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THE POWER OF PREVENTION: THE EXTENT OF ENVIRONMENTAL AUTHORITY IN THE CONTEXT OF LOCAL GOVERNMENT

Colleen Thrasher & Jeremy Power*

ABSTRACT

This article attempts to delineate the scope of a municipality's legal power within the realm of environmental management. Part one of this article looks at the legal position of a municipal government in the Canadian constitutional framework. The authors note that municipalities are creatures of statute and their available powers are tightly prescribed by legislation. Part two of this article is a case study of the City of Toronto's efforts to manage pollution in the Great Lake region, particularly with respect to Lake Ontario. Despite the limits to a municipality's power, the authors argue that many effective pollution prevention strategies fall within existing municipal authority. The authors conclude that a municipality has the unique and powerful ability to adopt effective source-control bylaws being the source of a significant amount of pollution.

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INTRODUCTION

A discussion of a complex issue is best begun by acknowledging simple truths. Municipalities are local governments. Their stipulated purpose is often to provide good, accountable, and responsible governance on matters in their jurisdiction, as delegated by the province.¹ Municipalities are not environmental organizations with agendas of sustainability; but, given the breadth of environmental concerns that exist within a municipality's confines, from storm-water overflow to waste collection, a municipality must be positioned to deal with certain environmental issues. Howard Epstein suggests, "...it is legally possible for the senior levels of government to take full and exclusive responsibility for all environmental matters. But if they did so it would bring into question the very rationale for local government at all."² Indeed, local governments should possess some aspect of environmental authority.

Thus, this paper poses the following questions: what legal space does a municipality occupy in the Canadian context? And, given that position, what are the barriers to environmental authority exercised by a municipality? Although Epstein has characterized these questions as "decades-old,"³ the barriers to environmental management are relatively easy to establish when looking at where a municipality is situated in the Canadian constitutional framework; a municipality is only able to enact by-laws to regulate areas that the provincial government has stipulated are under municipal control. Not all environmental issues fall under municipal control. The first part of this paper explores that limitation further.

Given the "...enormous potential to transform how we live our lives through exercise of the appropriate powers at the municipal level",⁴ the second part of this paper presents concrete examples of municipal action in environmental issues by way of a case study of Great Lake pollution and an examination of the City of Toronto's successful efforts to manage sewage overflow. The case study suggests that municipalities have a strong preventative

¹ For example: *Municipal Act*, SO 2001, c 25, s 2.

² 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" (2009) 63 *MPLR* (4th) 56 at 58.

³ *Ibid* at 57.

⁴ *Ibid*.

edge to address pollution management within their existing delegated authority. The locality of the municipality makes a municipality poorly situated to deal with the widespread, international ramifications of Great Lake pollution; however, because many pollutants originate in the municipality, a municipality can effectively harness its control over things like sewer systems and waste discharge to prevent pollution at its source. An analysis of the municipality as a pollution preventer sheds new light on the power of a municipality and helps to answer the decades-old question of the scope of municipal environmental authority.⁵

THE LEGAL SPACE OCCUPIED BY A MUNICIPALITY

It is not the intention of this paper to examine the increasing delegation by Canadian provinces to municipalities of power to regulate the environment broadly, but to suggest that they currently have the capacity to be major environmental players within existing grants of authority. A municipality is best suited to regulate and make by-laws in the spheres of authority that have been delegated to it.⁶ As Howard Epstein states, "...given the typical array of powers now granted by the provinces to their municipalities, what is required is the dedication of local government political officials to use those powers in ways that are designed to advance a sustainability objective. Little more."⁷ After all, municipalities have some notable areas of authority and it is within those spaces that environmental initiatives have the capacity to thrive.

In Canada, the division of powers between the federal and provincial governments is dictated by the *Constitution Act*.⁸ Sections 91 and 92 of the *Constitution Act* list the respective subject matters over which the federal and provincial governments have jurisdiction. Yet, jurisdiction over a specific subject matter does not always motivate government to actually legislate in that area. Constitutional jurisdiction provides the capacity to create policy, but it does not

⁵ *Ibid.*

⁶ *Ibid* at 64.

⁷ *Ibid.*

⁸ *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (UK), 1982, c 11.

necessarily compel a government to take any particular course of action or to take any action at all.⁹

Municipalities, in turn, are given authority to act by the provincial government; they are considered to be *creatures of provincial statutes*.¹⁰ Thus, what a municipality can do and what a province can do are intimately related. For example, under Canada's *Constitution Act* the federal and provincial governments both have jurisdiction to pass laws with respect to water management issues.¹¹ Given that the *Constitution Act* does not specify which level of government has jurisdiction over the environment or water, jurisdiction is shared. In Ontario, the provincial government has taken the lead in regulating water quality and quantity management within provincial geographic boundaries. Ontario has enacted legislation that authorizes municipalities to administer aspects of water management.¹²

While a municipality may have authority to regulate some aspects of water management, others are beyond its purview. Municipal water management, for instance, may not include the management of water bodies themselves. It may seem obvious to conclude that the Toronto harbour belongs to the City of Toronto because it is in the City of Toronto, but the Toronto harbour is in fact governed by PortsToronto, a federal government enterprise.¹³ The geographic location of the specific water body is not necessarily the determining factor in setting the jurisdiction. The federal government has jurisdiction related to fisheries, navigation, federal lands, and international relations, including responsibilities pertaining to managing boundary water shared with the United States.¹⁴ The federal government also plays a significant role in setting national

⁹ Kathryn Harrison, *Passing the Buck: Federalism and Canadian Environmental Policy* (Vancouver: UBC Press, 1996) at 18, cited in Brenda Heelan Powell, *Environmental Assessment & the Canadian Constitution: Substitution and Equivalency* (Edmonton: The Environmental Law Centre (Alberta) Society, 2014) at 10, online: <<http://elc.ab.ca/media/94543/EACConstitutionBriefFinal.pdf>> [B Powell].

¹⁰ Stanley M Makuch, Neil Craik & Leisk Signe B, *Canadian Municipal and Planning Law* (Toronto: Thomson Carswell, 2004) at 75; Epstein, *supra* note 2 at 58.

