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THE CONSTITUTIONAL IMPLICATIONS OF THE *HUDSON* DECISION: LESSONS FOR ADAPTING TO THE HEALTH EFFECTS OF CLIMATE CHANGE IN CANADA

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INTRODUCTION

Climate change policy is divided into two main types of action, mitigation and adaptation. Mitigation refers mainly to interventions aimed at reducing greenhouse gas emissions at the source.¹ Adaptation refers to “adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.”² Historically, adaptation has been viewed as the poor cousin of climate change mitigation,³ but it is now seen as a crucial component of climate change policy.⁴

Climate change has been identified as one of the biggest health threats of the 21st century,⁵ and should be a key priority for the global health community.⁶ Canada will likely experience climatic impacts with severe consequences for public health.⁷ Canadians’

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1 Klein et al, “Inter-Relationships Between Adaptation and Mitigation” in ML Parry et al, eds, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2007) 745 at 750.

2 *Ibid.*

3 Roger Pielke, Jr, et al, “Climate Change 2007: Lifting the Taboo on Adaptation” (2007) 445 *Nature* 597.

4 *Ibid.*; Barry Smit et al, “An Anatomy of Adaptation to Climate Change and Variability” (2000) 45:1 *Climatic Change* 223.

5 Anthony Costello et al, “Managing the Health Effects of Climate Change” (2009) 373:9676 *Lancet* 1693 [Costello et al 2009]; Costello et al, “Global Health and Climate Change: Moving from Denial and Catastrophic Fatalism to Positive Action” (2011) 369:1942 *Philosophical Transactions of the Royal Society A - Mathematical Physical and Engineering Sciences* 1866.

6 Margaret Chan, World Health Organization, Media Statement, “The Impact of Climate Change on Human Health” (7 April 2008), online: WHO < <http://www.who.int/mediacentre/news/statements/2008/s05/en/index.html> >.

7 Canada, Natural Resources Canada, *From Impacts to Adaptation: Canada in a Changing Climate 2007* (Ottawa: Government of Canada, 2008) [*From Impacts to Adaptation*]; Canada, Health Canada, *Human Health in a Changing Climate: A Canadian Assessment of Vulnerabilities and Adaptive Capacity* (Ottawa: Health Canada, 2008) [*Human Health*].

vulnerability has been highlighted recently, through events including the 1998 Ice Storm and 2000 Walkerton water crisis.⁸ Emergencies such as these are expected to increase, and adaptation actions will be necessary to prevent, reduce, and manage climate change-related risks.⁹

In this paper, I will address the question: to what extent are Canadian municipalities constitutionally able to adopt adaptations to the impacts of climate change on health? For example, to what extent will municipalities be able to implement emergency management programs, or protect local water sources from contamination? I will argue that municipalities have potentially wide latitude for local environmental regulation, including health adaptation.¹⁰ While municipal authority in this domain is not unlimited, courts and provincial legislatures are increasingly adopting a deferential approach to municipal authority, as exemplified by the landmark decision *114957 Canada Ltée (Spray-Tech, Société d'arrosage) v Hudson (City of)* (“*Hudson*”).¹¹ Drawing on *Hudson*, I will argue that, depending on the initiative, municipal adaptations may be: (i) implemented under authority of existing enumerated powers, although supported by omnibus provisions; (ii) supported by the principle of subsidiarity; (iii) supported by the precautionary principle; and (iv) permitted to complement federal or provincial regulations related to the same matter.

This paper takes a novel approach to examining climate change adaptation in Canada. Climate change law literature is dominated by mitigation.¹² Division of powers analyses exist regarding climate change mitigation efforts generally and in other jurisdictions,¹³ and to a limited extent, in Canada specifically.¹⁴ These analyses examine how different levels of government could construct carbon taxes or other tools *intra vires* their powers. Little has been written about division of powers and climate change adaptation in Canada and this gap must be filled, because unclear division of responsibilities and lack of

8 *From Impacts to Adaptation*, *supra* note 7.

9 Kristie L Ebi & Ian Burton, “Identifying Practical Adaptation Options: An Approach to Address Climate Change-Related Health Risks” (2008) 11:4 *Environmental Science & Policy* 359.

10 Note that “health adaptation” refers to an adaptation to the health effects of climate change.

11 *114957 Canada Ltée (Spray-Tech, Société d'arrosage) v Hudson (City of)*, 2001 SCC 40, [2001] 2 SCR 241 [*Hudson*].

12 Robert L Glicksman, “Climate Change Adaptation: A Collective Action Perspective on Federalism Considerations” (2010) 40:4 *Envtl L* 1159 (“Although an extensive literature concerning the federalism implications of climate change mitigation policy has developed, less has been written about the federalism issues arising from climate change adaptation policy” at 1159); W Neil Adger, Nigel W Arnell & Emma L Tompkins, “Successful Adaptation to Climate Change Across Scales” (2005) 15:2 *Global Environmental Change* 77 (The “dynamic nature of linkages between levels of governance” regarding adaptation is poorly understood and not well-studied – at 80).

13 See e.g. Robert K Huffman & Jonathan M Weisgall, “Climate Change and the States: Constitutional Issues Arising from State Climate Protection Leadership” (2007-2008) 8:2 *Sustainable Development Law and Policy* 6; Alice Kaswan, “A Cooperative Federalism Proposal for Climate Change Legislation: The Value of State Autonomy in a Federal System” (2007-2008) 85:4 *Denv UL Rev* 791; Thomas D Peterson, Robert B McKinstry, Jr & John C Dernbach, “Developing a Comprehensive Approach to Climate Change Policy in the United States that Fully Integrates Levels of Government and Economic Sectors” (2008) 26 *Va Env'tl LJ* 227; Carol M Rose, “Federalism and Climate Change: The Role of the States in a Future Federal Regime – An Introduction” (2008) 50:3 *Ariz L Rev* 673.

14 See e.g. Nathalie J Chalifour, “Making Federalism Work for Climate Change: Canada’s Division of Powers over Carbon Taxes” (2008) 22:2 *NJCL* 119; Shi-Ling Hsu & Robin Elliot, “Regulating Greenhouse Gases in Canada: Constitutional and Policy Dimensions” (2009) 54:3 *McGill LJ* 463.

coordination between actors can represent serious barriers to adaptation.¹⁵ Furthermore, this paper takes an innovative approach to analysing *Hudson* by connecting the local pesticide issue in *Hudson* to climate change adaptation.

Climate change adaptation has the potential to evoke complex division of powers issues in Canada. As a federalist state, Canada faces “special challenges” in developing effective environmental regulations,¹⁶ since environmental issues do not fit neatly into constitutional categories.¹⁷ These challenges will likely surface for climate change adaptation because adaptation processes, by their nature, occur across various interacting scales.¹⁸ On one hand, adaptation is often characterized as a local matter; climate impacts tend to be felt and dealt with relatively locally and top-down, ‘one size fits all’ solutions do not apply to all localities.¹⁹ Canada is currently experiencing, and is expected to experience, various local climate impacts given the country’s diverse landscapes and vulnerabilities.²⁰ On the other hand, local adaptation occurs in the context of larger processes.²¹ Regional and national adaptation programs and strategies guide adaptation research, planning, and resources, with implications for local adaptation. Larger-scale processes may also be necessary to combat collective action problems.²² Adaptation taken by one local actor may have “adverse spillover effects” in other jurisdictions, potentially undermining the overall effectiveness. Adaptation may require policy coordination across multiple jurisdictions to avoid this leakage problem.²³ For these reasons, adaptation involves complex interactions between different levels of government that may lead to constitutional disputes. These issues must be resolved for adaptation measures to be successful.

Municipalities are a relevant level of government to study for two key reasons. First, as mentioned, municipal adaptation is crucial because climate change impacts tend to be felt and addressed locally. Urban municipalities face unique vulnerabilities to climate change. Eighty percent of Canada’s population lives in municipalities.²⁴ Although urban

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- 15 Emma Tompkins et al, “Observed Adaptation to Climate Change: UK Evidence of Transition to a Well-Adapting Society” (2010) 20:4 *Global Environmental Change* 627 at 628; James D Ford & Lea Berrang-Ford, “Introduction” in James D Ford & Lea Berrang-Ford, eds, *Climate Change Adaptation in Developed Nations: From Theory to Practice* (Dordrecht: Springer, 2011) 3 at 9.
- 16 “Preface” in Kenneth M Holland, FL Morton & Brian Galligan, eds, *Federalism and the Environment: Environmental Policymaking in Australia, Canada, and the United States* (Westport, CT: Greenwood Press, 1996) vii at vii.
- 17 John Swaigen, “The Hudson Case: Municipal Powers to Regulate Pesticides Confirmed by Quebec Courts” (2000) 34 *Canadian Environmental Law Reports* 162 at 182; Chalifour, *supra* note 14 at 173; FL Morton, “The Constitutional Division of Powers with Respect to the Environment in Canada” in Kenneth M Holland, FL Morton & Brian Galligan, eds, *Federalism and the Environment: Environmental Policymaking in Australia, Canada, and the United States* (Westport, Conn: Greenwood Press, 1996) 37 at 37.
- 18 Adger et al, *supra* note 12.
- 19 Thomas J Wilbanks, “Scale and Sustainability” (2007) 7:4 *Climate Policy* 278 at 284; Jan McDonald, “Mapping the Legal Landscape of Climate Change Adaptation” in Tim Bonyhady, Andrew Macintosh & Jan McDonald, eds, *Adaptation to Climate Change* (Annandale, NSW: Federation Press, 2010) 1 at 23-25; Glicksman, *supra* note 12 at 1164.
- 20 *From Impacts to Adaptation*, *supra* note 7; *Human Health*, *supra* note 7.
- 21 Adger et al, *supra* note 12 at 79; Wilbanks, *supra* note 19 at 284.
- 22 Collective action problems may arise in the federalism context when individual states have incentives to act in a way that deviates from the interests of the nation as a whole (Glicksman, *supra* note 12 at 1175).
- 23 Glicksman, *supra* note 12 at 1165.
- 24 Statistics Canada, “Population, urban and rural, by province and territory” (last modified 22 September 2009), online: Statistics Canada < <http://www.statcan.gc.ca/tables-tableaux/sum-som/I01/cst01/demo62a-eng.htm> > [Statistics Canada]; Eugene Meehan, Robert Chiarelli & Marie-France Major, “The Constitutional Legal Status of Municipalities 1849-2004: Success Is a Journey, but Also a Destination” (2007) 22:1 *NJCL* 1 (growing urban population at 6).

