard des politiques adoptées pour réduire les émissions de gaz à effet de serre, avec un accent particulier sur les normes de construction écologique. En transposant les enseignements issus des études portant sur la politique des mesures d'intérêt public à la politique urbaine, cet article constate que même si des facteurs dissuasifs d'ordre électoral empêchent la plupart des villes de mettre en place des politiques de construction écologique à impact élevé, le succès de certaines villes peut être attribué à l'influence de services de l'environnement municipaux indépendants. Ces services facilitent l'apprentissage des politiques en fournissant de l'information et des ressources. Les constatations suggèrent que les décideurs pourraient améliorer l'efficacité des politiques locales en matière de changement climatique en créant des services de l'environnement municipaux dotés de la capacité organisationnelle—budget, effectifs et mandat transversal—et soustraits de toute ingérence des politiciens et des services hiérarchiques.

levels 10 per cent more energy efficient than business as usual is less ambitious than a policy that requires an improvement of 20 per cent. The scope of green building policy refers to how broadly the policy applies to society, or the scale of GHG emissions that could be affected by the decision. For instance, a policy with maximum scope would apply to buildings owned by government and private actors, to new construction and existing buildings, to all types of buildings—residential, commercial, industrial and institutional—and to buildings of all sizes.

Local governments have multiple policy levers that they can use to reduce GHG emissions. The degree of coercion of the policy instrument selected influences the extent to which it is likely to lead to emissions reductions: more coercive policy instruments will be more likely to lead to reductions than less coercive instruments. The logic is that without some form of coercion by governments, citizens and firms are unlikely to adopt green building practices because they are unaware of the net benefits, because there are net costs (financial or opportunity) or because they are risk adverse and the uncertainty involved leads them to discount benefits. I define information provision and exhortations for voluntary action to be

minimally coercive, financial incentives to involve a medium level of coercion and mandatory regulation to be most coercive.²

In Canada, most municipal governments cannot unilaterally set or change their own building code. Instead, municipal building by-laws and policies, including green building standards, must be consistent with provincial building codes, few of which vary significantly from the standards set in the National Building Code of Canada (NBC) developed by the federal government. The NBC has no legislative force until adopted by a provincial government. Since 2005 the NBC has employed objective-based requirements that do not specify particular technologies or materials. This non-prescriptive approach allows for buildings to meet or voluntarily exceed performance requirements (Lawlor et al., 2006: 22). Municipalities can petition their provincial government for specific exemptions that allow them to require green building elements that exceed the minimum levels required in the building code.

Additionally, all Canadian provinces have established municipal acts that delegate powers to municipalities, and some have enacted specific legislation to govern the responsibilities of the largest cities. Whereas Brampton is governed by the *Ontario Municipal Act* (2001), Toronto and Winnipeg are subject to the *City of Toronto Act* (2006) and the *City of Winnipeg Charter* (2002), respectively. Within the bounds established by provincial governments, local policy makers have multiple levers at their disposal to encourage green building practices. In decreasing order of coerciveness, cities can require green building practices through bylaws or regulations, they can levy fees and property taxes, issue and enforce building permits, provide subsidies to individuals and corporations, undertake information and public education campaigns, and encourage desired behaviour by modelling it in their own operations.

A Theory of Municipal Climate Change Policy Adoption

To understand variation in the adoption of local climate policy, including green building standards, I suggest that we must take seriously both the electoral politics and the institutional contexts in which local policy makers are embedded. A major theme in studies of local government decision making has been the influence of economic actors, particularly the real estate development industry (Logan and Molotch, 1987; Stone, 1989). However, such accounts of urban politics rarely link these factors to broader theories of electoral incentives, widely applied in the comparative politics literature, about how politicians' drive to be re-elected influences their decisions (Docherty, 1997; Mayhew, 1974; Weaver 1986). Similarly, many accounts of the adoption of climate policy by local governments point to policy makers' desires to achieve "co-benefits," that is, goals

unrelated to the purported purpose of the policy (Betsill, 2001; Kousky and Schneider, 2003). However, these studies rarely link co-benefits, such as financial savings, to electoral incentives. I argue that the logic of electoral incentives—that is, the logic of the influence of policy makers' perceptions of how policies affect their re-election prospects—applies equally to local policy makers as to their counterparts at other levels of government.³

Local policy makers face a number of electoral forces that discourage the adoption of climate policy that goes beyond capturing the low-hanging fruit. Environmental policy, including climate change policy, tends to provide diffuse benefits to the public but concentrate costs on particular groups (Krause, 2012; on the distribution of costs and benefits, see Wilson, 1980), and may be seen to impede economic growth and competitiveness which policy makers tend to prioritize (Lindblom, 1982; Peterson, 1981). Moreover, local policy makers seek to minimize costs due to budgetary constraints (Kingdon, 1995).