¹¹ Provincial legislative powers include, but are not restricted to, areas of flow regulation, authorization of water use development, water supply, pollution control, and thermal and hydroelectric power development. Federal legislative powers include, but are not restricted to areas of fisheries, navigation, federal lands, and international relations.

¹² See *Municipal Act*, SO 2001, c 25, s 11(11).

¹³ "Governance" (2019), online: PortsToronto: <<https://www.portstoronto.com/portstoronto/governance.aspx>>.

¹⁴ B Powell, *supra* note 9.

environmental policies and standards. This highlights that the federal government has jurisdiction over a number of aspects relating to water governance, despite the fact that a particular harbour is ostensibly located within or adjacent to a city. It further demonstrates that a municipality's authority is consequently constrained; it cannot overstep the boundaries created by the division of powers and the provincial legislation.

As the above example makes clear, the division of powers does not grant one specific level of government exclusive authority to regulate with respect to environmental matters. Both provincial and federal levels of government have legislative authority regarding environmental concerns because environmental concerns are overlapping in nature. Further, municipal governments, which have their legislative authority granted to them by provincial governments, also have a major part to play. Take for instance the situation in *Spray-Tech*.¹⁵ The case involved a municipal by-law passed in 1991 by the Town of Hudson, Quebec, which tightly restricted the use of pesticides for non-essential (or cosmetic) uses within its boundaries. Chemlawn and Spraytech, both companies that routinely apply pesticides, had lost challenges to the by-law in two Quebec courts before appealing to the Supreme Court to strike down the by-law. The companies argued that municipalities did not have the power to control local pesticide use and that the by-laws conflicted with federal and provincial legislation.¹⁶ The SCC ruled on behalf of the town, and found that the town did have the authority, and that this authority did not conflict with federal or provincial legislation.¹⁷

The Supreme Court in *Spray-Tech* recognized the principle of subsidiarity noting 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."¹⁸ Justice Lebel did qualify this statement however, noting that "...no matter how laudable the purpose of the by-law may be, and although it may express the will of the members of the community to protect their local

¹⁵ 114957 *Canada L'ée (Spraytech, Société d'arrosage) v Hudson (Town)*, 2001 SCC 40, [2001] 2 SCR 241 [Spraytech cited to neutral citation].

¹⁶ *Ibid* at para 40.

¹⁷ *Ibid* at para 55.

¹⁸ *Ibid* at paras 3, 53–54.

environment, the means to do it must be found somewhere in the law.”¹⁹ While *Spray-Tech* can be seen as a win for the environmental authority of a municipality, it is also a reminder that a municipality’s authority is limited to what is stipulated in its governing provincial act. A municipality cannot behave as an agent for positive environmental change in *any way* that it chooses. Similarly, in *Enterprises Sibeca inc c Frelighsburg*, Justice Deschamps said that “...protecting the natural environment within a municipality’s jurisdiction cannot be regarded as an improper goal for a municipal council.”²⁰ As Epstein notes, however, the key part of Justice Deschamps’ statement is “within a municipality’s jurisdiction.”²¹

Consequently, most cases since *Spray-Tech* have turned on the statutory powers of municipalities to regulate local activities. In *Darvonda Nurseries Ltd v Greater Vancouver (Regional District)*,²² for example, the Region’s District Director successfully set more rigorous air quality standards for agricultural operations than the province-wide standard set in the provincial *Agricultural Waste Control Regulation*. The District adopted an air quality by-law pursuant to the *Environmental Management Act*, which allowed it to issue air contaminant discharge permits “...subject to requirements for the protection of the Environment.”²³ *Darvonda Nurseries* argued that it was exempt from the by-law standards because it complied with provincial standards.²⁴ The court concluded that the *Environmental Management Act* was intended to give the District authority to regulate the discharge of air emissions within its boundaries differently than in the rest of the province. Nothing in the Regulation specifically restricted the authority of the District to impose more stringent air emission limits, and it was possible for *Darvonda* to comply with both municipal and provincial standards.²⁵ In contrast, some federal or provincial statutes or regulations specifically bar municipalities from acting. In those cases, municipalities cannot rely on *Spray-Tech* to expand their powers.

¹⁹ *Ibid* at para 48.

²⁰ *Enterprises Sibeca inc c Frelighsburg (Municipalité)*, 2004 SCC 61, 2004 CSC 61.

²¹ Epstein, *supra* note 2 at 66.

²² *Darvonda Nurseries Ltd v Greater Vancouver (Regional District)*, 2008 BCSC 1251, 51 MPLR (4th) 56 [Darvonda].

²³ *Ibid* at para 2.

²⁴ *Ibid* at para 4.

²⁵ *Ibid* at para 114.

Spray-Tech has opened the door for municipal by-laws to control local environmental harm, but not very far. If there is no statute either permitting or forbidding municipal action, municipalities *may* be able to act, but only if they do not “displace or frustrate”²⁶ federal and provincial regulatory schemes. It would appear that municipal by-laws must be measured, tied directly to particular local harms, and minimize interference with the senior government regulatory framework. That municipalities are so constrained may be a disappointing conclusion, especially because, in her judgment in *Spray-Tech*, Justice L’Heureux-Dubé’s emphasised Justice La Forest’s statement from *Canada c Hydro-Québec* that “...the protection of the environment is a major challenge of our time. It is an international problem, one that requires *governments at all levels*.”²⁷ Municipalities are consequently important to environmental initiatives, but the extent of a municipality’s importance is unclear.

There is widespread acknowledgement in both the case law and the literature that municipal authority is limited to those specific areas that the provinces have extended to municipalities. The division of powers may constrain local governments that seek to make sustainably-minded decisions based on local environmental concerns. Despite being constrained, the environmental authority of a municipality may not be so meagre because municipal participation in environmental issues has been heralded as essential and courts are generally supportive of environmentalist by-laws falling within municipal jurisdiction. Rather, municipal environmental authority may be particularly powerful in some discrete legal spaces.