centres have high adaptive capacity in some respects,²⁵ they rely heavily on critical energy, transportation, and water infrastructure and suffer greater heat stress and poorer air quality.²⁶ Second, municipalities represent a dynamic level of government from a constitutional perspective. The constitutional status of municipalities as mere “creatures” of the provinces has been questioned recently, particularly following *Hudson*.²⁷ Municipal responsibilities have grown to include broad and diverse matters. Most municipalities have environment-related responsibilities, including water and waste systems, zoning,²⁸ and hydroelectric plants.²⁹ Municipalities have also been subject to federal and provincial downloading of services, which has further increased their responsibilities.³⁰ Have municipalities become a de facto third level of government in Canada with the power to regulate environmental issues?³¹

Hudson provides a prism through which to view health adaptation because it demonstrates municipalities’ potential power to regulate issues at the nexus of environmental health and constitutional law. In this case, the Town of Hudson, Quebec (“Hudson”), adopted By-law 270 (“the By-law”) in 1991. The By-law responded to residents’ concerns by restricting the use of cosmetic pesticides in Hudson. In 1992, two landscaping and lawncare companies, Spraytech and Chemlawn, were charged with violating the By-law. Spraytech and Chemlawn asserted that the By-law was *ultra vires* Hudson’s authority and inoperative due to a conflict with provincial and federal regulation.³² The By-law was found to be valid and operable at the Superior Court and the Court of Appeal, and this finding was upheld at the Supreme Court of Canada (SCC). Although the By-law was not framed as addressing adaptation to climate change per se, it could easily be construed as such: climate change will likely lead to increased heavy precipitation events,³³ and this precipitation could increase pesticide runoff into water bodies,³⁴ with negative effects on human health.³⁵ *Hudson* may also have wider implications for other adaptations. The By-law relied on a general welfare (“omnibus”) provision in the *Cities and Towns Act*: “the council may make by-laws: to secure peace, order, good government, health and general welfare in the territory of the municipality [...]”³⁶ Presumably, omnibus provisions such

25 Urban centers tend to have higher levels of wealth, education and skill sets, and access to technology and institutions (*From Impacts to Adaptation*, *supra* note 7 at 14).

26 These vulnerabilities are particularly dangerous for poor and elderly populations, which tend to cluster in urban areas (*ibid*).

27 Meehan et al, *supra* note 24 at 43-44.

28 For an excellent summary of municipal powers and land use, see Howard M Epstein, “Subsidiarity at Work — The Legal Context for Sustainability Initiatives at the Local Government Level: How an Environmental Agenda Could be Advanced by Canadian Municipalities” (2010) 63 *Municipal and Planning Law Reports* 56 [Epstein 2010].

29 Donald Lidstone, “A Comparison of New and Proposed Municipal Acts of the Provinces: Revenues, Financial Powers and Resources” (Paper prepared for the 2001 Annual Conference of the Federation of Canadian Municipalities, Banff, Alberta, 27 May 2001) [unpublished] at 1.

30 Meehan et al, *supra* note 24 at 8.

31 Meehan et al, *supra* note 24.

32 *Hudson*, *supra* note 11 at paras 6-7.

33 *From Impacts to Adaptation*, *supra* note 7 at 10.

34 Pamela D Noyes et al, “The Toxicology of Climate Change: Environmental Contaminants in a Warming World” (2009) 35:6 *Environment International* 971.

35 KL Bassil et al, “Cancer Health Effects of Pesticides” (2007) 53:10 *Canadian Family Physician* 1705.

36 *RSQ c C-19*, s 410(1).

as this could be used for other environmental health issues relevant to climate change adaptation.³⁷

This paper is subsequently divided into Parts I through III. Part I will present a brief overview of projected impacts of climate change on Canadians' health and introduce the concept of climate change adaptation. Part II will describe the legal context for adaptation, as well as existing health adaptations, at federal, provincial, and municipal levels. Part II will draw variously on environmental law, general climate change adaptation, and health adaptation, as appropriate.³⁸ Part III will provide a *Hudson* case comment. This Part will describe the case, analyze its implications for municipal authority over environmental issues, respond to criticism of the case, and explain its potential implications for municipal health adaptation. Finally, the Conclusion will summarize the main findings, namely that municipalities may have increasing latitude to regulate local environmental issues, including health adaptation.

I. CLIMATE CHANGE HEALTH IMPACTS AND ADAPTATION

Climate change will have serious and complex impacts on human health. The Intergovernmental Panel on Climate Change (IPCC) states that climate change is “unequivocal”³⁹ and is projected to lead to health impacts in all countries and regions.⁴⁰ These impacts will “put the lives and wellbeing of billions of people at increased risk,”⁴¹ particularly vulnerable populations like children and the elderly.⁴² Health Canada highlights six main health vulnerabilities for Canada: extreme temperatures; air quality; stratospheric ozone depletion; extreme weather events; vector- and rodent-borne infectious disease; and food- and water-borne disease.⁴³ Consider water-borne disease, which could be affected by climate change in various ways. Heavy precipitation could increase runoff, leading to water contamination by *E. coli* (similar to contamination by pesticide runoff, discussed above). Marine environments could experience increased algal blooms, such that fish and shellfish for human consumption contain increased levels of toxins. Water-borne disease may also be impacted indirectly by climate change—longer swimming seasons could increase exposure to poor water quality, increasing disease risk. These vulnerabilities are summarized in Table 1. Adaptation will be necessary to prevent, reduce, and manage these climate change-related risks.

37 Howard Epstein, “Case Comment: *Spraytech v. Town of Hudson*” (2001) 19 *Municipal and Planning Law Reports* 56 at 65 [Epstein 2001] (potential for omnibus provisions to address variety of issues); Swaigen, *supra* note 17 at 163 (potential for omnibus provisions to address variety of issues); Marcia Valiante, “Turf War: Municipal Powers, the Regulation of Pesticides and the *Hudson* Decision” (2001) 11 *J Evtl L & Prac* 327 at 339 (potential for omnibus provisions to address variety of issues).

38 Health adaptation is an incredibly broad, cross-cutting issue that could involve a wide range of government departments (see Part I). This paper is written primarily with a lens on environmental issues and climate change, rather than health care per se, to provide a more focused analysis of *Hudson*.

39 “IPCC, 2007: Summary for Policymakers” in S Solomon et al, eds, *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2007) at 5.

40 Klein et al, *supra* note 1.

41 Costello et al 2009, *supra* note 5 at 1693.

42 *Human Health*, *supra* note 7 at 371.

43 *Ibid* at 14.

Table 1: Summary of typical climate change impacts on health in Canada⁴⁴

Health vulnerability	Selected climate-related causes	Selected projected / possible health effects
Extreme temperatures	<ul style="list-style-type: none"> • More frequent and severe heat waves 	<ul style="list-style-type: none"> • Heat-related illnesses and deaths • Respiratory and cardiovascular disorders
Air quality	<ul style="list-style-type: none"> • Increased air pollution: higher levels of ground-level ozone and airborne dust • Increased production of pollens and spores by plants 	<ul style="list-style-type: none"> • Eye, nose, and throat irritation and shortness of breath • Exacerbation of asthma and allergy symptoms • Respiratory and cardiovascular disorders
Stratospheric ozone depletion	<ul style="list-style-type: none"> • Depletion / modification of stratospheric ozone • Increased human exposure to UV radiation owing to behavioural changes resulting from a warmer climate 	<ul style="list-style-type: none"> • More cases of sunburns, skin cancers, cataracts, and eye damage
Extreme weather events	<ul style="list-style-type: none"> • More frequent and violent thunderstorms and hurricanes • Heavy rains causing mudslides and floods • Rising sea levels and coastal instability • Increased drought 	<ul style="list-style-type: none"> • Death, injury, and illness from violent storms, floods, etc. • Social / emotional / psychological harm • Health impacts due to food or water shortages • Illnesses related to drinking water contamination • Indirect health impacts from infrastructure damage, etc.
Vector- and rodent-borne infectious disease	<ul style="list-style-type: none"> • Changes in the biology and ecology of various disease-carrying insects, ticks, and rodents • Longer disease transmission season 	<ul style="list-style-type: none"> • Increased incidence of vector-borne infectious diseases native to Canada (e.g. Rocky Mountain spotted fever) • Possible emergence of new diseases
Food- and water-borne disease	<ul style="list-style-type: none"> • Contamination of drinking and recreational water • Changes in marine environments that result in algal blooms and higher levels of toxins in fish and shellfish • Increased disease risk owing to behavioural changes resulting from a warmer climate (e.g. through longer BBQ and swimming seasons) 	<ul style="list-style-type: none"> • Outbreaks of strains of microorganisms such as <i>E. coli</i> and other water-borne pathogens • Food-borne illnesses

44 Adapted from *Human Health*, *supra* note 7 at 14.

Adaptation is a complex process, since adaptation can take many forms and involve various actors over time.⁴⁵ Adaptation actions include: research, such as reports, maps, and models; planning strategies to guide adaptation; networks between relevant stakeholders; legislation; awareness raising; and implementing adaptation infrastructure.⁴⁶ Sustained commitment to research and planning, for instance, is often required before adaptation infrastructure can be implemented successfully. It is necessary to appreciate these different types of actions to understand the diverse and complementary roles that may be played by actors at different levels of government.

It can be difficult to identify health adaptations. Health and climate change are broad subjects affected by a range of government roles and responsibilities. Often, initiatives not described as explicit health adaptation, like the *Hudson* By-law, have implications for adapting to the health effects of climate change.⁴⁷ It is preferable to take a broad view of health adaptation, rather than limit the analysis to measures that explicitly cite climate change as a motivation,⁴⁸ because (1) a measure's true motivation can be difficult to ascertain, and (2) an action's impact—rather than its stated motivation—is more relevant to Canadians' *actual* health. Therefore, I adopt a broad concept of health adaptation for this paper.