The electoral incentives (or disincentives) that policy makers face for any given policy are directly related to the way in which that policy distributes costs and benefits. This in turn depends on choices the local government makes about policy settings and instruments, in other words, about its ambition, scope and coerciveness. For example, a decision to implement a policy that requires builders to meet certain green building standards (that is, with a given coerciveness and ambition) could be written such that it has varying scope: the policy might apply only to buildings owned by the municipality or to residential towers built by the private sector or to all buildings regardless of type or ownership. The distribution of costs and benefits in each of these scenarios varies. If the policy applies to the municipal buildings only, then the costs and benefits accrue to the local government. If it applies to all buildings, then the costs are distributed among all real estate developers and their customers, and the benefits are felt by the owners who save money from better energy efficiency, occupants who experience a more comfortable environment and society at large that faces a (very slightly) smaller risk of the effects of catastrophic climate change.

While electoral disincentives may explain why most cities have not much climate policy that is likely to lead to significant GHG reductions, these disincentives should apply equally to all municipalities. They cannot, therefore, explain why some cities overcome these challenges and others do not. However, insights about the role of institutions, particularly bureaucratic structures (Horn, 1995; Lewis, 2003), are useful for explaining this variation. I argue that some municipalities have been successful in overcoming electoral barriers to climate policy due to the institutional structure of their administration: in particular, the presence of an independent environment department that prevents electoral disincentives from blocking policy adoption.

Canadian municipal administrations are variously organized: some have designated environment departments, while others create environment-related positions within traditional municipal departments, such as planning or public works, or simply assign environmental responsibilities to the existing workforce. These designated environment departments may be more or less independent depending on the degree to which they are “insulated” from political and administrative interference, and their degree of organizational capacity.

Environment departments can be taken as insulated if they are protected from interference by politicians and traditional line departments, such as public works or planning. An environment department’s insulation is greater if it is part of the permanent bureaucratic structure, if it is administratively separate from line departments and if it has a dedicated source of funding that is not dependent on allocations from other administrative units. These features protect environment departments from the unpredictability of electoral cycles and from the often traditional notions (that is, indifference to climate change) held in many planning and public works departments about the appropriate role of municipal governments. This insulation from mainstream departments allows environment departments to be a new “locus of authority” (Hall, 1993: 280) and to promote a new policy paradigm in which issues of climate change and sustainability are incorporated into all aspects of municipal policy making.

Organizational capacity is the second dimension of independence. Existing literature focused on central governments has shown that the design of bureaucratic units can influence bureaucratic behaviour and may shield policy decisions from future interference (Horn, 1995; Lewis, 2003). Skocpol (1985) argues that an important factor in the creation of public policy is the capacity of the state apparatus itself, and Zibblatt (2008) finds that local bureaucracies with more money and expertise provide more public goods. This is consistent with Carpenter’s emphasis (2001) on organizational capacity as a determinant of bureaucratic autonomy and is echoed in Robinson and Gore’s (2005) findings that municipal bureaucrats see a lack of fiscal capacity as a barrier to implementing climate policy.

That sustainability is their only area of responsibility contributes to independent environment departments’ organizational capacity. A municipal environment department’s organizational capacity is a function of the financial and human resources available within the department, including funding for environmental projects, recruitment of employees dedicated to environmental issues who share principled and causal beliefs (Goldstein and Keohane, 1993) about the role of municipal government, the department’s scope and mandate to consider and promote environmental issues across the whole municipal organization and time for staff to work on environmental projects and to apply for outside sources of funding. This capacity stands in

contrast to the alternative of simply adding climate policy to the responsibility of staff in other departments. Increasing the workload of already busy municipal bureaucrats is unlikely to be successful because these staff will not have time to devote sufficient attention to the issue.