CASE STUDY

The Municipality of Toronto

The *City of Toronto Act* (“CTA”)²⁸ gives authority to the Toronto municipality and some of those spheres of authority are clearly environmental. Examples of

²⁶ *Spray-Tech*, *supra* note 13 at para 35.

²⁷ *Ibid* at para 3; Epstein, *supra* note 2 at 59.

²⁸ *City of Toronto Act*, SO 2006, c 11, Sch A [CTA].

environmental provisions include sections 104(1) and (2) of the *CTA* which indicate that the City of Toronto can pass by-laws "...prohibiting or regulating the destruction or injuring of trees in woodlands." Section 105.3(1) additionally gives the City of Toronto the authority to "provide for or participate in long-term energy planning," which is further defined in subsection 2 as including considerations for "energy conservation, climate change, and green energy." Water management and waste management are also mentioned at various points throughout the *CTA*.²⁹

Additionally, there are provisions which do not explicitly reference environmental initiatives, but their breadth provides for governance in some areas with environmental implications. For instance, municipalities have a long history of service provision related to sewage disposal which continues into present day.³⁰ The authority for by-laws related to sewage provision and maintenance comes from sections 8(1), (2), and (3) of the *CTA* which indicate general areas of authority for the City of Toronto.³¹ Section 8(1) specifies that "...[t]he City may provide any service or thing that the City considers necessary or desirable for the public."³² Sewers fall under the scope of that section as well as the breadth of other sections like "economic, social and environmental well-being of the City" or the "health, safety and well-being of persons."³³ While other municipal acts may expressly state that 'sewage' is an area for municipal governance,³⁴ it is widely known in Canadian law that sewage is considered to be a "core responsibility" for local governments.³⁵

The above non-exhaustive list is demonstrative of provisions which extend authority to the City of Toronto to regulate environmental issues. Some of the above provisions even specify that the City of Toronto has the discretion to direct their authority at 'green' or at sustainably-minded initiatives.³⁶ Yet, the presence

²⁹ See *Ibid* s 19, s 62(1), s 75 for example.

³⁰ See Philip Anisman, "Water Pollution Control in Ontario" (1971) 5 *Ottawa L Rev* 342.

³¹ See City of Toronto, by-law No 100-2016, *To Amend the City of Toronto Municipal Code Chapter 681, Sewers and Chapter 851, Water Supply* (4 February 2016) for an example in the preamble where the authority was derived.

³² *CTA*, *supra* note 28, s 8(1).

³³ *Ibid*, s 8(2).

³⁴ See *Municipal Act*, SO 2001, c 25, s 11(11); This Ontario Municipal Act does not apply to the City of Toronto as indicated by section 7.1(1).

³⁵ Epstein, *supra* note 2 at 73.

³⁶ *CTA*, *supra* note 28, preamble, s 108.

of those provisions does not mean that the City of Toronto is an agent for positive environmental change; a few provisions do not transform what is, in fact, a municipal government into a quasi-environmental organization, and nor should they. What the provisions do reveal is that the capacity and discretion to make sustainably-minded decisions are afforded to a municipality in some discrete legal spaces. It is therefore worth examining how environmental authority is capitalized upon. The City of Toronto's efforts to prevent pollution in the Great Lakes provide an interesting case study on this point. The City of Toronto's decisions in that context are notable because they are sustainably-minded and capitalize on municipal responsibility in the areas of sewage, waste- and storm-water management.

The case-study will be organized as follows: first, the problem of Great Lake pollution will be described in order to situate the interests of the City of Toronto; second, this study will explore the evidence indicating that the Toronto region has been making successful strides in its clean-up efforts; finally, and most importantly, efforts undertaken by the City of Toronto will be explored in order to assess the preventative mechanisms through which municipal authority can be harnessed effectively to achieve positive environmental outcomes.

Pollution in the Great Lakes and A Brief History of Municipal Involvement

The Great Lakes are freshwater lakes that span the middle-eastern region of the US-Canada border. The five Great Lakes are Lake Superior, Lake Michigan, Lake Ontario, Lake Huron, and Lake Erie. The Great Lakes are one of the largest sources of surface fresh water in the world, at 18%-20%, and they supply 84% of North America's fresh surface water.³⁷ The Great Lakes can thus be described as a significant ecological resource with huge impacts on the health and well-being of North Americans. Toronto sits on Lake Ontario's Northwestern Shore. It is one of the most populous cities in North America and it consequently

³⁷ Government of Canada, "Working together to protect the Great Lakes," (3 May 2017) (website) online: <<https://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=0E691E57-1>>; Michael Gilbertson & Andrew E Watterson, "Diversionsary Reframing of the Great Lakes Water Quality Agreement" (2007) 28:2 J Public Health Policy 201 at 201.

poses a burden for the shoreline and the lake because of the City's resource-demand and the contaminant potential arising from the massive sewage system and the industrial sector.

The problem of Great Lake pollution is intimately connected with storm water and sewage management at the municipal level. Municipal wastewater effluent is one of the largest sources of pollution, by volume, discharged into water bodies in Canada.³⁸ During "...periods of heavy rainfall or snowmelt," the extra water causes the water volume in sewer systems to increase, which leads to overflow and "...the release of untreated wastewater directly into the Great Lakes."³⁹ This sewage contains pathogens and pollutants from human and industrial waste which are harmful to human health as well as plant and animal life. Storm water run-off along streets also picks up contaminants which end up being discharged in waterbodies.⁴⁰

These pollutants and pathogens contribute to both environmental and financial strain due to the clean-up efforts they require.⁴¹ For instance, the problem of municipal sewage has resulted in multi-billion dollar investments over the past few decades, including over \$653 million committed by Ontario since 2007 to municipal wastewater infrastructure upgrades in the Great Lakes Basin.⁴²

Municipal sewage is also an obvious environmental hazard. Typical municipal sewage is a foul cocktail of biological and chemical pollutants, including human waste, micro-organisms, disease-causing pathogens such as viruses and bacteria, and hundreds of toxic chemicals and heavy metals.⁴³ Pollutants found in sewage include oxygen depleting substances (referred to as Biological Oxygen Demand or BOD), and suspended solids and nutrients, such as phosphorus and nitrogen-based compounds each of which carries a heavy ecological toll when

³⁸ Canadian Council of Ministers of the Environment, *Wastewater Effluent Development Committee* (December 2006), online at: <http://www.ccme.ca/assets/pdf/mwve_general_backgrounder_e.pdf>.