II. LEGAL FRAMEWORK FOR ADAPTATION AND EXISTING HEALTH ADAPTATIONS

To understand the legal framework for municipal health adaptation, it is necessary to understand the broader legal context at different levels of Canadian government.⁴⁹ First, Subpart A will examine the federal and provincial division of powers and how this division of powers has played out for environmental issues in general, and adaptation in particular. Subpart B will examine municipalities' evolving powers and roles, drawing principally from work by constitutional law expert and practitioner Eugene Meehan,⁵⁰ and will provide a snapshot of adaptations occurring at the municipal level.

A. Federal and Provincial Governments

i. Federal and Provincial Division of Powers

The *Constitution Act, 1867* sets out the legislative powers of the federal government and provincial governments in sections 91 and 92 respectively.⁵¹ The environment constitutes

45 Lindsay F Wiley, "Mitigation/Adaptation and Health: Health Policymaking in the Global Response to Climate Change and Implications for Other Upstream Determinants" (2010) 38:3 *JL Med & Ethics* 629 at 636 (interdisciplinary nature of adaptation).

46 Tompkins et al, *supra* note 15.

47 Carolyn Poutiainen et al, *Civil Society Organizations and Adaptation to the Health Effects of Climate Change in Canada* (2011) [in press].

48 Tompkins et al, *supra* note 15 at 630 (definition of adaptation that includes actions motivated by non-climate drivers as well as climate change).

49 This analysis does not consider: (1) actions taken by other actors (civil society organizations, businesses, individuals), which are important for adaptation (Poutiainen et al, *supra* note 47); or (2) the international legal context, since the United Nations Framework Convention on Climate Change (UNFCCC) (9 May 1992, 1771 UNTS 107) prioritizes adaptation in developing countries, rather than domestic adaptation in developed countries.

50 *Supra* note 24.

51 *Constitution Act, 1867* (UK), 30 & 31 Vict, c3, ss 91-92, reprinted in RSC 1985, App II, No 5.

a cross-cutting, inter-sectoral matter that does not fit neatly into these legal categories.⁵² Many federal heads of power are potentially relevant to environmental issues, such as trade and commerce (section 91(2)) and fisheries regulation (section 91(12)).⁵³ The federal government also has the residual “peace, order and good government” (POGG) power.⁵⁴ The POGG power has been applied to environmental issues such as marine pollution.⁵⁵ Meanwhile, the provinces have jurisdiction over property and civil rights (section 92(13)), which has proved most relevant to environmental regulation.⁵⁶

Under the classical federalism paradigm, jurisdictions are seen as “watertight compartments,” with strong exclusivity between federal and provincial powers.⁵⁷ However, the prevailing modern paradigm features weaker exclusivity between federal and provincial powers, which permits complementary programs between levels of government and spillover effects of single-jurisdiction programs.⁵⁸ For example, the SCC has sanctioned the use of administrative inter-delegation,⁵⁹ sometimes enthusiastically.⁶⁰ Both paradigms have been associated with different stages of Canadian constitutional history—with the classical paradigm corresponding with the pre-World War II Privy Council period, and the modern paradigm gaining prominence post-World War II⁶¹—and map onto different subject matters.⁶² The classical paradigm, with its deregulatory bias, has been applied to legislation that is viewed as “interfering with the operation of free markets”; the modern paradigm has been applied to legislation seen as treating “issues of morality or social order.”⁶³ The modern paradigm has also been useful for legislation addressing complex issues that “do not fit so neatly into jurisdictional boxes” as envisioned by the classical paradigm.⁶⁴

52 *Friends of the Oldman River Society v Canada (Minister of Transport)*, [1992] 1 SCR 3, 88 DLR (4th) 1; Swaigen, *supra* note 17 at 182; Chalifour, *supra* note 14 at 173; Morton, *supra* note 17 at 37. Note that environmental issues will be examined here because they offer richer and more extensive jurisprudence than climate change, and environmental issues often have implications for health adaptation.

53 Morton, *supra* note 17 at 42.

54 *Constitution Act, 1867*, *supra* note 51 (Parliament may make laws “for the Peace, Order, and good Government of Canada, in relation to all Matters not coming within the Classes of Subjects by this Act assigned exclusively to the Legislatures of the Provinces” at s 91).

55 *R v Crown Zellerbach Canada Ltd*, [1988] 1 SCR 401, 49 DLR (4th) 161.

56 Morton, *supra* note 17 at 38.

57 Bruce Ryder, “The Demise and Rise of the Classical Paradigm in Canadian Federalism: Promoting Autonomy for the Provinces and First Nations” (1991) 36:2 McGill LJ 308 at 312, 323 (citing, e.g., *Canada (AG) v. Alberta (AG)*, [1916] 1 AC 588, 26 DLR 288 (PC) Lord Haldane).

58 *Ibid* at 312.

59 *Prince Edward Island (Potato Marketing Board) v HB Willis Inc*, [1952] 2 SCR 392, 4 DLR 146; *Reference Re Agricultural Products Marketing Act*, [1978] 2 SCR 1198, 84 DLR (3d) 257; *Coughlin v Ontario (Highway Transport Board)*, [1968] SCR 569, 68 DLR (2d) 384 [Coughlin]; Ryder, *supra* note 57 at 326 (citing these cases). Administrative inter-delegation refers to the delegating of power by the federal Parliament and the provincial legislatures “in furtherance of the administration of government” (CED (Administrative Law), II.1.(b) at §12).

60 *Coughlin*, *supra* note 59 (Cartwright J stated that “it is satisfactory to find that there is nothing which compels us to hold that the object sought by this co-operative effort is constitutionally unattainable” at 576 cited to SCR); Ryder, *supra* note 57 at 326 (citing permissive judicial attitude in *Coughlin*).

61 *Ibid* at 380.

62 *Ibid* at 327-28.

63 *Ibid* at 380. See e.g. *Re Insurance Act of Canada*, [1932] AC 41, [1932] 1 DLR 97 (PC) (striking down federal insurance regulation under classical paradigm, cited by Ryder, *supra* note 57 at 329), *Russell v R*, (1882) 7 App Cas 829 (PC) (allowing regulation of liquor trade using principles of modern paradigm, cited by Ryder, *supra* note 57 at 329). Note that obviously, legislation does not “come pre-packaged with a markets or morality ‘tag.’ The characterization that is adopted is largely a matter of judicial discretion [...]” (Ryder, *supra* note 57 at 331).

64 *Ibid* at 313.

Unsurprisingly, this modern trend is prevalent for environmental regulation. This regime has been shaped by jurisprudence and political forces to emerge as a province-dominated patchwork. Jurisprudence has recognized concurrent jurisdiction in most environmental areas, limiting federal unilateralism and allowing a strong provincial presence.⁶⁵ In *Friends of the Oldman River Society v Canada (Minister of Transport)*, Justice La Forest acknowledged that the environment “does not comfortably fit within the existing division of powers without considerable overlap and uncertainty,”⁶⁶ and that both the federal and provincial levels of government can exercise authority in a way that affects the environment.⁶⁷ The provinces became active in regulating environmental issues in the 1960s-70s, principally based on section 92(13) powers relating to property and civil rights.⁶⁸ By the late 1960s, when the federal government first became interested in regulating environmental issues, much provincial regulation with a firm constitutional basis had already been established. This timing—in conjunction with a limited judicial interpretation of the federal POGG power up to that point—minimized federal unilateral powers on environmental matters.⁶⁹ To summarize, the Canadian environmental policy regime is a patchwork that could be described as province-dominated, with federal support in shared programs and limited federal unilateralism.⁷⁰

ii. Federal and Provincial Climate Change Adaptation

Canadian climate change adaptation is described as an evolving patchwork or “mosaic” of actions at different levels of government.⁷¹ Canada still lacks a national adaptation plan or strategy to provide top-down direction and cohesion to adaptation efforts.⁷² However, the federal government has been active in developing climate models and scenarios⁷³ and undertaking national assessments.⁷⁴ Regarding health in particular, the major research group is the Climate Change and Health Office in Health Canada. This group published *Human Health in a Changing Climate* in 2008,⁷⁵ which assesses Canada’s vulnerability and ability to adapt to the health effects of climate change. This group also conducts other research, such as response systems to address extreme heat events.⁷⁶

Many provinces have provincial adaptation plans or strategies containing health-relevant components.⁷⁷ For example, Ontario’s Climate Change Action Plan addresses climate change impacts on source water protection.⁷⁸ Provinces also participate in six Regional Adaptation Collaboratives (RACs) in the North, British Columbia, the Prairies, Ontario,

65 Morton, *supra* note 17.

66 *Supra* note 52 at para 94.

67 *Ibid* at para 95.

68 See e.g. *R v Lake Ontario Cement*, [1973] 2 OR 247, 35 D.L.R. (3d) (Ont HC); Morton, *supra* note 17 at 38-40 (citing *R v Lake Ontario Cement*).

69 *Ibid* at 41.

70 *Ibid* at 50.

71 Thea Dickinson & Ian Burton, “Adaptation to Climate Change in Canada: A Multi-Level Mosaic” in James D Ford & Lea Berrang-Ford, eds, *Climate Change Adaptation in Developed Nations: From Theory to Practice* (Dordrecht: Springer, 2011) 104.

72 *Ibid* at 105-106, 116.

73 *Ibid*.

74 Canada, Environment Canada, *The Canada Country Study: Climate Impacts and Adaptation* (Ottawa: Government of Canada, 1997); *From Impacts to Adaptation*, *supra* note 7.

75 *Human Health*, *supra* note 7.

76 Health Canada, “Developing Heat Resilient Communities and Individuals in Canada” (2010), online: Health Canada <<http://www.hc-sc.gc.ca/ewh-semt/climat/adapt/heat-chaleur-eng.php>>.

77 Dickinson & Burton, *supra* note 71 at 109.

78 *Ibid* at 112.

