

PLANNING FOR RESILIENCY

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I. INTRODUCTION

Since at least the 1990s, and coinciding with the release of the Brundtland Report and the adoption of the United Nations Framework Convention on Climate Change, ‘sustainable development’ and ‘climate change’ have been recurring and constant themes, if not buzzwords, in urban planning circles. These concepts were largely focused on reducing the ecological footprints of our communities and to reduce the emission of greenhouse gases (“GHGs”) in an effort to prevent, or at least slow down, the effects of climate change. Today, while there may still be disagreement as to the cause of climate change, there can be little disagreement that climate change is happening.

In BC, the anticipated effects of climate change include increased precipitation and increased occurrence of extreme precipitation events, increased average temperatures and sea level rise.¹ The impacts of these changes can already be seen across the province:

- Flash flooding as a result of extreme rainfall events²;
- Increased spring flooding due to increased temperatures and increased precipitation³;
- Increased occurrence and size of wildfires⁴;
- Increased range of the mountain pine beetle resulting in loss of approximately 50% of commercial lodgepole pine in the province⁵; and
- The increasing threat of sea level rise⁶.

¹ British Columbia Ministry of Environment, *Indicators of Climate Change for British Columbia 2016 Update*, (June 2016), online: <www2.gov.bc.ca>.

² “Heavy rain, foot-deep waters flood metro Vancouver roads”, *CBC News* (29 October 2018), online: www.theweathernetwork.com;

³ Amy Judd, “BC flooding 2018: Photos, videos of floods in communities around the province”, *Global News* (11 May 2018), online: <https://globalnews.ca>.

⁴ Melanie Green, “BC promises disaster plan in wake of another record-breaking wildfire season”, *Toronto Star Vancouver* (31 October 2018), online: <www.thestar.com>.

⁵ Natural Resources Canada, “Mountain pine beetle”, online: www.nrcan.gc.ca.

⁶ The Canadian Press, “Sea level maps show coastal communities like Vancouver in race against time”, *The Vancouver Sun* (8 November 2017), online: <https://vancouversun.com>.

As the focus on climate change moves from preventing it to adapting to life with it, ‘resiliency’ has emerged as an increasingly important concept in urban planning.

‘Resiliency’ is defined as the “power of recovery; resistance to adversity.”⁷ Planning for resilience in our communities does not only mean planning to withstand events that result from climate change. Planning for resilience means working to understand the potential shocks and stresses our communities will face as a result of climate change-related events and planning to ensure that our communities can continue to function, operate and thrive despite them.

II. WHAT DOES A RESILIENT CITY LOOK LIKE?

Much of the theoretical or academic work that has been done with respect to resilient cities to date focuses on establishing a framework, or other metric, for assessing resiliency. The seven qualities of a resilient city that are frequently cited are:

- **Reflective** – decision-making structures have mechanisms to continuously evolve based on past experiences or emerging evidence;
- **Robust** – over-reliance on a single asset, and other design or assessment thresholds, that could lead to a catastrophic collapse are actively avoided in favour of robust systems that can withstand hazard events without significant damage or loss of function;
- **Redundant** – redundancies (i.e. “spare capacity purposely created within systems”) should be encouraged to accommodate disruption;
- **Flexible** – giving systems the ability to adapt and evolve in response to changing circumstances, potentially by introducing new knowledge and technologies or by introducing decentralized and modular approaches;
- **Resourceful** – providing the tools and capacities to rapidly identify and implement different ways of meeting needs or providing services during a disruption;
- **Inclusive** – the recognition that a disruption or catastrophic event is likely to have different impacts on different sectors, geographies or groups of individuals; and

⁷ *The New Shorter Oxford English Dictionary*, 1993, *sub verbo* “resiliency”.

- **Integrated** – aligning various systems to promote consistency in decision-making and facilitating communication between systems to allow them to function collaboratively and to respond rapidly to changing circumstances.⁸

While these seven qualities may not translate directly into a guideline on how to attain resiliency, they do identify characteristics that may be useful in informing strategies on attaining resiliency:

- Should involve multiple stakeholders to identify opportunities for resilience but also to prepare for disruption response;
- Local governments should be in a position to use multiple methods to provide a service or to achieve an outcome in the event one system fails; and
- Local governments, and citizens, should have the resources and capacity to make adjustments to systems or functions in the face of disruption.

The federally-appointed Working Group on Adaptation and Climate Resilience, took a Pan-Canadian approach to identifying options for addressing resiliency in Canada. The mandate of the Working Group, as discussed in their 2016 final report, was to identify options for improving climate resiliency across Canada. Based on their work, the Working Group identified the following six areas of focus which they considered to be necessary to address climate resilience:

- Supporting decision-making with knowledge and information;
- Building capacity to translate knowledge into action;
- Building resilience through infrastructure;
- Promoting healthy ecosystems and healthy people;
- Supporting particularly vulnerable regions; and
- Reducing climate-related hazards and disaster risks.⁹

Again, while these areas of focus do not immediately translate into guidelines for how to address resiliency at the local government level, they do provide a framework for the considerations that must be considered when planning for resiliency.

