Dale, A., S. Burch and J. Robinson. (2018). Multi-level governance of sustainability transitions in Canada: Policy alignment, innovation, and evaluation. In *Climate Change in Cities: Innovations in Multi-Level Governance,* Editors S. Hughes, E. Chu and S. Mason. Springer

The multilevel governance of sustainability transitions in Canada: Policy alignment, innovation, and evaluation

Ann Dale, Sarah Burch, John Robinson, Chris Strashok

1. Introduction

In light of particularly wicked socio-ecological problems such as climate change, calls have been made for new forms of governance that allow for a range of actors, flexible partnerships, and creative co-production of knowledge to enable transitions to more sustainable development pathways. Twenty years ago in the 1992 United Nations Conference on Environment and Development, Agenda 21 forged new governance arrangements between governments at different scales, with non-governmental organizations (NGO) and local authorities. Since then, the need for systemic change has become more urgent with climate change adaptation and mitigation imperatives and the requisite transition to a low carbon economy, with many scholars and organizations calling for transformative change in current development paths (Burch et al., 2014; Westley et al., 2011). The degree, timing and nature of this change is socially contested, evokes vested interests and consensus at this time remains elusive. To further complicate matters, the low carbon economy transition is not simply the task of formal government but rather a shifting constellation of private and public actors, through formal and informal mechanisms, investments and the acceleration of innovations by local governments across the country.

While the accumulation of human-induced greenhouse gas emissions is a phenomenon occurring at the global scale, emissions stem from local contexts (Guston 1999, (Ibrahim et al., 2012). In this way, climate change requires integrated governance that bridges social-ecological, temporal, and jurisdictional scales, instantiating the need for innovative forms of multi-level governance (Adger et al., 2005; Bulkeley and Betsill, 2005; Bulkeley and Castan Broto, 2013). Furthermore, governance is not simply the domain of formal government; it encompasses all of the processes and interactions aimed at solving a collective problem (Bevir, 2013).

Greenhouse gas emissions trajectories are clearly shaped by fossil fuel-based technologies, but perhaps even more important are the social, political, and economic contexts underpinning the use of these technologies (Burch, 2010; Shaw et al., 2014). In other words, in order to achieve communities that are sustainable, resilient, and low carbon, a deeper shift in the logic of economies and the values that reinforce them, must inevitably occur. These transformative shifts thus require communities to be imaginative,

radical, and ambitious, pursuing sustainability as a complex set of value propositions about what defines a 'good life' (Burch, 2016). Such shifts also rest on a model of governance that is participatory, and effectively integrates the, often divergent and contested, knowledge and capacities of civil society, technical experts, Indigenous communities, the private sector, and decision-makers (while of course recognizing that these groups are not mutually exclusive). Jurisdiction over greenhouse gases overlaps, so it is crucial that municipal, provincial, and federal policies are congruent rather than contradictory (Dale, 2008; Shaw et al., 2014). These overlapping responsibilities draw our attention to the governance dynamics that are at play in the design and implementation of climate change policy.

Such considerations suggest the importance of a multi-level governance approach. While the urban or community scale is an important context within which to explore sustainability transitions, such an approach highlights the dynamic interactions amongst scales (Bulkeley and Betsill, 2005), mirroring the systems-based approach of the sustainability transitions literature. Furthermore, it highlights the potential influence of 'fluid, issue-oriented alliances' between levels of government and various actors (a polycentric model) in contrast to a more hierarchical model in which competencies are distributed rather than overlapping (Bulkeley and Betsill, 2003; Hooghe and Marks, 2003).

Understanding the relationships among actors, the distribution of power (viewed as "the capacity of actors to mobilize resources to realize a certain goal" (Avelino and Rotmans, 2011), is central to an exploration of governance that has sustainability as its explicit goal (Bulkeley et al., 2015). This enlarged and expanded sphere of stakeholders (civil society, researchers, practitioners and private sector leaders) demands an unprecedented level of collaboration between governments and civil society. Others are calling for a collective intelligence model taking advantage of new digital technologies that convene large groups—a community, region, city or nation—to think and act intelligently in a way that amounts to more than the sum of their parts (NESTA 2017).