Quebec, and the Atlantic, respectively.⁷⁹ RACs were established in conjunction with Natural Resources Canada and the provinces⁸⁰ in order to address regional decision-making and adaptation planning. Many areas of study are connected to health, such as water management and flood protection in the British Columbia RAC.⁸¹

In summary, adaptation efforts to date bear out the modern trend that allows concurrent jurisdiction and discards the watertight compartment paradigm. Adaptation efforts resemble the environmental policy regime in that adaptations are emerging ad hoc. However, it is unclear whether adaptation will end up dominated by the provinces as the general environmental regulation regime has been. Both levels of government must continue addressing adaptation, and in particular, a national plan or strategy is needed to guide efforts at all levels.

B. Municipal Governments

i. Municipal Powers: the Traditional View

Under the traditional view, municipal powers are quite limited. Municipal powers are derived from two fundamental sources: the *Baldwin Act* and section 92(8) of the *Constitution Act, 1867*. The 1849 *Baldwin Act* set out the role, function, and structure of local governments in what was to become Canada.⁸² The *Baldwin Act* places local governments in a “secondary and subservient position” to higher levels of government.⁸³ Section 92(8) of the *Constitution Act, 1867* grants provinces the authority to pass laws establishing municipalities.⁸⁴ Municipalities, as “creatures” of the provinces, are delegated their authority from the provinces through provincial statutes.⁸⁵ These provincial statutes can only delegate powers to municipalities that are *intra vires* the provinces’ own authority under the Constitution.⁸⁶

Broadly speaking, provinces delegate authority by enacting municipal enabling legislation. Provinces pass general municipal acts⁸⁷ that provide for the “framework, formation and operation” of municipalities.⁸⁸ To incorporate a specific municipality, a province may also enact an individual statute (e.g. *City of Toronto Act*).⁸⁹ The general municipal act plus any specific incorporating legislation comprise that municipality’s “enabling legislation.”⁹⁰

79 Natural Resources Canada, “Regional Collaboratives: About the Collaboratives” (2011), online: Natural Resources Canada <<http://www.nrcan.gc.ca/earth-sciences/climate-change/community-adaptation/regional-collaborative/657>> [RACs].

80 Dickinson & Burton, *supra* note 71 at 107.

81 RACs, *supra* note 79.

82 Ian MacFee Rogers, *The Law of Canadian Municipal Corporations*, vol 1 (Toronto: Carswell, 1959) at 32.

83 Meehan et al, *supra* note 24 at 4.

84 *Constitution Act, 1867*, *supra* note 51 at s 92(8); Rogers, *supra* note 82 at 36 (explanation of provincial constitutional authority).

85 Meehan et al, *supra* note 24 at 5 (explanation of municipal status).

86 Rogers, *supra* note 82 at 36.

87 *Ibid* at 37; Mark Adkins, Len Griffiths & Shawna Parr, “The Hudson Decision: An ‘Over-Precautionary’ Approach?” (2002) 51 UNBLJ 231 at 232-33; Meehan et al, *supra* note 24 at 16.

88 Adkins et al, *supra* note 87 at 232.

89 *City of Toronto Act, 2006*, SO 2006, c 11, Sch A. See Rogers (*supra* note 82 at 37) for details on various modes by which incorporation may occur.

90 Adkins et al, *supra* note 87 at 232. Note that this is a simplified view of “enabling legislation.” For example, Ontario has over 100 statutes assigning powers to local authorities beyond those conferred on them by the general municipal act (Rogers, *supra* note 82 at 32).

Using a basic framework, enabling legislation typically gives municipalities authority in two ways.⁹¹ First, this legislation may enumerate municipal authority within specific subject areas,⁹² such as local tree planting. Second, enabling legislation may include omnibus provisions that confer discretionary powers over broad issues that are not enumerated by the legislation.⁹³ For example, recall that section 410(1) of the Quebec *Cities and Towns Act*, which was at issue in *Hudson*, states that “the council may make by-laws: to secure peace, order, good government, health and general welfare in the territory of the municipality [...]”⁹⁴

The traditional principle, known as Dillon’s Rule, is that municipalities can only exercise powers that are explicitly conferred upon them by a provincial statute, construed narrowly.⁹⁵ Any doubts are resolved against municipality authority.⁹⁶ As summarized by the Ontario Court of Appeal in *Ottawa Electric Light Co v Ottawa (City)*:

It is a general and undisputed proposition of law that a municipal corporation possesses and can exercise the following powers and no others, first, those granted in express words; second, those necessarily or fairly implied in or incident to the powers expressly granted; third, those essential to the declared objects and purposes of the corporation, not simply convenient, but indispensable.⁹⁷

This traditional view is also expressed in *East York (Borough) v Ontario (Attorney General)*, in the following four principles:

- (i) municipal institutions lack constitutional status;
- (ii) municipal institutions are creatures of the legislature and exist only if provincial legislation so provides;
- (iii) municipal institutions have no independent autonomy and their powers are subject to abolition or repeal by provincial legislation;
- (iv) municipal institutions may exercise only those powers which are conferred upon them by statute.⁹⁸

Overall, the traditional view has largely constrained municipal law-making powers and revenue-raising abilities.⁹⁹ Municipal action has been “particularly susceptible” to judicial inspection.¹⁰⁰

ii. Increased Municipal Latitude: A Changing Paradigm

In spite of the traditional view of municipalities, jurisprudence and legislation have increasingly allowed some degree of deference to municipal decisions. Yet, despite their

⁹¹ Adkins et al, *supra* note 87 at 233.

⁹² Rogers, *supra* note 82 at 306.

⁹³ *Ibid* at 313.

⁹⁴ *Cities and Towns Act*, *supra* note 36.

⁹⁵ Meehan et al, *supra* note 24 at 16, 26; Valiante, *supra* note 37 at 333.

⁹⁶ Meehan et al, *supra* note 24 at 26.

⁹⁷ *Ottawa Electric Co v Ottawa (City)* (1906), 12 OLR 290 (Ont CA), cited in Meehan et al, *supra* note 24 at 16.

⁹⁸ (1997), 34 OR (3d) 789 at para 14, 45 CRR (2d) 237, (Ont Gen Div).

⁹⁹ Meehan et al, *supra* note 24 at 15.

¹⁰⁰ *Ibid* at 22.

increasing importance, neither municipalities' constitutional status nor revenue raising abilities have substantially changed.¹⁰¹ Municipalities today are therefore in a difficult position: “[o]n the one hand the demands made upon municipalities have significantly grown, yet on the other hand, the law-making and financial tools have remained virtually unchanged.”¹⁰²

Responding at least in part to this problem, progressive judicial interpretation of municipal authority has emerged. In *Shell Canada Products Ltd v Vancouver (City)* (“*Shell Canada Products*”), the SCC assessed whether impugned municipal provisions were ultra vires.¹⁰³ Justice McLachlin (as she then was), dissenting, identified two approaches to assessing municipal powers: (1) a “narrow confining approach” or (2) a “broader more deferential approach.”¹⁰⁴ While the majority adopted the narrow approach, Justice McLachlin argued that, except in cases where municipal actions are clearly *ultra vires*, the deferential approach is preferable for four reasons. First, courts must respect local decisions for the proper functioning of local democracy.¹⁰⁵ Second, deference to municipal decisions avoids the costs and uncertainty of excessive litigation.¹⁰⁶ Third, deference is more consistent with municipalities' expanding range of responsibilities; a traditional interventionist approach would confine municipalities in the “straightjackets of tradition.”¹⁰⁷ Finally, a deferential approach is more consistent with the SCC's approach to judicial review of administrative agencies.¹⁰⁸ The deferential approach advocated here has been quoted approvingly in recent SCC cases, including *Hudson*.¹⁰⁹ Progressive judicial interpretation may contribute to easing municipalities' difficult position in the face of increasing responsibilities.

Some recent provincial legislation similarly adopts a progressive approach to municipal law making. Section 8 of the Ontario *Municipal Act, 2001* dictates that municipal powers should be interpreted broadly to “confer broad authority on the municipality to enable the municipality to govern its affairs as it considers appropriate and to enhance the municipality's ability to respond to municipal issues.”¹¹⁰ The Quebec *Municipal Powers Act* (“*MPA*”)—which replaced the *Cities and Towns Act* at issue in *Hudson*—has similar interpretive provisions.¹¹¹ The British Columbia *Community Charter: A New Legislative Framework for Local Government* (“*Community Charter*”) recognizes that municipalities are an order of government that occupy a “central place” in the governmental system, and that they must have a relationship with the provinces based on “mutual respect.”¹¹²

101 Meehan et al, *supra* note 24 at 9.

102 *Ibid* at 10.

103 *Shell Canada Products Ltd v Vancouver (City)*, [1994] 1 SCR 231, 88 BCLR (2d) 145 [*Shell Canada Products*].

104 *Ibid* at para 49; Meehan et al, *supra* note 24 at 28 (noting two approaches taken in *Shell Canada Products*).

105 *Shell Canada Products*, *supra* note 103 at para 64; Meehan et al, *supra* note 24 at 28 (noting benefits of deferential approach expounded by McLachlin J).

106 *Shell Canada Products*, *supra* note 103 at para 65; Meehan et al, *supra* note 24 at 28 (noting benefits of deferential approach expounded by McLachlin J).

107 *Shell Canada Products*, *supra* note 103 at para 66.

108 *Ibid* at para 67; Meehan et al, *supra* note 24 at 28 (noting benefits of deferential approach expounded by McLachlin J).

109 *Hudson*, *supra* note 11 at para 23; Meehan et al, *supra* note 24 at 28 (noting Supreme Court's approval in *Hudson*).

110 *Municipal Act*, SO 2001, c 25, s 8.

111 RSQ 2009, c C-47.1, art 2.

112 British Columbia, *The Community Charter: A New Legislative Framework for Local Government* (British Columbia: Government of British Columbia, 2002) at 7 [*Community Charter*].