⁸ Arup International Development, *City Resilience Framework*, (London: The Rockefeller Foundation, December 2015) at 5. See also S. McCullough, *Building a Climate-Resilient City: Economics and finance* (Prairie Climate Centre, 2017) at 3.

⁹ Working Group on Adaptation and Climate Resilience, *Final Report*, online: www.canada.ca at 12.

III. WHAT ARE CITIES DOING TO MOVE TOWARDS RESILIENCE?

In Canada, four cities (Montreal, Toronto, Calgary, and Vancouver) have appointed Chief Resilience Officers (“CROs”) in order to develop citywide resilience strategies. These cities were able to appoint (and fund) CROs due to their involvement in 100 Resilient Cities (also known as “100RC”), which is a global initiative designed to help cities become more resilient. These four cities were selected to participate in 100RC after submitting applications and being selected based on criteria which included an innovative mayor, a recent catalyst for change, a history of building partnerships and an ability to work with a wide range of stakeholders. The appointment of a CRO was a requirement of participation in the 100RC initiative.

Speaking broadly, a CRO’s mandate is to:

- Work across local government departments to improve internal communication, to identify and address internal complexities and to promote collaboration between departments;
- Work with a wide array of stakeholders, including representatives from the private sector and civil society, to learn about challenges facing the community and to build support for resilience initiatives;
- Develop a Resilience Strategy; and
- Act as the “resilience point person” and to apply a ‘resilience lens’ to all projects.¹⁰

Of the four Canadian 100RC cities, the City of Montreal is the only city which has adopted a resilience strategy. Montreal’s Resilient City Strategy was adopted in June 2018.

Montreal’s Resilient City Strategy outlines a total of 30 actions aimed at addressing four ‘orientations’ for action:

- Take action to support a united and safe community;
- Take action to protect our living environment;
- Take action to maintain a diversified and innovative economy; and
- Take action to promote integrated governance in the service of the community.

¹⁰ Michael Berkowitz, “What a Chief Resilience Officer Does” (18 March 2015), online: 100 Resilient Cities www.100resilientcities.org.

A key element of the actions which are outlined in Montreal’s strategy, is that they all identify ‘Principal Partners’ who will need to be engaged and involved in order to complete the action. These principal partners include local government departments as well as other levels of government, civil society organization, post-secondary institutions and not-for-profit organizations.

The remaining Canadian 100RC cities have all completed a Preliminary Resilience Assessment (“PRA”) and are moving forward with the preparation of their resilience strategies. The purpose of the PRA is to engage stakeholders to identify the shocks and stresses that the community is likely to face, and to use this information to inform the development of four areas of focus for the resilient city strategy. In the context of resiliency planning, ‘stresses’ are defined as chronic issues that “weaken the fabric of a city on a daily or cyclical bases”, while ‘shocks’ are defined as “sudden, sharp events that threaten a city.”¹¹

All three cities intend to have their resilience strategies before City Council for approval in 2019.

While it may not be possible for all BC communities to create a CRO position or to undertake the development of an entire resilient city strategy, the outcomes of and the processes undertaken by the Canadian 100RC cities may be useful in helping communities to incorporate resiliency planning into their existing procedures and policies.

IV. HOW CAN RESILIENCE PLANNING BE IMPLEMENTED IN BC?

Although many BC communities may not currently have the resources to develop and implement a complete resilience strategy, there are opportunities to integrate resiliency considerations into the current planning and local legislative framework in BC.

A. Official Community Plan Development and Amendments

Resiliency considerations, including the broad public consultation required to identify relevant shocks and stresses, could be incorporated into the development or amendment of official community plans (“OCP”). Under s. 473(1) of the *Local Government Act*, OCPs must include statements respecting multiple items that are likely relevant to resiliency planning, including:

- The approximate location, amount, type and density of residential development required to meet anticipated housing needs over a period of at least 5 years;
- The approximate location, amount and type of present and proposed commercial, industrial institutional, agricultural, recreational and public utility land uses;

¹¹ City of Vancouver, *Preliminary Resilience Assessment*, online: <<https://vancouver.ca>> at 7.

- Restrictions on the use of land that is subject to hazardous conditions or that is environmentally sensitive to development;
- The approximate location and phasing of any major road, sewer and water systems; and
- The approximate location and type of present and proposed public facilities, including schools, parks and waste treatment and disposal sites.¹²

The extensive public consultation required to amend, or develop an OCP, would also provide a community with the opportunity to engage multiple stakeholders and to incorporate some elements of PRA procedure to aid in the identification of shocks and stresses.