To use Hecló's terminology (1974), independent environment departments achieve their policy goals, I hypothesize, not by "powering" but by "puzzling." Such departments use their organizational capacity to facilitate policy learning leading to all three types of policy change as defined by Hall (1993): incremental change to policy settings, strategic actions to change policy instruments and more significant paradigm shifts. The presence of these departments also helps to institutionalize ideas of sustainability and climate change mitigation. As Goldstein and Keohane describe it, the institutionalization of ideas—embedding ideas in rules and norms—shapes policy by constraining the choices available to policy makers (1993: 21). By signaling the long-term importance of climate change as an issue to be addressed by the local government, environment departments make it harder for line departments to ignore sustainability concerns. Additionally, their organizational capacity allows them to provide the money, staff and information that facilitate the institutionalization of such considerations within line departments. One way they might do this is by supporting potential policy entrepreneurs (Kingdon, 1995) within those line departments, in other words, by helping staff to identify opportunities to use their position to advance the climate change mitigation agenda.

Case Selection and Methodology

In this article, I am interested in explaining why some cities enact high impact green building policy and others do not. The cases were selected to explain variation in the value of the dependent variable (Goertz and Mahoney, 2012): one city (Brampton, Ontario) that has no official green building policy at all, one (Winnipeg, Manitoba) with low-impact green building policies and one (Toronto, Ontario) with relatively high-impact green policy.

All three cities examined in this paper have populations of over 500,000 residents. Toronto and Winnipeg are each the capital and largest city of their home province. Brampton, a rapidly growing suburb located to the west of Toronto, is Canada's ninth largest city. Both Winnipeg and Toronto are single-tier municipalities, whereas Brampton is a constituent municipality of the Region of Peel. In all three cities the mayor is elected at-large and there is a ward system and with no formal political parties. The administrative structure of the local government is similar across all three municipalities. Each is headed by a professional manager or chief administrative officer and is composed of line departments that are divided into branches and

working groups.⁴ Neither Brampton nor Winnipeg has an environment department within the municipal administration, but Toronto has several, including the Toronto Atmospheric Fund (TAF).

Within-case process tracing analysis allows me to draw conclusions about the operation of causal mechanisms and to account for the particular context of each case. To use process tracing, the researcher theorizes what should be observed in the cases if the hypothesis is correct before conducting an in-depth examination of one or several cases (Bennett, 2010). In this analysis, if the hypothesis about the influence of municipal environment departments is correct, I expect to observe evidence of electoral disincentives to the adoption of green building policy in all of the cases. For example, I expect to observe indications that policy makers are concerned about both the costs of the policy to the local government and the prospect of imposing costs on the private sector. Additionally, where policy is proposed that will affect the private sector, I expect to observe that real estate developers will actively oppose it. Finally, I expect to observe that independent environment departments not only exist in cities that have adopted high impact green building policy, but also provide information and resources to support the work of line departments and individual proponents of the policy. The process tracing evidence presented is drawn from data gathered from interviews with current and former local politicians, staff, and NGO representatives,⁵ as well as official records of council and committee meetings, staff reports, official news releases, media reports and secondary sources.

Brampton, Ontario

The City of Brampton has no green building bylaws or council-sanctioned internal policies. Why? Evidence from Brampton is consistent with the theory presented above. Electoral disincentives prevent adoption of green building policy, and there is no independent environment department within the municipal administration to provide information, resources or support for potential policy entrepreneurs.

Brampton policy makers face several kinds of electoral disincentives. First, green building is not seen by politicians or staff to be a priority for residents. “Politicians care about what is top of mind” (City of Brampton staff member, interview with author, 2014) and the most prominent issues are economic growth, job creation, traffic congestion (Sanderson, interview with author, 2013; Waters, interview with author, 2013), and sound financial management (Pyne, personal communication, 2014). The Energy Group in the Department of Buildings and Property Management supports green building practices for city-owned and operated facilities, including providing consulting services to other divisions and departments

to encourage them to include energy conservation and efficiency in plans for new construction and retrofits. Climate change mitigation is seldom the explicit justification. More often, they use the language of cost savings: facilities managers can reduce operational costs by reducing electricity use (Pyne, 2014).