³⁹ *Ibid.*

⁴⁰ The City of Toronto, "Wet Weather Action Plan," (Toronto: August 2003) at 2.

⁴¹ Government of Canada, *supra* note 29.

⁴² Environmental Commissioner of Ontario, *Redefining Conservation: Annual Report 2009/2010* (Toronto, ON: Environmental Commissioner of Ontario, 2009) at 80.

⁴³ See generally: K Andersson et al, *Sanitation, Wastewater Management and Sustainability: from Waste Disposal to Resource Recovery*, (Nairobi and Stockholm: United Nations Environment Programme and Stockholm Environment Institute, 2016).

released into a fragile ecosystem, such as by rain or snow melt.⁴⁴ Toxic metals and synthetic organic chemicals — such as cadmium, lead, mercury, silver, zinc and PCBs — are commonly found in sewage and pose serious dangers to human health and the environment.⁴⁵ This sewage pollution affects biodiversity, water treatment costs, and the ability to enjoy beaches as a result of closures from high levels of contamination. In addition, pharmaceuticals, personal care products, and household cleaning chemicals are entering water resources through wastewater and are a growing cause for concern.⁴⁶

Unsurprisingly, the problem of water pollution due to sewage discharge in Great Lakes is not new. As early as 1910, conferences in Canada were called by the Canadian Commission of Conservation to discuss the human mortality rates stemming from pollutants and contaminants found in water, particularly in the Great Lake basin.⁴⁷ It was well-known that lakes near human settlements, including cities along the Great Lakes, were “fouled” by sewage in the early part of the 20th century.⁴⁸ In 1918, there was a successful nuisance action launched against the City of Toronto because the odours of the sewage disposal plant were “...so offensive as to injure the properties of the plaintiffs...to interfere with the reasonable enjoyment of the properties of the plaintiffs, and to be injurious to the health of themselves and their families.”⁴⁹ There was a break in the outfall pipe of a sewage disposal plant, the pipe which carried the sewage into Lake Ontario, and instead sewage was piling up in Ashbridge’s Bay at “...a rate of probably half a million gallons each 24 hours,” which led to the release of noxious odour.⁵⁰ Although the City tried to rely upon its municipal authority to construct sewage plants as provided in section 398 of the *Municipal Act*⁵¹ it was

⁴⁴ Environment Canada, “Municipal Wastewater Effluent Characterization and Loadings” (Last modified July 31, 2013), online: <<http://www.ec.gc.ca/eu-ww/default.asp?lang=En&n=4F4513C8-1>>.

⁴⁵ *Ibid.*

⁴⁶ Environment Canada, *Pharmaceuticals in the Environment – An Emerging Threat?* (2005), online: <http://publications.gc.ca/collections/collection_2017/eccc/En13-3-7-2005-eng.pdf>.

⁴⁷ Jennifer Read, Yves Gingras & Stephen Bocking, “A sort of destiny”: The Multi-Jurisdictional Response to Sewage Pollution in the Great Lakes, 1900-1930” (1998) 22 *Scientia Canadensis* 103 at 104–105, 108.

⁴⁸ *Ibid.* at 104.

⁴⁹ *Fieldhouse v City of Toronto*, 44 D.L.R. 392 at 392 (Ont Sup Ct) [Fieldhouse].

⁵⁰ *Ibid.* at 395.

⁵¹ RSO 1914, ch 192.

found that the City did not have a by-law authorizing the construction of the plant nor necessary approval from the Board of Health.⁵²

Beyond nuisance, there were other significant criticisms of the municipal effort at that time; doctors, in particular, concerned by the health crisis stemming from polluted water, wanted more provincial oversight of municipal water and sewage treatment.⁵³ In response, municipal officials argued that sewage treatment was a financial strain for the municipality budget and perhaps too costly to undertake.⁵⁴ While the provincial initiative to chlorinate drinking water effectively decreased disease epidemics and outbreaks in the 1920s,⁵⁵ the woes of the municipality budget, particularly given the Depression in the 1930s, stalled further development of sewage systems.⁵⁶ Additionally, by the 1930s, industrialization had hit and industrial waste was joining human waste in Toronto's sewers. The scale of this problem was outpacing the available funding; this eventually led to a change in Ontario's *Municipal Code* at that time to "...allow municipalities to charge users directly for the use of water and sewage services."⁵⁷

Despite these advances, the problem of Great Lake pollution stemming from wastewater and sewage overflow continues to plague modern Canadian and American cities. The "Great Lakes Sewage Report Card" concluded that municipal efforts were inadequate because wastewater "continues to be a major source of pollution."⁵⁸ This conclusion was reached after the Toronto-based Sierra Legal Defence Fund found that "20 cities on both sides of the border...together dump more than 24 billion gallons of untreated sewage into the lakes each year."⁵⁹

Sewage continues to be a major issue for the Great Lakes despite the fact significant progress has been made since the 1920s. Perhaps the most important

⁵² *Public Health Act*, RSO 1914, ch 218, s 94(1); *Fieldhouse*, supra note 47, at 405.

⁵³ Read, Gingras & Bocking, supra note 47 at 108.

⁵⁴ *Ibid* at 109.

⁵⁵ *Ibid* at 123.

⁵⁶ Environment Canada, Environment Ontario, Ministry of Natural Resources, & Metropolitan Toronto, *Clean Waters, Clear Choices: Recommendations for Action* (Ontario: Metro Toronto and Region Remedial Action Plan, 1994) at 72.

⁵⁷ *Ibid*.

⁵⁸ William J Angelo, "Report Says Tame CSOs To Keep Great Lakes Clean" (2006) 257:24 *Engineering News Reports* 18.