We explore the case of British Columbia in the sections that follow, in the interests of asking the following questions: 1) in what ways has policy alignment and at various levels of government shaped the design and implementation of climate change responses? 2) How important is policy congruence between levels of government in the acceleration of climate innovations? As climate leadership in British Columbia wanes and other provinces take center stage, we speculate about the implications of these research outcomes in the context of Ontario.

These two provinces were chosen as they represent two variants of emerging multi-level governance. In the case of British Columbia during the first phase of our research, there was strong provincial and local government alignment, within the context of a federal vacuum. Presently, Ontario is benefitting from launching its extensive climate action plan in the context of complementary federal leadership and its recent announcement of a national carbon tax. It is now moving forward to incent local municipalities to accelerate their take-up of climate actions.

2. British Columbia: Provincial leadership spurring municipal innovation

2.1 Case Context

British Columbia presented a unique opportunity to explore the implementation of climate innovations as, beginning in 2008, there was unprecedented provincial leadership and local government cooperation happening with respect to climate change adaptation and mitigation, but in a national vacuum. The BC Climate Action Secretariat (CAS) had begun a series of orchestrated and coordinated steps to accelerate the take-up of climate action across the province (Dale, 2014). These included a strong legislative framework to stimulate climate change adaptation and mitigation innovation and create a level playing field for local governments. The Carbon Tax Act, introduced in July 1, 2008, started to phase in an escalating revenue-neutral carbon tax, where one hundred per cent of the revenue from the tax was returned to taxpayers through reductions in other provincial taxes, with built-in protection for lower-income British Columbians (references).

This legislative innovation was complemented by a key policy instrument, the BC Climate Action Charter, and as of today, of BC's 180 of BC's 188 local governments have signed the charter. The province also mandated carbon neutrality and mandatory reporting across all public sector organizations including government offices, schools, post-secondary institutions, Crown corporations and hospitals, to measure operational GHG emissions, reducing those where possible, offsetting the remainder and demonstrating leadership through public reporting. Since 2010, British Columbia has achieved carbon neutrality each year across its entire provincial public sector (BC Government website, accessed March 5, 2017).

These legislative and policy innovations were underpinned by a suite of reporting and accountability measures, on the premise that "what is measured is managed." Financial incentives were also put in place as well as tools to accelerate policy implementation. Across the province, and in the face of acute economic constraints, local governments have reduced GHG emissions, developed local projects to balance emissions, purchased offsets to compensate for emissions, and, in many cases, developed financing innovations ranging from carbon funds to regional offset strategies (Burch et al., 2014; Shaw et al., 2014).

The evolution and drivers of climate change responses in local governments in BC from 2010 to the present has been extensively studies in the Meeting the Climate Change Challenge (MC^3), a tri-university research project involving over fifteen research partners from civil society, public sector and quasi-institutional organizations in the province of British Columbia. The first phase of the project, 2012—2014 explored eleven local governments[1] in the province that were identified as climate innovators. The second phase, begun in 2015, builds on this previous research looking at current development paths in the original case study communities, what has changed, if anything, and what

[1] Used interchangeably with communities, although interviews were confined to local government officials and not the wider community

could be described as transformative change.

The second phase of MC[3] is gathering new evidence about whether or not mitigation and adaptation innovations in the 11 local governments from the first phase resulted in transformative changes toward more sustainable paths at the local level. Part of this research involves developing a coherent theory of development path change, the conditions under which development paths[2] can be transformed, including the drivers and barriers to action, as well as key indicators associated with such a shift. The research team has just concluded a series of interviews with a sub sample of the first set of interviews and preliminary analysis has just been concluded which is concluded in the sections below entitled Lessons Learned.

2.2 Key Governance Factors

Our research from the first phase gave rise to several major findings. *First* among these was the importance of leadership at multiple levels. Provincial leadership and the Charter in particular was crucial in moving local decision makers toward accelerated investments in on-the-ground climate action and innovation. One outcome from the concluding peer-to-peer learning exchange (which brought together all the case study interviewees with the research team) was that a Charter 3.0 should be put in place. Participants argued it should have even stronger targets and timelines to accelerate more local innovation and to create another higher-level playing field (Dale et al. 2014). On the other hand, a group of mayors and ex-mayors convened toward the end of Phase 1 indicated that they thought that provincial leadership had been essential but that many communities would now act on their own initiative. So while local government staff from diverse departments were strongly of the view that the Charter had been critical in convincing political decision makers to support and move on climate change, the need for such leadership in the future was less clear. This became a central question in the phase 2 analysis.