In summary, a progressive approach to municipal regulation has emerged in the jurisprudence and some provincial legislation. This progressive approach, and especially the Quebec *MPA*, will be discussed in Part III. However, municipalities' constitutional status remains formally unchanged, and their revenue raising abilities remain largely limited, despite being faced with increasing responsibilities.¹¹³

iii. Municipal Climate Change Adaptation

Many municipal responsibilities are potentially relevant for health adaptation,¹¹⁴ and adaptations are occurring within these recognized spheres in conjunction with other levels of government.¹¹⁵ An example of national–municipal cooperation is the Natural Resources Canada report *Adapting to Climate Change: An Introduction for Canadian Municipalities*.¹¹⁶ This report provides information to municipal decision-makers, primarily through case studies on municipal adaptations across Canada. For instance, the report highlights Metro Vancouver's Stormwater Management Program, which addresses stormwater runoff quality and quantity. An example of provincial–municipal cooperation is the Ontario Climate Change Action Plan, which provides for the creation of Municipal Water Sustainability Plans under the provincial *Water Opportunities and Water Conservation Act*.¹¹⁷ In this way, higher levels of government recognize and guide municipal adaptation within spheres of established municipal responsibility.

To summarize Subpart B, the subordinate constitutional status of municipalities has not formally changed, although jurisprudence and provincial legislation are showing increased deference to municipal authority. Municipalities are currently engaging in adaptation initiatives, like stormwater management described above. These initiatives contribute to Canada's adaptation patchwork and support the view that adaptation is occurring in the spirit of the modern federalism paradigm, with action being taken at different levels of government. The *Hudson* decision further suggests how municipalities may contribute to this adaptation patchwork.

III. HUDSON: CASE COMMENT

A. Description

i. Facts

The Town of Hudson, Quebec, adopted By-law 270 in 1991. The By-law restricted the use of cosmetic pesticides in the municipality. In 1992, two landscaping and lawncare companies, Spraytech and Chemlawn (“the appellants”), were charged with violating the By-law and summoned before the Municipal Court. The appellants held valid provincial

113 Meehan et al, *supra* note 24 at 30-31, 35-36.

114 Dickinson & Burton, *supra* note 71 at 108.

115 Municipal adaptations are also occurring in conjunction with non-governmental actors. Many municipalities participate in the Partners for Climate Protection program, which is run by the Federation of Canadian Municipalities and ICLEI Canada to support adaptation to local climate impacts (Federation of Canadian Municipalities, “Partners for Climate Protection: Municipal Resources for Adapting to Climate Change” (2009), online: Federation of Canadian Municipalities <http://www.fcm.ca/Documents/reports/PCP/Municipal_Resources_for_Adapting_to_Climate_Change_EN.pdf>).

116 Canada, Natural Resources Canada, *Adapting to Climate Change: An Introduction for Canadian Municipalities* (Ottawa: Government of Canada, 2010) [*Adapting to Climate Change*].

117 Ontario, Ontario Ministry of the Environment, *Climate Ready: Ontario's Adaptation Strategy and Action Plan* (Ontario: Government of Ontario, 2011) at 30-31.

licences and applied federally registered pesticides.¹¹⁸ The appellants pled not guilty to the municipal charge and obtained a suspension of proceedings in order to bring a motion for a declaratory judgment before the Quebec Superior Court. The appellants sought a declaration that the By-law was *ultra vires* Hudson's authority and inoperative due to conflict with provincial and federal regulation.¹¹⁹

ii. Legal History

At the Superior Court, Justice Kennedy first found that the By-law was valid under the omnibus section 410(1) of the Quebec *Cities and Towns Act*, which states that “the council may make by-laws: to secure peace, order, good government, health and general welfare in the territory of the municipality [...]”.¹²⁰ Justice Kennedy also held that the By-law did not conflict with federal or provincial regulation¹²¹ and was therefore valid and operable.

At the Court of Appeal, the appellants challenged Justice Kennedy's ruling on two grounds. First, the appellants alleged that the By-law was enacted pursuant to section 412(32) of the Quebec *Cities and Towns Act*, which regulates toxic substances, rather than section 410(1). However, Justice Delisle held that the By-law was enacted under section 410(1), since the By-law's definition of “pesticide” is identical to that found in the *Pesticides Act*,¹²² and does not refer to toxicity or terms used in section 412(32).¹²³ Furthermore, the By-law was enacted in the public interest and in response to residents' health concerns.¹²⁴ Second, the appellants argued that the By-law conflicted with the provincial *Pesticides Act*¹²⁵ and was therefore inoperative. The court rejected this argument and confirmed the Superior Court judgment.¹²⁶

iii. Supreme Court of Canada Judgment

The SCC upheld the By-law and dismissed the appeal. The seven Justices were divided between two opinions. Justice L'Heureux-Dubé wrote for the majority (Justices Gonthier, Bastarache, and Arbour concurring), and Justice LeBel wrote a concurring judgment (Justices Iacobucci and Major concurring).

Justice L'Heureux-Dubé summarized the two issues raised by the appeal: (1) did Hudson have the statutory authority to enact the By-law; and (2) if Hudson had authority to enact it, was the By-law inoperative due to a conflict with federal or provincial legislation?¹²⁷

Regarding the first issue, Justices L'Heureux-Dubé and LeBel agreed that the By-law was validly enacted since its purpose falls within the ambit of section 410(1). The Justices noted that by-laws are presumed valid;¹²⁸ the party challenging the by-law has the burden of proof;¹²⁹ and courts should take care to avoid substituting their views of

118 Valiante, *supra* note 37 at 330.

119 Hudson, *supra* note 11 at paras 6-7.

120 *Cities and Towns Act*, *supra* note 36.

121 Hudson, *supra* note 11 at para 11.

122 *Pesticides Act*, RSQ 1993, c P-9.3, s 1.

123 Hudson, *supra* note 11 at paras 12-13.

124 *Ibid* at para 14.

125 *Pesticides Act*, *supra* note 122.

126 Hudson, *supra* note 11 at paras 15-16.

127 *Ibid* at para 17.

128 *Ibid* at para 10.

129 *Ibid* at para 21.

what is best for citizens,¹³⁰ in line with the principle of subsidiarity.¹³¹ Under this view, the By-law was held to respond to residents' concerns about alleged health risks of non-essential pesticides applied within the municipality, thus falling under section 410(1).¹³² While Justice LeBel rejected the relevance of international law,¹³³ Justice L'Heureux-Dubé noted that her reading of statutory authority is consistent with international law's precautionary principle. This principle dictates:

Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.¹³⁴

Hudson's concerns about pesticides fits within this "rubric of preventative action."¹³⁵ However, municipalities cannot enact *any* by-law whatsoever under omnibus provisions; omnibus provisions "do not confer unlimited power" and municipalities cannot use these provisions to enact by-laws that serve ulterior non-municipal objectives.¹³⁶ Irrespective of these general limits to omnibus provisions, the By-law was validly enacted.

Regarding the second issue—the By-law's operability—Justices L'Heureux-Dubé and LeBel agreed that the By-law did not conflict with federal or provincial legislation and thus was operable. The Justices applied the "express contradiction"¹³⁷ or "impossibility of dual compliance"¹³⁸ test to assess whether a conflict existed between legislation by higher levels of government and the By-law. This test defines conflict as one regulation saying 'yes' while another says 'no,' such that "the same citizens are being told to do inconsistent things."¹³⁹ The federal *Pest Control Products Act* ("PCPA")¹⁴⁰ regulates the importation, manufacturing, sale, and distribution of pesticides in Canada.¹⁴¹ As the PCPA is permissive, rather than exhaustive,¹⁴² the PCPA was found not to conflict with the By-law.¹⁴³ The provincial *Pesticides Act* establishes a permit and licensing system for vendors and commercial applicators of pesticides.¹⁴⁴ The SCC found no barrier to dual compliance with the *Pesticides Act* and the By-law. The provincial legislation complements the federal and municipal legislation, creating a "tri-level regulatory regime"¹⁴⁵ in which the By-law was operable. This decision embodies several principles that are potentially relevant to municipal environmental regulation.

130 *Ibid* at para 23.

131 L'Heureux-Dubé J explained the principle of subsidiarity as the "proposition that law-making and implementation are often best achieved at a level of government that is not only effective, but also closest to the citizens affected and thus most responsive to their needs, to local distinctiveness, and to population diversity" (*ibid* at para 3).

132 Hudson, *supra* note 11 at paras 26-27, 53.

133 *Ibid* at para 48.

134 *Ibid* at para 31 (quoting para 7 of the Bergen Ministerial Declaration on Sustainable Development (1990)).

135 *Ibid* at para 32.

136 *Ibid* at para 20. Also note that there were no limitations on section 410(1) (*Cities and Towns Act*, *supra* note 36), e.g. municipalities did not require ministerial approval when enacting by-laws pursuant to this section.

137 *Ibid* at para 34.

138 *Ibid* at para 46.

139 *Ibid* at para 34.

140 *Pest Control Products Act*, RSC 1985, c P-9.

141 Hudson, *supra* note 11 at paras 35, 46.

142 *Ibid* at para 35.

143 *Ibid* at para 46.

144 *Pesticides Act*, *supra* note 122.

145 Hudson, *supra* note 11 at para 39.

B. Analysis

i. *Hudson* and Implications for Municipal Environmental Regulation

Hudson exemplifies the emerging trend of judicial deference to municipal authority, and seems to embody several principles for interpreting municipal laws, including:

1. The party challenging the by-law has the burden of proof to show it is *ultra vires*.¹⁴⁶ By-laws are generally presumed valid;
2. The principle of subsidiarity may be a useful lens for viewing municipal laws;¹⁴⁷
3. Although they do not confer unlimited power, omnibus provisions can be a valid source of law.¹⁴⁸ Omnibus provisions must be given meaning to allow municipalities to address emerging or changing local issues;¹⁴⁹
4. The precautionary principle can be invoked to support a by-law;¹⁵⁰
5. A federal or provincial regulatory regime does not automatically invalidate a municipal by-law pertaining to the same matter; important matters can be addressed by all levels of government. The dual compliance test should be used to assess whether a conflict exists, and thus determine the by-law's operability;¹⁵¹ and
6. In general, municipal powers should be interpreted generously.¹⁵²

Immediately following the *Hudson* decision, commentators had conflicting views as to what the effects of the case might be. On the one hand, the municipal and environmental law scholar Howard Epstein argued that *Hudson's* practical effect would be quite limited, and that municipalities would likely prefer to rely on enumerated powers rather than omnibus provisions for increased certainty.¹⁵³ On the other hand, some commentators hailed *Hudson* as a “turning point” for Canadian municipalities, with the potential to dramatically enhance municipalities' abilities to respond to issues ranging from climate change mitigation to perfume bans to further restrictions on smoking.¹⁵⁴

146 *Hudson*, *supra* note 11 at para 21; Epstein 2001, *supra* note 37 at 59 (highlighting important principles in *Hudson*).