⁵⁹ *Ibid* at 1.

event in Great Lake water management history was the signing of the Great Lakes Water Quality Agreement (“1972 Agreement”) in 1972 by the US and Canada. It focused heavily on the problem of eutrophication, an algae-related issue that stems from nutrient loading caused by waste water and sewage discharge into waterbodies.⁶⁰ In 1978, the Great Lakes Water Quality Agreement was amended and Areas of Concern for pollution were identified – the Toronto region being one of those areas.⁶¹ In 2012, Canada and the US signed a new Great Lakes Water Quality Agreement (the “Agreement”), which reaffirmed their goals, updated issues pertaining to water quality, and superseded the original 1972 Agreement.⁶² Water quality issues addressed by the Agreement include the minimization of hypoxic or “dead” zones in the Great Lakes, the maintenance of algae levels, and the conservation of Great Lake species habitats.⁶³

The Agreement also addresses the role of municipalities. The preamble states that the involvement of municipalities is essential to achieve the “...objectives of [the] Agreement.”⁶⁴ Article 1, subsection 1(b) and section 2 both repeat that municipal efforts are required for the implementation of water quality measures. The importance of municipal involvement is obvious given that Article 4, paragraph 2(a)(i) specifies that municipal sources of pollution, such as urban drainage, must be targeted by the pollution abatement plans developed pursuant to the Agreement. Municipal governments must sit on a Great Lakes Executive Committee, alongside First Nations and provincial government representatives among others.⁶⁵

Consistent with the 1972 Agreement, the City of Toronto has been listed as an Area of Concern. Characterization as an Area of Concern stems from an evaluation of what the Agreement designates as “Beneficial Use Impairments,” (“BUIs”).⁶⁶ There are fourteen BUIs which include beach closings, degradation

⁶⁰ Gilbertson & Watterson, *supra* note 37 at 202.

⁶¹ *Ibid.*

⁶² *Great Lakes Water Quality Agreement*, United States and Canada, 7 September 2012, CAN TS 2013/8 at article 13 (entered into force 12 February 2013).

⁶³ *Ibid* at Annex 4, part B.

⁶⁴ *Ibid* at 3.

⁶⁵ *Ibid* at article 5, s 2(a): “the Parties shall co-chair the Great Lakes Executive Committee and invite representatives from Federal Governments, State and Provincial Governments, Tribal Governments, First Nations, Métis, Municipal Governments, watershed management agencies, and other local public agencies.”

⁶⁶ *Ibid*, Annex 1, part B.

of phytoplankton, and loss of fish and wildlife habitat.⁶⁷ The Agreement provides that both state and provincial governments must develop Regional Action Plans (“RAPs”) to identify the BUIs of a particular region, develop relevant remedial measures, and designate entities responsible for remedial measures.⁶⁸ Of the fourteen beneficial uses, the RAP for Toronto has identified five currently considered to be impaired in the Toronto region. Specifically, the Toronto region of Lake Ontario suffers from eutrophication and algae, beach closings, loss of fish and wildlife habitat, degradation of fish and wildlife populations, and degradation of aesthetics.⁶⁹

The Toronto and Region RAP is managed jointly by Environment & Climate Change Canada, the Ontario Ministry of the Environment and Climate Change, the Ontario Ministry of Natural Resources and Forestry, the City of Toronto, and the Toronto Region Conservation Authority. The first RAP for the Toronto Area of Concern was published in 1989. The first report defined the problem and environmental conditions of the Toronto region.⁷⁰ The second report addressed recommendations for actions to improve the impaired beneficial uses. It was published in 1994, by which point there were eight BUIs.⁷¹ The second report identified that of the three main pathways that pollutants take to the Great Lakes, storm water overflow and runoff were the most significant, most problematic, and most in need of remedial attention.⁷²

Storm-water overflow and runoff are problems which require action at the municipal level. In 1994, the RAP report indicated that methods for reducing the quantity of storm runoff must include standards for commercial buildings when dealing with storm water, the identification of illegal cross-connections in the sewer system, the improvement of storm-sewer systems, and land-use planning.⁷³ Many, if not most, of the identified methods for reducing storm water runoff are

⁶⁷ *Ibid*, annex 2, part B.

⁶⁸ *Ibid*.

⁶⁹ See Joanna Kidd, *Within Reach: 2015 Toronto and Region Remedial Action Plan Progress Report* (Toronto: Toronto and Region Conservation Authority, 2016), online: <<https://torontorap.ca/app/uploads/2017/08/2015-RAP-Progress-Report-final.pdf>> [Kidd].

⁷⁰ Environment Canada, Environment Ontario, Ministry of Natural Resources, & Metropolitan Toronto, *Stage 1: Environmental Conditions and Problem Definition* (Ontario: Metro Toronto Remedial Action plan, 1989).

⁷¹ *Ibid* at 83-82.

⁷² Environment Canada, *supra* note 56 at 14.

⁷³ *Ibid* at 17.

under the jurisdiction of the City of Toronto. For reference, Chapter 681 of the Toronto Municipal Code (the “Code”) is titled ‘Sewers’ and includes by-laws which dictate storm-sewer requirements⁷⁴ and specifications of an illegal sewer connection, as well as the enforcement mechanisms.⁷⁵

It is notable that the implementation of an international bilateral agreement requires so much action by municipalities. Municipalities are essential participants in Great Lake management. While the responsibility for curbing Great Lake pollution from sewage overflow falls to municipalities, ramifications of pollution affect wildlife, habitats, and geology under the jurisdiction of other levels of government. The second RAP breaks down the division of powers relevant to Great Lake water quality management in the Toronto region. While the efforts of municipalities are relevant to storm water runoff and overflow, improvements of the aquatic and wildlife community are delegated to NGOs and the Ministry of Natural Resources, for example.⁷⁶ While there are many players involved in Great Lake water quality management, it also clear that pollution prevention largely falls to municipalities to deal with by way of storm water and sewage management.