Second, not surprisingly, the most innovative local governments were those with political and staff alignment. In other words, when municipal staff and municipal politicians had the same agenda, much was possible. Conversely, if there was conflict between the two levels, little was accomplished. *Third*, systematic frameworks for policy-making, such as a consistent reporting requirement, fostered interdepartmental collaboration and inter-sectoral cooperation. *Fourth*, the capacity for cross-departmental (horizontal) planning processes was essential to climate action and sustainability. *Fifth,* provincial leadership resulted in a majority of the case study local governments integrating climate change into broader sustainability planning. The institutionalization and embedding of climate innovations into existing policies and programs within a larger sustainability agenda, for example, Official Community Plans and Integrated Community Sustainability Plans was

---

[2] For the purposes of this research, a development path consists of social systems (formal and informal rules, habits, and norms), networks amongst actors, diverse technologies and ecological systems (Burch et al. 2014) [This is not an adequate definition. Any social systems, networks, technologies and ecological systems? We need to say what this constellation does. E.g. "that governs and shapes how individuals and organizations act in a given jurisdiction" (Is this right?)

essential to sustaining momentum between electoral swings and transforming current development paths (Dale et al, forthcoming). *Finally*, all of the case study communities took advantage of new partnerships and strategic alliances as a result of having greater access to networks stimulated by the leadership of the Climate Action Secretariat. The following sections describe our main findings in phase 3, building on the findings from the first phase.

Provincial leadership

Preliminary analysis from the second phase indicates that the majority of the case study communities are still engaged in climate action using a systems-oriented sustainability mandate but tailored to their specific context. All communities still credit the provincial government's 2008 Climate Action Charter (CAC) for either legitimizing or incentivizing climate mitigation efforts occurring within their communities and draw on the funding they receive by fulfilling their CARIP reporting requirements. It is important to note that the provincial regime has changed considerably since our initial interviews and British Columbia is no longer is leading in the same ways that it was during the first phase of our interviews, particularly the leadership from the Climate Action Secretariat. The province has not increased the carbon tax as was originally planned, and its next iteration of the Charter has been criticized as conservative and not accelerating the necessary conditions to build upon earlier innovations (references). As a result, local governments are no longer anticipating or waiting for renewed provincial government leadership in order to act and some see the province as now actually in their way. For example, while many are calling for strong provincial building codes to incentivize municipal reductions in building energy use, others are striving for standards that are more progressive than what the province has proposed and some see the province as a hindrance to achieving their objectives around sustainability and climate change adaptation. This suggests that provincial leadership--essential in the early stages of climate response at the municipal level in BC—is now still desirable but perhaps not required for communities to continue and further develop their climate policies.

Alignment

Political and staff alignment is crucial for continuity and momentum between changes in administration for sustaining and building further local action, even in the most innovative communities. Communities without this alignment have stalled and in some cases lost their initial momentum observed in the first phase of our research. This is a further rationale for the embedding and institutionalizing policies and programs to 'ride out' large swings in political mandates and avoid losing momentum in innovative practices, which may become even more important as many EU countries move to more stringent carbon neutral targets than Canada. Equally key is policy alignment between local government departments and policy congruence between levels of governments.

Embedding sustainability in community governance

The majority of local governments are now strengthening policy alignment between departments, moving beyond embedding of policies and programs in departmental mandates to their institutionalization in existing departmental mandates. This institutionalization means that climate action is part of every department's mandate, and

its executive are accountable and responsible for its achievement, and it is an operational line item in departmental budgets. The larger urban centres have moved away from a separate sustainability department to having the role integrated throughout the organization into each of the line departmental mandates. Key departments for enhancing policies and incentives are the planning, engineering, public works, and development departments. The potential benefits of this 'institutionalization' are increased access to more diverse resources, augmented collaboration on sustainability/climate projects and more broader, integrated horizontal planning. However, it is also possible that such processes will result in a loss of identity and momentum for sustainability initiatives that now have lost institutionally distinct champions and visibility and are buried in departments with quite different priorities. This integration may be most fruitful once a community has made significant progress towards sustainability, such that it has become an uncontroversial part of the identity of the municipality; in the early stages of this process, when this is not the case, an identifiable champion and concentration of sustainability expertise may be very important.