B. Regional Growth Strategies

The adoption of regional growth strategies, and the related public consultation, may provide an effective avenue for incorporating resilience considerations into local planning frameworks. Section 429 of the *Local Government Act* requires that regional growth strategies must include a number of elements, including the following:

- A comprehensive statement on the future of the region, including the social, economic and environmental objectives of the regional district; and
- To the extent that they are concerns of the regional district, proposed actions to meet the needs of the project population with regards to housing, transportation, regional district services, parks and natural areas and economic development.

Where a regional growth strategy is binding on a local government, either because it is accepted or otherwise made binding under the legislation, the OCP of that municipality must be made to be consistent with the regional growth strategy.

C. Designation of Development Permit Areas

In accordance with the development or amendment of an OCP, and under s. 488 of the *Local Government Act*, a municipality could establish development permit areas for multiples purposes that may be relevant to resiliency considerations:

- Protection of the natural environment, its ecosystems and biological diversity;
- Protection of development from hazardous conditions;

¹² *Local Government Act*, R.S.B.C. 2015, c.1.

- Protection of farming;
- Establishment of objectives to promote energy conservation; and
- Establishment of objectives to promote water conservation;

D. Adoption of Bylaws and Policies

Under the *Community Charter* a municipality may enact bylaws, and subsequently policies to implement those bylaws, to regulate, prohibit, and impose requirements in relation to a number of enumerated areas. Once a local government has identified shocks and stresses that may be relevant to their community, there may be the potential to enact bylaws and/or policies that will make the community more resilient to those events.

E. Emergency Response under the Emergency Program Act

Under the *Emergency Program Act*, local governments are required to prepare “local emergency plans respecting preparation for, response to and recovery from emergencies and disasters.”¹³

The act defines ‘disaster’ as a calamity that is either “caused by accident, fire, explosion or technical failure of by the forces of nature” or that “has resulted in serious harm to the health, safety or welfare of people, or in widespread damage to property”¹⁴. While ‘emergency’ is defined as a “present or imminent event or circumstance” which “is caused by accident, fire, explosion, technical failure or the forces of nature” and which “requires prompt coordination of action or special regulation of person or property to protect the health, safety or welfare of a person to limit damage to property”¹⁵.

The requirements of the *Emergency Program Act* may give local governments an avenue to prepare response plans in accordance with resiliency principles.

V. WHAT RISKS DO LOCAL GOVERNMENTS FACE IF THEY FAIL TO PLAN FOR RESILIENCY?

From the perspective of legal liability, the liability of local governments for failing to proactively plan for resiliency is likely limited to claims of negligence that may arise following the occurrence of a shock. At a basic level, claims of this nature would most likely allege that a local government was (or should have been) aware of a risk and failed to act which resulted in damage being incurred.

¹³ *Emergency Program Act*, R.S.BC 1996, c. 111 at s. 6(2) [*Emergency Program Act*].

¹⁴ *Emergency Program Act* at s. 1(1) “disaster”.

¹⁵ *Emergency Program Act* at s. 1(1) “emergency”.

Local governments may also be liable for damages arising from nuisance where damages arise due to the failure of services including sewer systems, water or drainage systems, dikes, or roads. While an immunity in relation to these services is provided under the *Local Government Act*, it is limited to situations where the damage is due to a breakdown or malfunction of those systems.¹⁶ British Columbia courts have interpreted this provision of the *Local Government Act* (or its precursor provisions) as not providing immunity from liability where damage has occurred because a system had insufficient capacity to handle the conditions.¹⁷

Aside from legal liability which may arise if local governments fail to take action to plan for resiliency, local governments may also be subject to more tangible losses. As the frequency and severity of climate change-related events continues to increase, communities which are not resilient in the face of these events may become less attractive to prospective residents, or as locations for economic investment. Similarly, if communities are not resilient, or responsive, to recurring stresses that affect the community they may also become less attractive.

VI. CONCLUSION

While it is unlikely that all, or even most, BC local governments will have the resources to fund the creation of a CRO office and/or the development of a comprehensive resilience strategy, they may be able to look to the Canadian 100RC cities for guidance on how to incorporate resilience considerations into their existing processes and planning tools. As British Columbia's communities continue to grow, and as shocks and stresses become more disruptive to daily life, the ability for communities to respond to and recover from these events will become increasingly important to the livability of communities.

¹⁶ *Local Government Act*, R.S.BC 2015, c. 1 at s. 744.

¹⁷ See *British Columbia v. Vancouver (City)*, 2005 BCSC 747.

NOTES