The following section will detail the success of the City of Toronto in its implementation of the RAP. To conclude this portion of the case-study, however, two things should be made clear. The first is that municipalities are essential participants in environmental projects that extend far beyond their boundaries. As stated in the 2012 Agreement, municipalities have a necessary role to play in water management, in conjunction with other levels of government. This is significant because it highlights that municipalities are not well-suited to tackle this environmental issue in its entirety. Environmental pollution and issues of ecological integrity are often cross-jurisdictional and multi-faceted, so while a municipality cannot adequately address all aspects of the issue, municipal participation is undoubtedly essential to the success of a broader project.

⁷⁴ The Toronto Municipal Code is a compilation of by-laws organized by subject. Each chapter is a by-law. City of Toronto, chapter 681, *Sewers* at § 681-4.

⁷⁵ *Ibid.*, § 681-14.2, § 681-11.

⁷⁶ Environment Canada, *supra* note 56 at 33.

Second, municipal participation may be particularly relevant at the level of prevention. For instance, municipalities are well-positioned to adopt preventative policies because it is within the confines of a municipality that sewage overflow occurs. By briefly examining the history of municipal involvement in Great Lake pollution and management, it can be concluded that municipalities have the capacity to act as agents of positive environmental change by way of participation in broader environmental initiatives and the adoption of pollution prevention techniques at the source.

Clean Up in the Toronto Region

The participatory and preventative nature of a municipality's efforts make it difficult to measure to what extent municipal involvement has resulted in the betterment of the Great Lakes region. Despite this problem of measurement and attribution, it is clear that the Toronto region of Lake Ontario has improved as judged by the BUIs. When the RAPs began, the Toronto region was indicated to have eight impairments; last measured in 2018, there are five or six with between one-two beneficial uses requiring further assessment.⁷⁷ The degradation of the benthos, restrictions on fish consumption, and restrictions on dredging activities have all improved to the point of no longer being listed as impaired uses. Compared to other Areas of Concern identified on Lake Ontario, Toronto is perhaps the most successful. The Toronto region has decreased its beneficial use impairments by 25-37.5%, and a comparably successful Area of Concern is the Hamilton Harbour which has decreased its impairments by about 28%.⁷⁸ The other Areas of Concern on Lake Ontario have either maintained the same number of impairments or increased.⁷⁹

While none of the above statistics can be attributed to municipal action alone, it should be noted that the City of Toronto's efforts have been specifically applauded. For instance, the most recent RAP progress report in 2015 indicated

⁷⁷ Toronto and Region, *supra* note 69 and Government of Canada, "Restoring the Great Lakes Areas of Concern" (27 October 2017) (website) online: < <https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/restoring-great-lakes-areas-concern.html> > provide different values, this paper lists "5-6" to highlight the discrepancy between the values.

⁷⁸ *Ibid.*

⁷⁹ *Ibid.*

that the City of Toronto's Sewers By-law, adopted by the City Council in 2000, has had a noticeable impact on the heavy-metal concentration in the "influent at wastewater treatment plants."⁸⁰ The Government of Canada has noted that the City of Toronto invested considerable sums of money into storm water management techniques, and has made "significant progress" on the priorities listed in the RAPs.⁸¹ Both the Sewers By-law, and the storm water management practices could largely be characterized as preventative mechanisms, as will be discussed further below – aimed to prevent both the influx of industrial and human waste into Lake Ontario.

Municipal Law and Pollution Prevention in the City of Toronto

The following section of this paper analyses four of the most notable initiatives that the City of Toronto has undertaken to address pollution in the Great Lakes; this section will identify the source of those initiatives in law and the legal implications of them, and it will also characterize the form of pollution control i.e. whether it looks like a preventative technique, abatement, or mitigation. This analysis will yield a strong picture of the City of Toronto as a pollution preventer thanks to its application of largely prevention-oriented by-laws.

Green Roofs

Section 108(1) of the *CTA* authorises the City of Toronto to pass by-laws requiring the construction of green roofs. A green roof is one "... that supports the growth of vegetation over a substantial portion of its area for the purpose of water conservation or energy conservation."⁸² Pursuant to this authority, on May 27, 2009, Toronto City Council adopted By-Law no. 583-2009, and the Code was amended to include Chapter 492. Article II imposes the following obligation:

Every building or building addition constructed after January 30, 2010 with a Gross Floor Area of 2,000 square metres or greater

⁸⁰ Kidd, *supra* note 69 at 43.

⁸¹ Government of Canada, "Toronto and region: Area of Concern" (20 February 2017), online: <<https://www.canada.ca/en/environment-climate-change/services/great-lakes-protection/areas-concern/toronto-region.html>>.

⁸² *CTA*, *supra* note 28, s 108(3).

shall include a Green Roof with a coverage of Available Roof Space in accordance with the following chart...and no person shall construct a Green Roof or cause a Green Roof to be constructed unless a permit therefor has been issued by the Chief Building Official.⁸³

At the lower end of the chart is a building with a Gross Floor Area of 2000-4999 square metres which is required to cover 20% of the Available Roof Space with green roof.⁸⁴ For reference, a 2000 square metre area could probably fit about 200 cars.⁸⁵ At the upper end of the chart is a building with Gross Floor Area of 20 000 square metres or greater which is required to cover 60% of the Available Roof Space with a green roof. These provisions, however, do not apply to industrial which are subject to a lesser requirement by the Green Roof By-Law. Article II, section 492-2 Part C specifies that industrial buildings constructed after January 30th, 2011 with 2000 square metres or more of Gross Floor Area should have either a 2000 square metre green roof or alternatively 10% of the Available Roof Space should be a green roof if that is smaller.

The penalty for failing to abide by these requirements is a fine not exceeding \$100 000,⁸⁶ but there is also a cash-in-lieu of green roof scheme should an Applicant not wish or be unable to adhere to the by-law.⁸⁷ The cash-in-lieu of green roof scheme states that when variances of exemptions are granted to the green roof requirements, the Applicant has to make a payment reflective of the cost of construction of a green roof equal to \$200/m² of the reduced or exempted area. The funds collected from the cash-in-lieu scheme are directed towards an Eco-Roof Incentive Program.⁸⁸

The Eco-Roof Incentive Program is a financial incentive program which encourages the adoption of green roofs in all buildings, but notably buildings constructed prior to the enactment of the by-law since the by-law *requires* the adoption of a green roof in new constructions.⁸⁹ The incentive program offers

⁸³ City of Toronto, By-law No 583-2009, *Green Roofs* (27 May 2009).