Whatever the outcomes of such institutional changes, the existence of dedicated human resources, including new building energy management positions for both the public and corporate sectors, is contributing to continued climate innovation, and the continual build out of resources.

Financing

In addition to embedding policies and programs into existing mandates, it is important to establish innovative financing solutions to continue funding larger and more difficult innovations. In British Columbia, over 40 local governments now have green revolving funds and even very small communities have established energy revolving funds. Best practices sharing between community innovators and with climate scholars is a major driver of accelerating take-up of climate action. Peer-to-peer learning exchanges, face-to-face between local government staff and researchers have been important in building new networks of collaboration that accelerate the take-up of climate innovations. We have only anecdotal evidence that the virtual meetings we held with elected officials also resulted in one or two local governments beginning to adopt climate change through access to the knowledge-sharing with peers and the research team. A summary chart of the differences between the past and present context of three of the 11 of the case studies is summarized at the end of this section.

Partnerships and Strategic Alliances

Also central in all the local government cases was continuing and enlarging upon strategic partnerships and alliances in the broader community, particularly with the business community; which can be key to increasing access to diverse resources. All local governments had evidence of accessing additional resources outside their community, many of which provided investments in intellectual capital, for example, the BC Hydro energy managers program. This was a key leverage point for smaller communities as it provided a staff person who was responsible for creating and programs but more importantly implementing measuring and monitoring systems. Equally, partnerships with quasi-institutional organizations such as the Fraser Basin Council and

the Columbia Basin Trust also served to accelerate innovations, in addition to nationally, the Federation of Canadian Municipalities (FCM). This level of collaboration, for example, resulted in the adoption and public support for Vancouver's Renewable City Strategy aimed at getting to 100% renewable energy usage by 2050.

Carpe Diem

Those local governments further along the innovation curve still emphasize the importance of how issues are framed, and taking advantage of extreme events in local contexts to capitalize on linking leading-edge science and research outcomes to the climate action imperative. Linking windows of opportunity and bridging traditional oppositional frameworks to keep accelerating momentum and enhancing ambition is a key strategy for continuous local government action. Initially, many framed the issue more narrowly as energy efficiency and then after realizing the benefits of acting in this narrower domain, built on their successes to embrace a wider sustainability agenda.

A summary of the differences between the two research phases for the three largest urban centres (Surrey, Vancouver, Victoria) can be found in Appendix A.

3 Emerging leadership in Ontario: lessons from the MC^3 project

Since the early leadership on climate policy shown in British Columbia, the climate governance context has shifted substantially. There is now a distinct national presence to climate change implementation, starting with the federal government signing the 2016 COP 21 agreement committing the world's nations to limiting increases to 1.5 degrees, and the more recent announcement of a national climate action plan and a national carbon tax. Against this backdrop, Ontario (the most populous province in Canada) has announced a cap and trade system, one of the more ambitious climate action plans in the country, but with financing incentives for further innovation heavily dependent upon revenues from their cap and trade system to finance local government innovation. If successful, however, it may prove to be an innovative strategy for continuous iterative investments in local government innovations independent of which administration is in power, unlike the situation in British Columbia. The province is now starting to work with local governments to accelerate the take-up of climate action and innovation. So, what are the key lessons learned from our research in British Columbia that can be applied to governance in other jurisdictions?

Released in June of 2016, Ontario's Five Year Climate Change Action Plan represents a controversial and ambitious effort to de-link economic growth from fossil fuel consumption, stimulate the uptake of renewable energy technologies, and apply a price to carbon that begins to capture the true costs of carbon-intensive communities and lifestyles. This requires spending between $5.9 to $8.3 billion over the next five years, which would come from the revenues generated by auctioning off carbon emissions

credits as part of the cap-and-trade market that Ontario will join (along with Quebec and California) (Province of Ontario, 2016).

The Ontario Five Year Climate Change Action Plan (2016-2020) is comprised of eight action areas: transportation, buildings and homes, land-use planning, industry and business, collaboration with indigenous communities, research and development, government, and agriculture, forests and lands. Each action area consists of a number of proposed actions, specific targets, and estimated costs. In this it is not dissimilar from provincial and municipal climate change action plans developed across Canada and elsewhere, but a number of dimensions of this plan distinguish it: the central position of a *cap-and-trade system* in order to put a price on carbon, the extremely *short time frame* of the action plan, and the level of *ambition* of both the targets and the proposed actions.