147 *Hudson*, *supra* note 11 at paras 3, 10; Epstein 2001, *supra* note 37 at 59 (highlighting principles in *Hudson*); Meehan et al, *supra* note 24 at 44 (highlighting principles in *Hudson*). Recall the principle of subsidiarity enunciated in *Hudson*: the “proposition that law-making and implementation are often best achieved at a level of government that is not only effective, but also closest to the citizens affected and thus most responsive to their needs, to local distinctiveness, and to population diversity” (*supra* note 11 at para 3).

148 *Hudson*, *supra* note 11 at para 20; Epstein 2001, *supra* note 37 at 59 (highlighting principles in *Hudson*); Meehan et al, *supra* note 24 at 57-58 (highlighting principles in *Hudson*).

149 *Hudson*, *supra* note 11 at para 51; Epstein 2001, *supra* note 37 at 59 (highlighting principles in *Hudson*); Meehan et al, *supra* note 24 at 58 (highlighting principles in *Hudson*).

150 Valiante, *supra* note 37 at 353. Recall the precautionary principle enunciated in *Hudson*: “Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.” (*supra* note 11 at 31, quoting para 7 of the Bergen Ministerial Declaration on Sustainable Development (1990)).

151 *Hudson*, *supra* note 11 at paras 34, 46; Epstein 2001, *supra* note 37 at 59 (highlighting principles in *Hudson*); Meehan et al, *supra* note 24 at 57 (highlighting principles in *Hudson*). Note that the dual compliance test has the effect of minimizing potential conflicts (Valiante, *supra* note 37 at 341).

152 *Hudson*, *supra* note 11 at para 23; Epstein 2001, *supra* note 37 at 59-60 (highlighting principles in *Hudson*: *Hudson* continues and exemplifies the trend of a deferential judicial approach towards municipal powers, rejecting the restrictive approach adopted by the majority in *Shell Canada Products*, *supra* note 103); Meehan et al, *supra* note 24 at 44 (highlighting principles in *Hudson*).

153 Epstein 2001, *supra* note 37 at 59-60.

154 Valiante, *supra* note 37 at 339, 358; Adkins et al, *supra* note 87.

Empirically, the former view has prevailed, with most municipalities relying on enumerated powers—although isolated examples support the latter view as well. For example, some Quebec decisions have upheld municipalities' role in regulating local environmental matters.¹⁵⁵ In *Wallot c Québec (Ville de)* (“*Wallot*”) at the Quebec Court of Appeal, the City of Quebec was permitted to enact regulations forcing landowners to maintain riparian vegetation in order to protect water quality.¹⁵⁶ The regulations were enacted under the omnibus provisions of the *Municipal Powers Act*,¹⁵⁷ as well as enumerated powers of the *Charter of Ville de Québec* relating to water quality.¹⁵⁸ Notwithstanding these enumerated powers, the authority conferred under omnibus provisions was weighed heavily by the Court.¹⁵⁹

Principles embodied in *Hudson* have also been cited in decisions about municipal regulation under enumerated powers. The principle of subsidiarity has been cited in certain Ontario decisions.¹⁶⁰ For example, in *Pub & Bar Coalition of Ontario v Ottawa (City)* (“*Pub & Bar Coalition*”), the Pub and Bar Coalition (“*Coalition*”) argued that two by-laws enacted by the City of Ottawa (“*the City*”), which banned smoking in certain locations, were *ultra vires* the City's powers. The Court rejected the Coalition's arguments, supporting its decision by citing the SCC's invocation of the principle of subsidiarity in *Hudson*. The Court also affirmed that the party challenging a by-law's validity has the burden of proving it is *ultra vires*, and adopted a generous view of the City's authority.¹⁶¹ Therefore, while *Hudson* may not have dramatically increased municipal regulations under omnibus provisions, principles embodied in *Hudson* have proved nonetheless useful for assessing municipal regulations enacted under enumerated powers.

A generous view of municipal authority is also reflected in recent changes to Quebec's legislative regime. The *Municipal Powers Act*,¹⁶² which replaced the *Cities and Towns Act*, still contains an omnibus provision: “In addition to the regulatory powers under this Act, a local municipality may adopt a by-law to ensure peace, order, good government, and the general welfare of its citizens.”¹⁶³ The *MPA* also contains other key articles that have profoundly modified our conception of municipal powers with respect to environmental matters.¹⁶⁴ Article 2 states:

[M]unicipalities are granted powers enabling them to respond to various changing municipal needs in the interest of their citizens. The provisions of the Act are not to be interpreted in a literal or restrictive manner.¹⁶⁵

155 Jean-Francois Girard, « Dix ans de protection de l'environnement par les municipalités depuis l'arrêt *Spraytech*: constats et perspectives » in Service de la formation continue, Barreau du Québec, *Développements récents en droit de l'environnement*, vol 329 (Cowansville, Que : Yvon Blais, 2010) 49 at 55.

156 *Wallot c Québec (Ville de)*, 2011 QCCA 1165 [*Wallot*].

157 *Supra* note 111.

158 *Charter of Ville de Québec*, RSQ, c C-11.5, ss 147, 195; *Wallot*, *supra* note 156 at paras 29-34.

159 *Ibid* at paras 29-33.

160 *Pub & Bar Coalition of Ontario v Ottawa (City)* (2001), 23 MPLR (3d) 42 (Ont SCJ) [*Pub & Bar Coalition*], affirmed 2002 CarswellOnt 2079 (Ont CA) and 2002 CarswellOnt 2080 (Ont CA); *Ben Gardiner Farms Inc v West Perth (Township)*, (2001) MPLR (3d) 43, 152 OAC 47, (Ont Div Ct); *Goldlist Properties Inc v Toronto (City)* (2002), 58 OR (3d) 232, 26 MPLR (3d) 25, (Ont Div Ct), additional reasons in 2002 CarswellOnt 1753 (Ont Div Ct), leave to appeal refused and reversed in part (2003) 232 DLR (4th) 298, 67 OR (3d) 441, (Ont CA); Meehan et al, *supra* note 24 at 45-46 (citing above cases).

161 *Pub & Bar Coalition*, *supra* note 160.

162 *Supra* note 111.

163 *Ibid*, s 85.

164 Girard, *supra* note 155 at 55-61 (explaining significance of *MPA*).

165 *Supra* note 111.

This interpretive provision foresees municipal action on new or emerging issues, including environmental. Article 4(4), a general provision on municipal powers, specifically grants municipalities jurisdiction in the environmental field.¹⁶⁶ Article 19 elaborates that “[a] local municipality may adopt by-laws on environmental matters”¹⁶⁷—if it were not already sufficiently clear. In this way, the *MPA* strengthens municipalities’ ability to regulate environmental issues.

The *Municipal Powers Act* does not confer municipal authority in all circumstances. In *Ferme l’Évasion inc c Elgin (Municipalité du canton d’)* (“*Ferme l’Évasion*”), the namesake farm was charged with violating a municipal by-law that prohibited spreading sewage sludge as agricultural fertilizer.¹⁶⁸ The farm claimed the ban was *ultra vires* municipal authority. The Superior Court decision echoed *Hudson*: Justice Reimnitz held that the by-law was valid under the *MPA*, and even invoked the precautionary principle, noting that lack of scientific certainty was not a barrier to the by-law’s validity.¹⁶⁹ However, this decision was reversed on appeal. Since provincial legislation set specific parameters for permissible municipal bans on sludge application, and the by-law did not respect these parameters, the by-law was struck down as invalid.¹⁷⁰ Therefore, while the overall trend in Quebec jurisprudence and legislation arguably points to a liberal conception of municipal authority, cases like *Ferme l’Évasion* show limits to municipal authority as well. Municipalities remain technically subordinate, and cannot regulate in a way that conflicts with specific regulation by higher levels of government.¹⁷¹

ii. Criticism of *Hudson*

Some commentators argue that *Hudson* is problematic. In this section, I will outline and respond to criticism focused on municipalities’ apparently limited capabilities to regulate environmental issues, in conjunction with the SCC’s treatment of the precautionary principle.

Hudson may arguably provide support for municipalities to regulate complex areas that are beyond the experience, expertise, and resources of municipal councils. Municipalities may invoke the precautionary principle to pass by-laws regulating potentially harmful activities; this type of regulation could be a “major step backward” for scientifically sound environmental regulation.¹⁷² I concede that municipalities often lack financial resources to conduct, for example, their own research on best practices.¹⁷³ I also concede that the criticism of the precautionary principle is serious, and will be discussed in Subpart C.iii.

However, the notion that municipalities should not regulate in complex areas that are supposedly beyond local capabilities is suspect for three reasons. First, local governments may possess greater knowledge of certain aspects of local issues than higher levels of government. This rationale underpins the principle of subsidiarity, which recognizes that

166 *Quebec Municipal Powers Act*, *supra* note 11, s 4(4) (“In addition to the areas of jurisdiction conferred on it by other Acts, a local municipality has jurisdiction in the following fields: (4) the environment”).

167 *Ibid*, s 19.

168 *Ferme l’Évasion inc. c Elgin (Municipalité du canton d’)*, 2009 QCCS 4386 [*Ferme l’Évasion*].

169 *Ferme l’Évasion*, *supra* note 168 at paras 175-177.

170 *Ferme l’Évasion inc. c Elgin (Municipalité du canton d’)*, 2011 QCCA 967.