⁸⁴ *Ibid*, § 492-1: Available Roof Space means “the total roof area of the building or building addition” excluding some species areas like private terraces or spaces designated for renewable technology.

⁸⁵ Büro Berlin, “Size Ratios” (2016) online: <<https://www.2000m2.eu/ratios/>>.

⁸⁶ City of Toronto, *supra* note 83, § 492-21.

⁸⁷ *Ibid*, § 492-12.

⁸⁸ *Ibid*, § 492-12(C).

⁸⁹ *Ibid*, § 492-2 “Green Roofs Required.”

“...commercial, industrial, and institutional buildings \$50 per square meter of green roof, with a maximum grant of \$100,000, if vegetation covers at least fifty percent of the available surface area.”⁹⁰ Thus, while the By-Law creates a cash-in-lieu system which enables some buildings to opt-out of the green roof requirements, the money is used to fund another City of Toronto initiative which incentivizes the adoption of green roofs for all buildings. The green roofs, therefore, are incentivized by a maximum grant of \$100 000 for their adoption and non-compliance is disincentivized by a maximum penalty of \$100 000.

While technical in its application, the green roof By-Law is also very creative. Toronto is “...the first city in North America to adopt a by-law to require and govern the construction of green roofs on new development.”⁹¹ In addition to being innovative, the RAP classifies the green roof By-Law as a form of pollution “source control.”⁹² This classification may not be obvious, but source control refers to a preventative technique that focuses on avoiding “...the creation of hazardous substances” in the first place, “whether it be waste in an industrial process or products that leave toxic residues.”⁹³ Green roofs achieve pollution source control by storing water absorbed by the plant life.⁹⁴ As a result, during periods of heavy rainfall the green roof provides for greater storm water retention and prevents “overburdening storm water management facilities.”⁹⁵ Green roofs thus prevent pollution by preventing sewage overflow due to storm water, the main pathway pollutants take to the Great Lakes.

Green roofs are a fascinating example of a pollution prevention mechanism that the City of Toronto adopted while aiming to be a “global leader”⁹⁶ in the area. The ability of other municipalities in Canada to participate in pollution prevention by way of green roofs is more complicated. The City of Toronto was given the specific authority to create By-Laws mandating the construction of

⁹⁰ Catherine Malina, “Up on the Roof: Implementing Local Government Policies to Promote and Achieve the Environmental, Social, and Economic Benefits of Green Roof Technology Note” (2010) 23 *Georgetown Int'l Env't L Rev* 437 at 451.

⁹¹ Kidd, *supra* note 80, at 39.

⁹² *Ibid.*

⁹³ Paul R Muldoon, Marcia Valiante & Canadian Institute of Resources Law, *Toxic water pollution in Canada: regulatory principles for reduction and elimination with emphasis on Canadian federal and Ontario law* (Calgary: Canadian Institute of Resources Law, 1988) at 68.

⁹⁴ Malina, *supra* note 90 at 439.

⁹⁵ *Ibid* at 441.

⁹⁶ Tai Ziola, “The Growth of Green Building Feature: Real Estate Law” (2012) 37 *LawNow* 15 at 16.

green roofs in the *CTA*.⁹⁷ Tai Ziola explains, "...the *Building Code Act* generally prohibits municipal By-Laws from exceeding the requirements of the provincial building code," but the authority extended to the City of Toronto by way of the *CTA* largely bypassed this issue, provided that nothing in Toronto's Green Roof By-Law directly conflicts with a *Building Code Act* provision.⁹⁸ Other municipalities which lack the legislative authority to make By-Laws on green roofs are in a much more difficult place and are "...understandably hesitant to make any green building standards mandatory for third-party builders."⁹⁹

The implementation of source-control pollution prevention techniques, in the realm of green roofs and other eco-building requirements, may be possible in municipalities without the specific authority to create green roof by-laws. Ziola helpfully indicates other legal avenues that a municipality may take to create 'green' building standards including green roofs. The City of Strathcona in Alberta "...[is] experimenting with including green building criteria in the zoning requirements for certain sites. This strategy may include a requirement for a specific level of environmental performance being embedded in the permitted land uses for the property."¹⁰⁰ Another alternative could be the use of development agreements. Though Ziola does not use the label of development agreements, it is suggested that municipalities, could trade benefits like higher density or increased height allowances for 'green' building standards when dealing with developers.¹⁰¹

To summarize the discussion of green roofs: The Green Roof by-law in Toronto is the first of its kind in North America because it "*require[s]* the installation of green roofs for many forms of new construction,"¹⁰² and consequently, it provides an example and a goalpost for other municipalities when dealing with issues of pollution both in the Great Lakes, and elsewhere, due to storm water. From a pollution standpoint, the by-law is preventative in nature, because it is a form of source-control. While other municipalities may struggle

⁹⁷ *CTA*, *supra* note 28, s 108(1).

⁹⁸ *Building Code Act*, 1992, SO 1992, c 23.

⁹⁹ Ziola, *supra* note 96, at 17.

¹⁰⁰ *Ibid.*

¹⁰¹ *Ibid* at 18.

¹⁰² James D Brown, "Biophilic Laws: Planning for Cities with Nature" (2016) 34 Va Env'tl IJ 52 at 84.

with enacting a green roof by-law like the City of Toronto, due to a lack of legislative authority, other legal avenues like development agreements may provide for similar preventative results.