Additionally, politicians and staff rarely hear directly from citizens on this issue. The only case of lobbying for green building in Brampton was a proposal for a green roof policy by Bart Danko, a York University graduate student. The Facility Services Department reviewed the proposal and, although its report to Council was positive in tone, it did not recommend a green building policy. Instead, the report concluded that a review of “green” facility options was ongoing, and that the department would

consider the establishment of guidelines that will require staff to contemplate a green roof when repairs of existing roofs at City-owned properties are required, as well as establishing standards within all new City-owned facility construction projects to include green roof provisions. (Brampton, 2014)

This falls short of the definition of policy used here. The language is non-committal and talks about the eventual development of a policy. Moreover, the proposed considerations are small in scope as they apply only to buildings owned by the municipality.

Brampton politicians see green building practices as inconsistent with economic growth. For example, Councillor John Sprovieri’s response to Danko’s questions about creating a green roof policy that would apply to private construction in Brampton reflects his skepticism of the compatibility of green building with economic growth.

To us our big concern is the cost...to the price of homes, to the price of business, and is that going to scare away potential investors in our city because we’re forcing them to do something that is expensive and may not yield the benefits that you’re indicating. (Danko, 2013)

In terms of organizational capacity, the few staff members who push for climate change policy within the Brampton administration do not have significant policy influence, and there is no dedicated environment department within the administration to support them. These individuals hold the few environmentally oriented positions within the Brampton bureaucracy: the Director of Facilities Management in the Energy Group (described above) and two environmental planning positions in the Department of Planning, Design and Development. As of 2013 there were no councillors who advocated for climate policy of any type.

Green building policy in Brampton has been stalled by electoral disincentives. It is not a priority for residents, and policy makers are fearful that it will have a negative impact on economic growth. Politicians have not taken up the cause, and there is no independent environment department to support the few staff members who hold positions from which they can advocate for such policy.

Winnipeg, Manitoba

Winnipeg's green building policy consists of two parts: one sets out requirements for new city-owned buildings and one provides guidelines for existing city-owned facilities. These policies were uncontroversial, narrowly applicable, and utilized resources already in place due to similar provincial policy. Under the policies, new buildings and renovations over 500 square metres must be certified under one of three third-party green building standards and meet Manitoba Hydro energy conservation performance requirements. Existing buildings over 3000 square metres are subject to a programme of "continuous improvement" of energy and water use, for which staff are required to report back annually as part of the budget process with recommendations for actions and investments consistent with "benchmarked data" (Regan and Hall, 2011). These policies are reasonably ambitious, but the scope of buildings to which they apply is extremely limited, and the policy for existing buildings does not guarantee action.

The policies were justified on the basis of providing co-benefits, or electoral advantages, and were discussed in terms of their likely costs in the short and long term. Advantages included job creation, increased property values for the new buildings, increased productivity of workers, improved health outcomes, ecosystem protection and reduced demand on landfills and opportunities to demonstrate environmental leadership (Regan, 2010). The policies were also billed as likely to create financial savings in the long run and have low cost in the short run: many new city-owned buildings would already be subject to the provincial government's 2008 green building regulations. By the time the policy came into force, several City of Winnipeg projects had already received LEED certification and staff had already been trained in order to implement the provincial requirements (3–5).

Asked why the city did not consider a policy that would apply to the private sector, the former acting environmental co-ordinator used language consistent with Lindblom's argument (1982) that governments are unwilling to interfere with business interests for fear of job losses and associated reductions in electoral support:

I don't think it's our jurisdiction necessarily....But even if we had the power, I don't think we would do it.... The buildings are not our

buildings. They are other individuals'. We don't know their financial realities. There is a cost to building green, I think it's becoming less, but there is certainly a differential. I just don't think it would be the City's jurisdiction to do that, that we *should* do that. We can recommend and we can educate. (Regan, interview with author, 2014)

In addition to evidence that electoral considerations were at the forefront of the decision to adopt this limited green building policy, there is evidence that the adoption of these policies was not the result of a push from personally committed politicians. Rather, the councillors who put forward the galvanizing motions for the New Buildings policy were not known for their environmental credentials and did not exhibit any personal commitment to municipal action to combat climate change. Councillor Jenny Gerbasi, the only councillor who had demonstrated commitment to municipal climate change action, was not a member of either committee that discussed the proposals and did not comment on the policies when they were moved in the council chamber. No objections to the policies were recorded in the minutes of any committee or council meeting, and the full text of the Green Building Policy for New Buildings was approved "by Consent," without consideration or amendment by council (Winnipeg, 2010: 62).