171 Valiante, *supra* note 37 (“If federal or provincial governments want to exclude municipal action from particular subjects, or steer it in specific limited directions, they will have to do so expressly” at 343).

172 Adkins et al, *supra* note 87 at 232, 237-238.

173 Jaclyn A Paterson et al, “Adaptation to Climate Change in the Ontario Public Health Sector” (2012) 12 *BMC Public Health* 452; Sarah Burch, “Transforming Barriers into Enablers of Action on Climate Change: Insights from Three Municipal Case Studies in British Columbia, Canada” (2010) 20:2 *Global Environmental Change* 287 at 293.

local governments are more effective in responding to local needs.¹⁷⁴ This rationale also fits with local adaptation to local impacts of climate change, which will be discussed further below in Subpart C. Second, this criticism ignores interaction between municipalities and other actors. Municipal regulation does not occur in a vacuum; it can be supported by research (e.g. best practices guides) and financing from higher levels of government to combat resource deficits and to avoid duplication of effort where appropriate.¹⁷⁵ Depending on the municipality, even non-governmental organizations (NGOs) may play crucial roles.¹⁷⁶ Third, municipal action can be critical when higher levels of government fail to regulate effectively, as was arguably true for pesticide regulation at the time of *Hudson*. The federal government has acknowledged that pesticide registration is no guarantee that they are safe—it just means that pesticide risks were considered acceptable at the time of registration.¹⁷⁷ According to an audit in 1999, the federal government failed to re-evaluate the risks of pesticides that had been approved for use long ago, with many active ingredients in registered pesticides having been approved before 1960.¹⁷⁸ This pesticide regime demonstrates that municipal action may be needed to protect residents' health when regulation at higher levels of government is inadequate. For these reasons, the argument that municipalities are ill-equipped to respond to complex environmental issues likely does not apply in all cases.

Overall, *Hudson* demonstrates the enormous potential for municipalities to regulate issues related to the environment and health. To what extent may this be true for adaptation to the health effects of climate change?

C. *Hudson* and Health Adaptation

This section will explore the possible implications of *Hudson* for health adaptations undertaken by Canadian municipalities, based on the following four points:

1. Adaptations will likely occur under the authority of existing enumerated powers, although omnibus provisions may provide support;
 2. Municipal health adaptations may be supported by the principle of subsidiarity;
 3. Municipal health adaptations may be supported by the precautionary principle; and
 4. Municipal health adaptations may complement federal or provincial regulations related to the same matter.
- i. Adaptations Will Likely Occur Under the Authority of Existing Enumerated Powers, Although Omnibus Provisions May Provide Support

Unlike in *Hudson*, enumerated powers will likely be used to implement municipal health adaptations. First, as discussed above, municipalities tend to rely on enumerated powers for certainty. Second, enumerated powers have great potential for implementing health

174 Meehan et al, *supra* note 24 at 44.

175 Paterson et al, *supra* note 173; Burch, *supra* note 173 at 293; John R Nolon & Patricia E Salkin, *Climate Change and Sustainable Development Law in a Nutshell* (St. Paul: Thomson Reuters, 2011) at 52.

176 For example, Toronto has an active NGO community that conducts research on environmental issues (e.g. Clean Air Partnership, Pollution Probe). However, not all Canadian municipalities have access to this NGO support (Poutiainen et al, *supra* note 47).

177 Swaigen, *supra* note 17 at 179.

178 Valiante, *supra* note 37 at 344-346.

adaptations, due to the cross-cutting nature of health adaptation. Municipalities are likely to implement many adaptations in enumerated domains of municipal jurisdiction which are indirectly related to health and climate change. Recall that health and climate change are incredibly broad subjects that are affected by a range of government roles and responsibilities. Often, initiatives that are not described as explicit health adaptations have implications for adapting to the health effects of climate change.¹⁷⁹ For example, urban tree-planting within a municipality can be considered a health adaptation.¹⁸⁰ Trees in urban areas can offset the heat-island effect to protect against extreme heat;¹⁸¹ improve air quality;¹⁸² provide shade to protect against UV radiation; and reduce storm runoff volume, therefore reducing flooding hazards and surface pollutant washoff.¹⁸³ In this way, tree-planting as part of municipal planning, over which municipalities have enumerated powers, could be considered a health adaptation. Whether an initiative is *intra vires* will depend on the type of initiative: an initiative falling within an area of recognized municipal authority (e.g. planning, sewage treatment) will likely be acceptable, but an initiative characterized as a matter within federal or provincial control (e.g. healthcare) or exceeding enumerated municipal powers will likely be *ultra vires*.¹⁸⁴

Adaptations enacted on the basis of enumerated powers may be further supported by omnibus provisions. Recall *Wallot*, in which the City of Quebec's regulations relied on both enumerated powers and omnibus provisions.¹⁸⁵ Municipal adaptations could likewise be supported by progressive provincial legislation recognizing municipal authority generally¹⁸⁶ or in the environmental field.¹⁸⁷

ii. Municipal Health Adaptations may be Supported by the Principle of Subsidiarity

The principle of subsidiarity is well suited to supporting local health adaptation undertaken by a municipality. The principle of subsidiarity was explained in *Hudson* as the proposition that:

[L]aw-making and implementation are often best achieved at a level of government that is not only effective, but also closest to the citizens affected and thus most responsive to their needs, to local distinctiveness, and to population diversity.¹⁸⁸

This principle is useful notwithstanding that provinces have jurisdiction over regulating

179 Poutiainen et al, *supra* note 47.

180 *Ibid.*

181 Per Bolund & Sven Hunhammar, "Ecosystem Services in Urban Areas" (1999) 29:2 Ecological Economics 293; H Akbari, M Pomerantz & H Taha, "Cool Surfaces and Shade Trees to Reduce Energy Use and Improve Air Quality in Urban Areas" (2001) 70:3 Solar Energy 295.

182 Bolund & Hunhammar, *supra* note 181; David J Novak, Daniel E Crane & Jack C Stevens, "Air Pollution Removal by Urban Trees and Shrubs in the United States" (2006) 4:3-4 Urban Forestry & Urban Greening 115.

183 Qingfu Xiao & E Gregory McPherson, "Rainfall Interception by Santa Monica's Municipal Urban Forest" (2002) 6:4 Urban Ecosystems 291.

184 Epstein 2010, *supra* note 28 at 89 (limits on exercise of municipal power); *Hudson*, *supra* note 11 ("In *Shell Canada Products*...the Court emphasized the local ambit of such power. It does not allow local governments and communities to exercise powers in questions that lie outside the traditional area of municipal interests, even if municipal powers should be interpreted broadly and generously" at para 53).

185 *Wallot*, *supra* note 156.

186 Ontario *Municipal Act*, *supra* note 110, s 9; *Community Charter*, *supra* note 112 at 7.

187 Quebec *Municipal Powers Act*, *supra* note 111, ss 4(4), 19.

188 *Hudson*, *supra* note 11 at para 3.

health care outcomes per se.¹⁸⁹ Many areas of municipal competence, such as sewage and zoning, are indirectly related to health adaptation. The principle of subsidiarity could be invoked to support municipal regulation in these domains, as was done in *Pub & Bar Coalition* where the principle of subsidiarity was cited to support municipal anti-smoking by-laws enacted pursuant to enumerated powers.¹⁹⁰

The principle of subsidiarity emphasizes how local governments are well-positioned to regulate local issues effectively. Adaptation is often characterized as a local matter: climate impacts tend to be felt and dealt with fairly locally. Top-down ‘one size fits all’ solutions do not apply to all localities, given each location’s particular vulnerabilities.¹⁹¹ Each location has unique exposure and sensitivity to climatic impacts, and unique abilities to adapt.¹⁹² Different locations are exposed to different climatic impacts, such as storm surges in Atlantic Canada and permafrost melting in Northern Canada. Different locations have varying levels of sensitivity to climate impacts: a location with less coastal development will be less sensitive to storm surges than a location with extensive development on the coast; a location with a lower population density will be less sensitive to permafrost melting than a location with a higher population density, all other things being equal. Different locations also have unique capacities to adapt due to local social, human, and financial capital. In this way, the principle of subsidiarity, which emphasizes the importance of local decision-making, is a suitable lens through which to view and justify local adaptation.¹⁹³

iii. Municipal Health Adaptations May Be Supported by the Precautionary Principle

Although potentially problematic, the precautionary principle may serve as an interpretive aid to support municipal health adaptations if operationalized in a meaningful way.

The SCC’s use of the precautionary principle as an interpretive tool in *Hudson* has been roundly criticized.¹⁹⁴ The principle cited by the SCC dictates that:

Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.¹⁹⁵

The SCC has been criticized for missing an opportunity to advance the development of this principle in Canadian law, leaving many questions unanswered.¹⁹⁶ Given the

189 *Constitution Act, 1867*, *supra* note 51, s 92(7).

190 *Supra* note 160.

191 “Appendix 1: Glossary” in ML Parry et al, eds, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2007) 869 at 883 (defines vulnerability as “a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its *sensitivity*, and its adaptive capacity”).

192 Wilbanks, *supra* note 19 at 284; McDonald, *supra* note 19 at 23-25; Glicksman, *supra* note 12 at 1164.

193 McDonald, *supra* note 19 (“Applying the principle of subsidiarity to adaptation policy and law, the vast majority of measures will have to be designed, implemented and enforced at the local scale, closest to where impacts are experienced and their effects must be minimized.” At 24, footnote omitted).

194 Valiante, *supra* note 37 at 354; Adkins et al, *supra* note 87 at 240.

195 *Hudson*, *supra* note 11 at 31 (quoting para 7 of the Bergen Ministerial Declaration on Sustainable Development (1990)). Note that there are various formulations of the precautionary principle, but all generally follow the notion “better safe than sorry” (Chris Tollefson, “Litigating the Precautionary Principle in Domestic Courts” (2008) 19:1 *J Envtl L & Prac* 33 at 35-36).