Of the 171 Megatonnes (Mt) of greenhouse gas emissions produced annually in Ontario, the largest portion is related to transportation (35%). Close behind is industry (28%) and buildings (19%). The province has set greenhouse gas reduction targets of 15% below 1990 levels by 2020, 37% by 2030 and 80% by 2050. This action plan takes the province to the first of its goals, and should set the stage for the increasingly transformative medium- and long-term targets (for which specific actions have yet to be assigned). As such it is important to iteratively take stock of the progress that specific actions and policies will make, while keeping in mind the potential for these (and additional) actions to ultimately yield exponentially increasingly greenhouse gas reductions.

The main sources of emissions and the stated reduction targets suggest that efforts to densify communities, improve public transit, shift homes away from a reliance on natural gas, and accelerate a transition toward electric cars (since the vast majority of electricity in Ontario is produced by hydropower) will yield significant results for Ontario.

Many of the action areas and goals, especially those related to land-use planning in communities, however, are tied directly to steps that can only be taken by municipalities. While the Province can require municipalities to embed climate change considerations in their official plans, and send a clear signal that climate change is a priority at the provincial level, municipalities have control over how communities are designed (such as the proximity of work to home and play, which affects commuting distances and viability of active/mass transportation), water and waste management, parks, and economic development (Province of Ontario, 2001). All of these domains have direct implications for reaching provincial greenhouse gas reduction targets, and so provincial policies must reinforce (rather than contradict) municipal climate change actions.

We started our research in 2012 at the local level because local governments are on the front line of delivering climate action on-the-ground. They have direct control of critical sources of emissions (Betsill, 2001; Bulkeley & Betsill, 2005) and are the scale at which the potentially catastrophic impacts of climate change will play out (Wilbanks & Ssthaye, 2007). While BC concentrated its efforts on provincial/municipal coordination, policy and program congruence, and incentivization, the current plan in Ontario seems to rely

on the province simply making it happen, a traditional hierarchical top down approach. Given our research, it won't be successful unless municipalities are deeply engaged in local actions through innovative policies and incentive programs designed to accelerate the take-up and knowledge transfer of successful innovations between local governments.

MC3 research shows what can happen with a multi-level governance approach between two levels of government, and Ontario now has a golden opportunity to capitalize on a complementary federal/provincial landscape to adopt this approach to build on congruence between all three jurisdictions.

There are many lessons that are transferable to both urban and smaller governments across the country that also highlight the efficacy of moving to a multi-level governance system for addressing implementation gaps and fast-tracking climate action locally. The greatest potential for accelerating shifts in current development paths occur when the three levels of government are working congruently with one another, coupled with internal alignment within and across each level of government. Perhaps even more important is alignment between political and official staff as demonstrated by the leading-edge climate innovators in British Columbia.

In addition to policy congruence and policy alignment, another central lesson for the Ontario government if it wishes to become a climate innovator is the importance of provincial leadership, but with policies and programs designed to accelerate local climate action. Another central lesson is the embedding and institutionalization of policies and programs into existing departments that sustain the momentum under one administration if replaced by another less favourable government.

A complementary suite of policy instruments and incentives should accompany the legislative framework. Although the province limited its Climate Action Charter to the public sector, based on its effectiveness[3] in accelerating local government action in British Columbia, we recommend that Ontario implement a Climate Action Charter that commits all public-sector organizations, including crown corporations, to carbon neutrality with mandatory targets and timelines, that also includes the industrial sector. Accompany these policy instruments with incentives that build on the BC experience, such as the CARIP program.

Equally critical is getting the house in order, by mandating stronger energy performance requirements in national and provincial building codes. Accelerating the adoption of district energy systems across the country in partnership with Quality Urban Energy Systems of Tomorrow (QUEST) and the Community Energy Association is an important first step. Identifying and costing wherever possible the co-benefits of climate change adaptation and mitigation, sustainable development, the green economy and green jobs—including health outcomes, infrastructure, operational savings and household

[3] Our historical dataset of local government GHG emissions for the years 2010 and 2015 reveals that corporate emissions have decreased in all but three of the case study communities, and some significantly. For further details, go to [insert website address here]

energy savings will also lead to greater acceleration and take-up at all levels.