Winnipeg's limited green building policies were developed in large part by the city's environmental co-ordinator (Hall, interview with author, 2013; Regan, 2010: 6–7). The city's environmental co-ordinator (EC) position is different than the environmental positions in the Brampton administration. Although it is housed within the planning department, the main role of the EC is to co-ordinate environmental initiatives across the municipal government, including internal operations, planning and external partnerships (Hall, interview with author, 2013). Having a broad mandate is one component of organizational capacity, but the Winnipeg EC does not have many of the other elements of organizational capacity or insulation that an independent environment department would have: the position is part of the planning department and has no dedicated source of funding. Moreover, because the EC is not part of a larger department, organizational capacity is significantly compromised if the position is left vacant—as was the case for more than a year from 2013 to 2014. In contrast, a hypothetical environment department would provide greater continuity of expertise and influence.

In Winnipeg electoral disincentives constrained the adoption of green building policies: policy makers were concerned about the cost to local government and developers, and the public was inattentive to the issue. Staff used the language of electoral incentives to advocate for green building policy. While this effort was successful, the resulting policies are likely to have only a very small impact on GHG emissions due their limited scope.

Toronto, Ontario

The City of Toronto's green building policies are multiple, but the two that make up the core of the city's efforts are the Toronto Green Standard (TGS) and the Toronto Green Roof Bylaw (GRB). Each is broad in scope and highly coercive to the point that landscape architect Scott Torrence describes them as "two of the most incredible sustainable development innovations that [he has] seen in [his] career" (Danko, 2013). The TGS is a custom-designed green building standard that consists of two tiers of measures: minimum standards that are mandatory for all new buildings in the City of Toronto whether owned by the city or private developers and additional voluntary standards for more ambitious builders. Projects that meet all of the requirements for the optional second tier receive a 20 per cent rebate on the development charges paid to the city (Toronto, 2013). Discussions began in 2004 and the final version of the policy came into effect in 2010.

The City of Toronto installed a pilot green roof at City Hall in 2000 and included the promotion of green roofs in its 2001 Environmental Plan (Banting et al., 2005: 2–3). An initial Green Building Strategy was adopted in 2006 requiring city-owned buildings to install green roofs "where feasible and practical" and offered subsidies for their installation on private buildings (Toronto, 2008: 1). In 2009 the city adopted the Green Roof By-Law which mandates the installation of vegetative layers on rooftops for a wide range of new buildings in both the public and private sector (Toronto, 2012).

Why was the City of Toronto able to adopt a policy with broad scope and coerciveness? Consistent with my theory, Toronto officials faced similar electoral disincentives to their counterparts in the other cities, but the actions of an independent environment department within the bureaucracy supported the efforts of politicians and staff to overcome them.

While the electoral disincentives observed in Winnipeg and Brampton were present in Toronto, the dynamics were different. Because the TGS and GRB apply to the private sector, they impose concentrated costs on real estate developers. This makes the developers likely to lobby actively in opposition to those policies (Wilson, 1980). This led to much closer public attention to those elements of the policy that applied to the private sector as opposed to those that applied to city-owned buildings. The result was that the disincentives related to cost savings were minimized but those related to the impact on economic growth were significantly magnified.

The city's first foray into green building was through the Better Buildings Partnership. Beginning in 1996, the City of Toronto partnered with local businesses and energy service contractors to assist their efforts to implement energy efficiency measures for retrofits and new construction

of industrial, commercial, and institutional buildings (Toronto, *n.d.*). One of the key mechanisms has been to provide loans to offset the upfront costs of energy efficiency measures (Gore and Robinson, 2009: 149).

Despite this success, Toronto staff members were aware of the potential for developer opposition to both policies and sought to minimize it by including them in the policy development process. Consultations with stakeholders included workshops and a survey of local developers (Toronto, 2006c: 3). Both in the survey and workshops stakeholders from the development industry opposed mandatory requirements and strongly preferred that the city pursue a voluntary approach or provide subsidies to encourage green building (Toronto, 2006d). Additionally, members of the property development industry spoke out against the TGS and the GRB during public consultations, meetings of committees and in the media, opposing both specific elements of the policy and the idea of making it mandatory for the private sector: “My message today is educate me and incent me to green my roof, don’t legislate me” (Hanes, 2009). Even developers who were known proponents of green building were opposed to the TGS:

“I don’t think it should be mandated” said [Sean] Mason [president of Mason Homes], “it’s a wrong move to legislate green.”... “Why shove 10 grand in extra costs on a new home with already far superior energy saving values when you’ve got millions of older homes that don’t even have adequate insulation?” (Swainson, 2007)

Unlike their counterparts in Brampton and Winnipeg, Toronto policy makers encountered explicit opposition to green building policy. However, Toronto staff and councillors also had evidence that the installation of green roofs was likely to be beneficial to the local economy and environment. The City of Toronto had been active in exploring the effects of green roofs, including commissioning a study by researchers at Ryerson University (Banting et al., 2005). The findings of this study showed that the installation of green roofs on privately owned buildings across the city would lead to savings for the local government and benefits to the local economy by preventing economic losses through improved air quality, decreased urban heat island effect and increased building energy use (Banting et al., 2005).

In contrast to the situation in Brampton and Winnipeg, in Toronto there is evidence of at least some public support of the policy proposals. Over 200 members of the public attended each of two special joint meetings of the Roundtable on the Environment and the Roundtable for a Beautiful City in November 2005 and July 2006, a turnout that Deputy Mayor Joe Pantalone described as the largest he had seen for a meeting about an issue that was not “bad news” (Miller, 2008: 72). In both cases there

were over 30 speakers and most were supportive of the existing recommendation or pushed for more stringent requirements (Toronto, 2006a, 2006b, 2006c).

The city's ability to pass the Toronto Green Standard and the Green Roof Bylaw in the face of these conflicting electoral incentives was strongly influenced by the support of the Toronto Atmospheric Fund (TAF). Created in 1991, TAF is an arms-length think tank with an explicit mandate to support the City of Toronto in its climate change mitigation goals. It has been described as "the world's first municipal agency designed to innovate solutions to climate change, reduce greenhouse gas emissions, and improve air quality" (Cahill, n.d.: 1). The organization is funded by a \$23 million endowment from City of Toronto and governed by provincial legislation. These features provide it with a degree of independence from political influence not experienced by most municipal organizations, but it remains within the purview of the City of Toronto as council retains the power to appoint the Board of Directors as it sees fit (*Toronto Atmospheric Fund Act 2005*: s.3) and could theoretically withdraw the endowment. However, TAF is somewhat insulated due to its power to raise funds in a number of ways that are not limited to direct city funding (*TAF Act 2005*: s.5).

TAF also has significant organizational capacity. The seven core staff members achieve their objectives using three primary strategies: research, direct program delivery and funding. They describe the role of TAF as "de-risk[ing] ideas so that staff and public officials at City Hall can properly evaluate the technical and financial feasibility of a particular project [or] policy" (Jones, personal communication, 2012). This organization supported the work of individuals within the administration by undertaking pilot projects to demonstrate that green building practices can be beneficial for developers.

One such project, the Green Condo Loan program, initiated in 2005, provided loans to developers in order to finance construction of new condo towers that were at least 25 per cent more energy efficient than the model national building code. This was attractive to the builders—even more so than the existing Better Buildings Partnership—because the loan would be repaid by the condominium corporation after the units had been sold. It was designed to be attractive to unit owners: loan repayments would be less than the cost savings for utilities. In other words, even with the loan repayments, condo fees would be less than in an equivalent conventional building (TAF, 2013). The Green Condo Loan program introduced a new model of funding for green building and demonstrated that significant improvements in energy efficiency could be achieved in the residential sector relatively easily and more affordably than previously expected. For both developers and policy makers, the program reduced uncertainty about the risks of green building.

Based on TAF's findings that green building can be profitable for developers, planning department staff were able to convince council that the first tier of the TGS should *require* new condominiums to be 25 per cent more energy efficient than the model national building code and to provide rewards if builders achieve 35 per cent reductions or more (TAF, 2013). The Green Condo Loan program helped staff and politicians win over skeptics in both government and the private sector. It showed policy makers that a policy requiring green building in the private sector would not be detrimental to the industry and provided a rationale for imposing a mandatory level of efficiency.