196 Valiante, *supra* note 37 at 353-54; Adkins et al, *supra* note 87 at 240.

principle's open-ended and ambiguous nature, how should the principle be implemented? What constitutes a "threat" of serious or irreversible damage, and what constitutes "serious" or "irreversible" damage? What kinds of measures are permitted in proportion to the given risk? To what domains does the precautionary principle apply? To what extent is it even possible to operationalize the precautionary principle?¹⁹⁷ This difficulty can be illustrated by a real-life example that involved a public park infested by non-native beetles. In this situation, the Canadian Food Inspection Agency cited the precautionary principle to justify its plan to cut and burn the trees in the park, in order to protect the lumber industry from the beetle invasion. Groups opposed to the plan *also* cited the precautionary principle to justify their proposal of no cutting and further research.¹⁹⁸ Clearly, the precautionary principle needs a framework to formalize its implementation and prevent its "arbitrary use."¹⁹⁹

While Canadian courts have not yet put forward a detailed framework, Australian courts demonstrate that it is possible to do so. At the Land and Environment Court of New South Wales, Chief Justice Preston outlined a framework to apply the precautionary principle in *Telstra Corporation Ltd v Hornsby Shire Council*.²⁰⁰ The principle had been invoked due to health concerns allegedly posed by radiation from a proposed cell phone station. Chief Justice Preston explained that two conditions must be met before applying the precautionary principle. First, there must be a real threat of serious or irreversible damage.²⁰¹ Factors to consider include: (a) the spatial scale of the threat; (b) the magnitude of possible impacts on natural and human systems; (c) the perceived value of the threatened environment; (d) the timing, persistence, and complexity of possible impacts; (e) the manageability and reversibility of possible impacts (i.e. whether feasible solutions are available); and (f) the level and basis of public concern.²⁰² The second precondition is whether the appropriate level of scientific uncertainty exists regarding the nature and scope of environmental damage.²⁰³ The appropriate level may be informed by a proportionality test—"where the relevant degree or magnitude of potential environmental damage is greater, the degree of certainty about the threat is lower"²⁰⁴—or a "reasonable scientific plausibility" test.²⁰⁵

If these preconditions are met, then the precautionary principle is triggered. The burden of proof shifts to the party seeking to implement a given project to show that the threat of serious or irreversible damage "does not in fact exist or is negligible."²⁰⁶ This shifting does not decide the outcome of the assessment; it affects only one factor, environmental damage, among many social and economic concerns that must be weighed in a risk assessment to determine the appropriate response.²⁰⁷ In this way, the principle "provides a structured way to determine the inputs to a cost-benefit analysis."²⁰⁸ The principle does not imply zero-risk responses; responses must be proportional to the risk at hand.²⁰⁹

197 Valiante, *supra* note 37 at 354-55; Tollefson, *supra* note 195 at 35-39.

198 Epstein 2001, *supra* note 37 at 64.

199 Valiante, *supra* note 37 at 356.

200 *Telstra Corporation Ltd v Hornsby Shire Council*, [2006] NSWLEC 133 [*Telstra*]. According to Tollefson (*supra* note 195 at 56), the best known case applying Preston CJ's framework is *Gray v Minister for Planning*, 152 LGERA 258, [2006] NSWLEC 720.

201 *Telstra*, *supra* note 200 at para 129; Tollefson, *supra* note 195 at 50.

202 *Telstra*, *supra* note 200 at para 131; Tollefson, *supra* note 195 at 50.

203 *Telstra*, *supra* note 200 at para 140.

204 *Ibid* at para 146.

205 *Ibid* at para 148.

206 *Ibid* at para 150; Tollefson, *supra* note 195 at 51-52.

207 *Telstra*, *supra* note 200 at para 154; Tollefson, *supra* note 195 at 52.

208 Tollefson, *supra* note 195 at 52.

209 *Telstra*, *supra* note 200 at paras 157, 166.

If the SCC similarly adopted such a framework, the precautionary principle could be a useful interpretive aid in assessing municipal health adaptation. Climate change poses serious threats to Canadians' health, but the precise impacts of climate change on health are fraught with some level of scientific uncertainty. For example, predictions about these impacts are typically given in probabilistic terms,²¹⁰ and it is difficult to predict the occurrence and impacts of extreme events. Furthermore, indirect impacts often interact synergistically, with potentially complex outcomes that are difficult to predict.²¹¹ For example, recall that the health burden of poor water quality induced by climate change may be exacerbated by behavioural changes related to climate (increased swimming).²¹² Given existing knowledge about the health impacts of climate change, the precautionary principle could serve as an interpretive aid to support health adaptation undertaken by municipalities—particularly “anticipatory” adaptation that seeks to mitigate impacts before a given stimulus.²¹³

iv. Municipal Health Adaptations May Complement Federal or Provincial Regulations Related to the Same Matter

Just as the By-law in *Hudson* contributed to a tri-level regulatory regime for pesticides, valid and well-designed municipal health adaptation would likely be permitted to complement federal and provincial initiatives related to the same health impact. The municipal adaptation would be subject to the dual compliance test for operability—but mere overlap between municipal adaptation and action by other levels of government would not render the municipal adaptation inoperable.

Indeed, health adaptation seems to be occurring as a “mosaic” today, with complementary efforts being undertaken at all levels of government, and actions at higher levels trickling down to inform actions at lower levels.²¹⁴ Complementary efforts should continue to be taken at different levels of government. First, health adaptation touches matters within the jurisdictions of all levels of government due to its cross-cutting nature.²¹⁵ Different aspects of a given health impact of climate change, like water quality, could interact with matters within federal, provincial, and municipal authority simultaneously, implying that adaptation to this impact would require an overlapping regulatory regime. Second, adaptation processes must occur at different levels of government to be effective. While local adaptations must be tailored to local conditions, they must also be guided by broader adaptation plans or strategies and supported by research and financial resources from higher levels of government.²¹⁶ For these reasons, an overlapping scheme of health adaptations should continue in Canada, as long as municipal health adaptation does not directly conflict with action by other levels of government.

v. Summary

Principles established in *Hudson* could help to assess the validity and operability of municipal health adaptations. First, although adaptations will likely be enacted on

210 Timothy R Carter et al, “New assessment methods and the characterisation of future conditions” in ML Parry et al, eds, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2007) 133.

211 Costello et al 2009, *supra* note 5.

212 *Human Health*, *supra* note 7 at 14.

213 Many writers distinguish “anticipatory” vs. “reactive” adaptations based on whether the action occurs before or after the stimulus (Smit et al, *supra* note 4 at 239).

214 Dickinson & Burton, *supra* note 71 at 104.

215 McDonald, *supra* note 19.

216 Paterson et al, *supra* note 173; Burch, *supra* note 173 at 293; Nolon & Salkin, *supra* note 175 at 52.

the basis of enumerated powers, omnibus provisions may provide additional support. Second, the principle of subsidiarity may justify local health adaptation undertaken by a municipality, since climate impacts tend to be felt and dealt with fairly locally. Third, municipal health adaptation may be supported by the precautionary principle as an interpretive aid if a practical framework exists to implement the principle. The precautionary principle would be particularly persuasive when the adaptation targets a complex and uncertain health impact of climate change, and when the adaptation is anticipatory. Finally, valid municipal health adaptations may complement federal or provincial adaptations related to the same matter. Municipal adaptation would be subject to the dual compliance test for operability, but mere overlap between municipal adaptation and action by other levels of government would not render the municipal adaptation inoperable. Overlap is particularly likely for health adaptations, which by their nature affect matters within different levels of government jurisdiction, and occur across scales. The existing adaptation mosaic evidences this overlap.

The validity and operability of a given municipal health adaptation must obviously be assessed on a case-by-case basis. Yet, these broad principles extracted from *Hudson* suggest that municipalities potentially have wide latitude in implementing local health adaptations.²¹⁷

CONCLUSION

Climate change will have serious impacts on Canadians' health, and adaptation at all levels of government will be required to cope with these impacts.²¹⁸ Division of powers issues could present unique challenges to successfully adapting to climate change. In particular, municipal health adaptations may be susceptible to constitutional challenges, since municipal authority is relatively limited. However, if recent provincial legislation and cases like *Hudson* are any indication, municipalities may have increasing latitude to regulate local environmental issues, including health adaptation.

Even if municipalities face fewer legal barriers to implementing health adaptation, other formidable challenges remain. If municipal leaders do not perceive their communities to be at risk from climatic changes—as is arguably the case in developed countries generally²¹⁹—or if they are uncertain about the extent of municipal authority to undertake health adaptation, then they may fail to act. Other salient questions include: To what extent do municipalities possess sufficient political will and funding to adapt?²²⁰ How do municipal adaptations interact with those by higher levels of government?²²¹ What is the most effective way to implement municipal adaptations?²²² These questions must be resolved for successful adaptation to occur across all levels of Canadian government.

217 Other barriers to effective adaptation may exist, such as political leadership, integration of actions between levels of government, and financial constraints (Burch, *supra* note 173).

218 Helene Amundsen, Frode Berglund & Hege Westskog, "Overcoming Barriers to Climate Change Adaptation - A Question of Multilevel Governance?" (2010) 28:2 *Environment and Planning C: Government and Policy* 276 at 277, 287.

219 Ian Burton et al, "From Impacts Assessment to Adaptation Priorities: The Shaping of Adaptation Policy" (2002) 2:2 *Climate Policy* 145 at 147; Johanna Wolf, "Climate Change Adaptation as a Social Process" in James D Ford & Lea Berrang-Ford, eds, *Climate Change Adaptation in Developed Nations: From Theory to Practice* (Dordrecht: Springer, 2011) 21 at 22.

220 Joel B Smith, Jason M Vogel & John E Cromwell III, "An Architecture for Government Action on Adaptation to Climate Change. An Editorial Comment" (2009) 95:1-2 *Climatic Change* 53 at 54; Wilbanks, *supra* note 19 at 283-284.

221 Smith et al, *supra* note 220 at 55; Wilbanks, *supra* note 19 at 283-284.

222 See Patricia Hania, "Climate Change and the Protection of Drinking Water in Ontario: An Opportunity to Adopt Adaptive Management?" (2011) 22:2 *J Envtl L & Prac* 167 at 170 (discussion of climate change adaptation implemented using adaptive management principles).