Finally, the province can play a key leadership role in brokering strategic alliances and partnerships that have been so central for local governments to move ahead in climate actions, ensuring no one community is left behind. Addressing asymmetries of scale and resources, in many cases to intellectual capital, through innovative incentives such as BC's energy manager program, has proven to be a key factor in climate action locally. Its leadership is also essential for the transition to more sustainable development paths that simultaneously restrains energy demand (despite population growth), drives the production of low-carbon energy sources and designs complete and compact neighbourhoods and communities that create alternative forms of transport and encourage multi-use development, such as BC's

Most critically, it should build on the successful models of innovative partnerships and community engagement in British Columbia for sharing responsibility for climate action across different levels of governance (Dale et al. 2015; Dale et al, 2013). Such partnerships are necessary because effective climate take-up rests on the integration of the divergent and contested knowledge and capacities of civil society, technical experts, Indigenous communities, the private sector and decision-makers.

4. Conclusion

Our findings suggest framing the issue more broadly into a more holistic sustainability lens is necessary for achieving a low carbon economy. Furthermore, without explicitly considering transformative, long-term targets (and the deep value shifts that these employ), Ontario's plan is unlikely to yield greenhouse gas reductions of the scale that scientists argue will be necessary to avoid dangerous anthropogenic climate change. Ultimately, it is early days for Ontario's climate change planning – cap and trade has only recently come into effect, and none of the vehicle electrification or residential renewables incentives have had time to bear fruit. If policy learning is to occur, there must be a conscious effort by policy-makers to draw on the experience of different jurisdictions to ascertain the most effective policies for achieving a particular objective (Peter, 1992).

Acknowledgements

MC^3 is a tri-university collaboration between Royal Roads University, the University of British Columbia and Simon Fraser University. In addition to the authors of this paper, the research team includes Stephen Sheppard, Leslie King, Meg Holden, Mark Roseland and doctoral students, Rob Newell, University of Victoria and Alastair Moore, Manchester University.

We gratefully acknowledge funding from the SSHRC Insight Program which has allowed to continue our research.

References

Adger, W.N., Arnell, N., Tompkins, E. (2005) Successful adaptation to climate change across scales Global Environment Change Part A 15, 77-86.
Avelino, F., Rotmans, J. (2011) A dynamic conceptualization of power for sustainability research. Journal of Cleaner Production 19, 796-804.
British Columbia Government Website. (2017). Accessed March 5th)
Bulkeley, H., Betsill, M. (2005) Rethinking sustainable cities: Multi-level governance and the 'urban' politics of climate change. Environmental Politics 14, 42-63.
Bulkeley, H., Betsill, M.M. (2003) Cities and Climate Change: Urban Sustainability and Global Environmental Governance. Routledge, London.
Bulkeley, H., Breitfuss, M., Coenen, L., Frantzeskaki, N., Fuenfschilling, L., Grillitsch, M., Hartmann, C., Kronsell, A., van Steenbergen, F., Voytenko, Y., (2015) Theoretical Framework Working Paper on Urban Living Labs and Urban Sustainability Transitions. Lund University, Lund.
Bulkeley, H., Castan Broto, V. (2013) Government by experiment? Global cities and the governing of climate change. Transactions of the Institute of British Geographers 38, 361-375.
Burch, S. (2010) In pursuit of resilient, low-carbon communities: An examination of barriers to action in three Canadian cities. Energy Policy 38, 7575-7585.
Burch, S., (2016) Will Ontario's Climate Change Action Plan Transform Communities?. Centre for International Governance Innovation, Waterloo, ON.
Burch, S., Shaw, A., Dale, A., Robinson, J. (2014) Triggering transformative change: A development path approach to climate change response in communities. Climate Policy 14, 467-487.
Dale, A., J. Robinson, Y. Herbert and A. Shaw. (2015). *Meeting the Climate Change Challenge (MC³). Submission to the BC Government*. http://www.mc-3.ca.
Dale, A., A. Shaw and R. Newell. (2013). *MC³ Final Progress Report: Submitted to the Pacific Institute for Climate Solutions*.
Dale, A., (2008) Governance for sustainable development: As if it mattered?, in: Toner, G., Meadowcroft, J. (Eds.), Innovation, Science and Environment 2009-2010. Special Edition - Charting Sustainable Development in Canada 1987-2007. McGill-Queen's University Press, Montreal, pp. 54-71.
Hooghe, L., Marks, G. (2003) Unraveling the Central State, but how? Types of multilevel governance. The American Political Science Review 97, 233-243.
Ibrahim, N., Sugar, L., Hoornweg, D. (2012) Greenhouse gas emissions from cities: comparison of international inventory frameworks. Local Environment 17, 223-241.
Peter J M. (1992). Policy Learning and Failure. *Journal of Public Policy*, **12**(4), 331.