Councillor Glenn De Baeremaeker argues that beginning in 1991, through careful data collection and analysis, the TAF built "a legitimacy, and a knowledge base, and a set of relationships" that allowed it to institutionalize ideas of sustainability at the City of Toronto. This process took place, he argues, over the course of a period during which political leadership was not advocating for environmental action. As a result, however, when Mayor David Miller was elected in 2003 and began to actively push for climate change policy, TAF could support that agenda because it had accumulated experience, knowledge and credibility (De Baeremaeker, interview with author, 2012).

Miller made climate change mitigation a key issue during his mayoralty (2003–2010), and served as chair of the C40 group, an international climate change-focused organization made up of the mayors of major cities (C40 Cities, 2011). This personal commitment sent signals to councillors and staff that proposals for climate change policy would be actively considered by the leadership (Welsh, interview with author, 2012). However, Miller could not single-handedly determine the course of climate policy in Toronto. As in most Canadian municipalities, there are no organized political parties at the local level in Toronto and the mayor's vote on council has no more weight than the vote of any councillor. Moreover, because the City of Toronto has a very large council, Miller's vote was only one of forty-five. In this context, the mayor can set the tone and the policy agenda but cannot create policy or bylaws unilaterally. By demonstrating the feasibility of green building standards, both technically and financially, the Toronto Atmospheric Fund made it easier for Miller to fulfil his climate change agenda.

Alternative Explanations

Thus far I have tested the hypothesis that, in the face of electoral disincentives, the influence of an independent environment department within the municipal administration can facilitate the adoption of green building standards. The evidence from the three cases examined is consistent with the

empirical predictions of the hypothesis, outlined above, and this increases our confidence in the causal mechanism. However, as noted by Beach and Pedersen, process tracing does not allow us to claim that this is a *sufficient* cause of the outcome. Rather, we can claim only that the “mechanism was present in the case and that it functioned as expected” (2016: 89).

Other factors could have influenced the observed variation. For example, Canadian municipalities have limited autonomy (Smith and Spicer, 2015) and so differences in green building policy could be the result of variation in the incentives and restrictions imposed by provincial governments. Or, as urban political economy scholars might hypothesize (for example, Logan and Molotch, 1987), policy differences might be the result of the varying influence of real estate developers. However, the evidence suggests that these are weaker explanations of the outcomes in Brampton, Toronto and Winnipeg.

While provincial governments exert some influence over green building practices, provincial incentives and restrictions cannot explain the observed variation among the cities. In Toronto, the municipal government actively opposed restrictive provincial standards and found ways to circumvent them. For example, the city petitioned the provincial government to include an explicit permission for requiring green roofs in the *City of Toronto Act, 2006* (Welsh, interview with author, 2012). Additionally, the knowledge that municipalities are not permitted to require standards that exceed those of the OBC (Toronto, 2008: 6) did not prevent the adoption of the TGS. Instead, the city began by adopting it as a voluntary standard and looked for existing provisions through which it could be made mandatory, such as through amendments the Official Plan and Zoning Bylaw and site plan approval processes (Toronto, 2008: 5). Finally, the city petitioned the province to amend the *City of Toronto Act* to allow it to “require energy efficiency measures that exceed the levels set out in the Ontario Building Code” (Toronto, 2008: 2). In contrast, the City of Brampton has not created any green building policies, either within the bounds of provincial regulations or that push beyond such restrictions. Likewise, in Winnipeg the municipality adopted low-impact green building policies that took advantage of incentives provided by the provincial government, but there is no evidence that the city sought to enact policy that exceeded what was allowed by the province.

The evidence from these cases also suggests that varying influence of real estate developers is not responsible for variation in green building policy. In Toronto, developers made statements opposing the policy (particularly the mandatory aspect of it) and in Brampton and Winnipeg the development industry was absent from discussions of green building policy. They voiced neither support nor opposition. While it is possible that there was behind-the-scenes opposition from developers in Brampton and Winnipeg, I did not find any direct evidence of this. It is also possible that the implicit

influence of the development industry manifests itself in policy makers' concern about the effect of green building policy on economic growth, but in this analysis that is considered to be an electoral consideration.

In sum, evidence from the three cases suggests that this article's primary hypothesis, the influence of independent municipal environment departments, is a better explanation of local government green building policies than alternative hypotheses of provincial control and the influence of developers.

Conclusion

Buildings produce a large proportion of GHG emissions in urban areas across Canada and municipalities control a number of policy levers that can help to reduce those emissions. Why have some Canadian cities been more successful than others in adopting green building policies that are likely to lead to significant emission reductions? This analysis has found evidence supporting the hypothesis that electoral factors acted as disincentives to the adoption of high impact green building policy in the cases of Toronto, Brampton, and Winnipeg. However, in Toronto, an independent environment department within the administration helped the city to overcome these disincentives. The Toronto Atmospheric Fund demonstrated that green building is less threatening to builders' bottom lines than was previously thought. By providing information and resources, the department supported the efforts of dedicated officials and facilitated policy learning. Alternative explanations that emphasize provincial control and the influence of the real estate industry are not well supported by the evidence.

Process tracing, the methodology used in this analysis, allows researchers to test whether independent variables have causal effects and how they produce those effects. Rather than aspiring to experimental design that approximates a medical trial as the "gold standard" (Beach and Pedersen, 2013: 78), scholars who employ process tracing look to the model of a legal trial. This is different from comparative methodologies, both small- and large-*n*, in which the cases selected are a sample of a larger population. For such methodologies, the larger the sample size, the less likely it is that observed causal relationships are the result of chance or spuriousness. Process tracing's in-depth examination of cases sidesteps the problem of small sample size by empirically demonstrating the links in the causal chain. However, because it is usually undertaken for a small number of cases, the generalizability of process tracing findings may be more limited than those of a large-*n* study. One useful avenue for future research would be to explore the hypotheses tested here in other cities, either in Canada or abroad. Process tracing could also be fruitfully applied to examine the causal mechanisms of other hypotheses generated within existing literature regarding municipal climate change policy efforts.

The findings of this article suggest that policy makers might increase the effectiveness of local climate change mitigation efforts by creating environment departments within municipal administrations. In addition to the Toronto Atmospheric Fund, examined here, another Canadian example is the City of Vancouver's Sustainability Group. Such departments should be independent, in the sense that they have organizational capacity—in the form of funding, staff, and a cross-cutting mandate—and insulated from interference from politicians and line departments. The creation of such departments is within the current jurisdiction of all Canadian municipalities. In future, local efforts to form independent environment departments could be encouraged by the Federation of Canadian Municipalities or, in an extreme scenario, required by provincial governments.

Endnotes

- 1 According to a report for the Federation of Canadian Municipalities, in 2006 local governments had direct or indirect control over 44 per cent of total Canadian GHG emissions (EnviroEconomics, 2009: 1).
- 2 Subsidies are considered to be more coercive than information provision or voluntary standards because they put non-adopters at a competitive disadvantage relative to adopters.
- 3 The term “policy makers” is used to refer to both politicians and staff. Following Kingdon (1995: 163), I suggest that while staff do not face direct electoral pressures, they consider electoral factors because they know that all policy proposals must be passed by council which is made up of politicians who *do* face direct electoral pressures.
- 4 In Toronto the largest administrative units are referred to as “divisions” rather than departments. There are also a large number of issue-specific arms-length organizations called agencies, boards and commissions (ABCs).
- 5 I conducted telephone and in-person interviews with 18 individuals in Winnipeg (February–March 2013, December 2014, and January 2015); 20 in Toronto (February and March 2012); and 18 in Brampton (May 2013; April–May 2014). In all cases participants were selected using a “snowball sampling” method whereby I identified interview respondents based on their involvement in or knowledge of the municipal climate policy process, and asked them to recommend others. They were current and former city councillors, staff, NGO activists, and journalists. Interviews were semi-structured and open-ended. While some questions were asked to all respondents, many were formulated for particular respondents based on that individual's role in policy development and implementation.

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Appendix 1: Selected Interviews and Personal Correspondence

Brampton

- Susan Jorgenson (May 2013), Manager, Environmental Planning
- Dale Pyne (May 2014), Manager of Facility Services, Buildings and Property Management
- John Sanderson (May 2013), Regional Councillor
- David Waters (May 2013), Manager, Land Use Planning

Toronto

- Glenn De Baeremaeker (February 2012), City Councillor
- Lyle Jones (March 2012), Stakeholder Support Co-ordinator, Toronto Atmospheric Fund
- Jane Welsh (March 2012), Acting Project Manager of Environmental Planning

Winnipeg

- Jenny Gerbasi (February 2013), City Councillor
- Ian Hall (February 2013), former Environmental Co-ordinator
- Patti Regan (December 2014), former Acting Environmental Co-ordinator