Province of Ontario, (2001) Municipal Act, 2001, S.O. 2001, in: Province of Ontario (Ed.).
Province of Ontario, (2016) Ontario's Climate Change Action Plan 2016-2020. Government of Ontario, Toronto.
Shaw, A., Burch, S., Kristensen, F., Robinson, J., Dale, A. (2014) Accelerating the sustainability transition: Exploring synergies between adaptation and mitigation in British Columbian communities. Global Environmental Change 25, 41-51.
Westley, F., Olsson, P., Folke, C., Homer-Dixon, T., Vredenburg, H., Loorbach, D., Thompson, J., Nilsson, M., Lambin, E., Sendzimir, J., Banerjee, B., Galaz, V., van der Leeuw, S. (2011) Tipping toward sustainability: emerging pathways of transformation. Ambio 40, 762-780.

Community	Approach	Initial Driver of Climate Response	First MC3 Phase (2011-2012)	Second MC3 Phase (2015-2017)	Governance/O Char
Surrey	Sustainability focus	District energy aligned priorities of Surrey (increased tax base via density) and B.C. Hydro (reduce energy consumption) aligned, Community Energy Manager role (partially funded by B.C. Hydro) was crucial Climate Action Charter motivator to develop more integrated, forward-looking approach to sustainability. Competition between municipalities to be innovative.	Climate change framed as co-benefit in order to create mandate acceptable to business community, residents, and political leadership; mitigation and adaptation were originally integrated, however mitigation has been discarded and the focus is on an ICLEI adaptation pilot.	Finalised climate action strategy and updated the sustainability charter, once again combining mitigation and adaptation into planning.Working to adapt to sea level rise through coastal flood protection strategy. Expanding district energy policy with the construction of a biofuel facility. Completing biodiversity and conservation strategy.	Stable governan environment an since the first phase.Incorpora sustainability ac organization by the sustainabilit into other functi departments, sta planning and de group, and then new department years (with the staying longer i
Vancouver	Sustainability focus	CO2 emissions reductions from policy perspective began with 1990 Clouds of Change report. Creation of Sustainability Support Group in 2002.	Extensive mitigation underway: e.g. new buildings to be LEED Gold standard. Vancouver first city to implement adaptation strategy, focused on storm water management, urban forest planning, and projections of sea level rise. Dedicated mitigation and adaptation staff in Sustainability Office. Long-term investment in climate change since 1990.	Through the city's work over the years staff have gained a better understanding of what is working and what is not as part of the Greener City Action Plan. Started Renewable City Strategy, which has put even more focus on energy and greenhouse gas emissions. Looking at not just climate change adaptation and mitigation but moving toward exploring what is resilience. Focusing on current and future building stocks and creating advanced energy efficiency targets for building codes.	Stable governan environment an since the first pl Sustainability h all of the city's and is now part department call Urban Design a Sustainability. The city has col businesses and organizations o initiatives gener confidence thro

					organization an success has brec
Victoria	Sustainability focus	An overall 2008 sustainability framework and the initiation of the 2009 Sustainability Department. Came to climate change late but put resources to it and took it beyond the expectations of the Climate Action Charter (CAC) (including community emissions and adaptation planning).	Integrated corporate (Carbon Neutral Plan) and community emissions planning (Climate, Energy and Resiliency). Adaptation planning at the community scale. Climate change response integrated throughout Official Community Plan in land-use, transportation, infrastructure and food security. Storm water utility builds business case for permeable surfaces, minimizing future infrastructure expenditures and emissions.	Reworking Climate Action Plan to better address energy, waste management, transportation, infrastructure and building energy requirements. Performing heat Island sea level rise mapping to understand where to taking action to mitigate and adapt to climate change. Exploring the elimination or reduction of waste streams as well as supporting the construction of sewage waste and waste water treatment facility within the district.	Stable governan environment an since the first pl Exploring the id more support in sustainable com planning depart really are the ke development po