Mandatory Downspout Disconnection

A discussion of green roofs flows naturally into the City of Toronto's Mandatory Downspout Disconnection program because it is another example of source control.¹⁰³ Downspouts carry water from snow or rain from roofs into the sewer system by way of a drain pipe in the ground that is connected to the downspout. When there is an influx of storm water the sewer system may be overloaded, which results in untreated sewage overflow.¹⁰⁴ To avoid sewage overflow and subsequent lake pollution, downspouts can be disconnected and instead a connection can be added to "divert rainwater and snowmelt onto the ground."¹⁰⁵ A program of Mandatory Downspout Disconnection thus aims at preventing the source of the pollution, the sewage overflow, from ever manifesting.

As stated above, the City of Toronto has been granted the authority to regulate sewers and sewer usage by sections 8(1), (2), and (3) of the *CTA*.¹⁰⁶ The Mandatory Downspout Disconnection by-laws fall under subsection 681-11S of the Sewers chapter in the Code. Subsections 681-11S(3), (4), and (5) respectively indicate that no downspout may be connected to a combined storm sewer, a storm sewer that is recognized for basement flooding, or a storm sewer in any other part of the city.¹⁰⁷

Subsections (3), (4), and (5) have phased enforcement. Chapter 681 was amended in 2008 by By-law 1255-2008.¹⁰⁸ By-law no. 1255-2008 mandated that the by-law obligating the disconnection of any downspouts in areas of the city

¹⁰³ Kidd, *supra* note 80, at 39.

¹⁰⁴ City of Toronto, "Frequently Asked Questions About Mandatory Downspout Disconnection," (website) online:

<<https://www1.toronto.ca/wps/portal/contentonly?vgnextoid=cd5dc4fdc0b8f310VgnVCM10000071d60f89RCRD&vgnnextchannel=d490ba32db7ce310VgnVCM10000071d60f89RCRD#>>.

¹⁰⁵ *Ibid*.

¹⁰⁶ *CTA*, *supra* note 28.

¹⁰⁷ City of Toronto, *supra* note 74, §681-11S(3)-(5).

¹⁰⁸ City of Toronto, By-law No 1255-2008, *To amend City of Toronto Municipal Code Chapter 681, Sewers* (3 December 2008).

with combined sewers was to come into force four years after its original enactment in 2007.¹⁰⁹ Likewise, the by-law dictating that downspouts must be disconnected from storm sewers in parts of the city recognized for basement flooding came into force five years after its enactment on December 3rd, 2013; the final by-law dictating that all downspouts must be disconnected from storm sewers in all other areas of the city came into force on December 3rd, 2016.¹¹⁰

The phases gave all affected citizens a wealth of time to complete the required disconnection by the coming-into-force date. Research done in 2013, prior to the second deadline on December 3rd, indicated that there had already been 63% compliance with subsection (4) and 60.95% compliance with subsection (5).¹¹¹ By that point, there had been 79% compliance with subsection (3) which had already come into force.¹¹² Like with green roofs, there may be exemptions to the mandatory disconnection if it is not feasible or is hazardous.¹¹³ Additionally, there are penalties for non-compliance.¹¹⁴

Nancy Stoner has noted the importance of downspout disconnection, especially in conjunction with other ‘green’ building requirements like green roofs. She explains that while each disconnection may only divert a small amount of storm water, the cumulative effect of each disconnection is significant.¹¹⁵ The City of Toronto’s program is relatively new, and thus there is limited data on its success. The City of Portland, Oregon implemented a downspout disconnection program in 1993 and found that the policy resulted in one billion gallons of storm water being diverted away from the combined sewer systems every year, preventing overflow.¹¹⁶ Green roofs provide similar source control by way of storm water diversion and thus are similar preventative mechanisms to downspout disconnection, in addition to the fact they are both examples of ‘green’ infrastructure. Stoner indicates that the two source-control mechanisms

¹⁰⁹ *Ibid*, s 2.

¹¹⁰ *Ibid*, s 3(a)-(b).

¹¹¹ Kidd, *supra* note 80 at 39. Section (4) refers to areas of the city that have been identified as “Basement Flooding Study Areas” and section (5) refers to any other area of the city.

¹¹² *Ibid*.

¹¹³ City of Toronto, *supra* note 74, §681-11(S)(6).

¹¹⁴ *Ibid*, §681-14.1A(1).

¹¹⁵ Nancy Stoner, “Green Solutions for Controlling Combined Sewer Overflows” (2006) 21 Nat Resources & Env’t 7 at 59.

¹¹⁶ *Ibid*.

work very well together, as they can each handle some of the storm water burden, and thus their cumulative effect is greater.¹¹⁷ While this may be true, downspout disconnection presents far fewer legal conundrums given that it falls quite squarely within a municipality's authority over sewers. Consequently, downspout disconnection provides an example of a pollution prevention mechanism that can be adopted by municipalities with even more limited authority.

The extent of the legal difficulty with downspout disconnection is demonstrated in the case of *Moghaddam v Moghaddam*.¹¹⁸ In *Moghaddam*, the Ontario Municipal Board authorized the Applicant's requested building code variances as the variances pertained only to minimal increases in floor area and floor size of the subject property, and as such the variances satisfied all requirements.¹¹⁹ Two neighbours of the Applicant were given participant status. They expressed concerns that the disconnections were causing flooding in the backyards and in the streets of the neighbourhood. Additionally, they expressed concern that new homes, like the one the Applicant sought to build, would result in "troughs discharging water onto neighbouring properties, contributing to ongoing problems."¹²⁰ The Board expressed sympathy for these concerns, but indicated that it would be dealt with by the grading and drainage plan for the property, and did not impact the validity of the variances sought.¹²¹

It appears that while downspout disconnection is in its infancy, the City of Toronto may experience some additional drainage issues, which will need to be addressed by the drainage plans that are submitted to the City alongside building permit applications.¹²² Downspout disconnection, however, is considered to be a valid means of preventing storm water runoff and sewage overflow, and it is a further demonstration of the municipality's preventative capacity to address pollution control, particularly in the Great Lakes region.

Pollution Prevention Plans

¹¹⁷ *Ibid.*

¹¹⁸ 2015 CarswellOnt 7583 (Ont Mun B) [*Moghaddam*].

¹¹⁹ *Ibid* at para 11.

¹²⁰ *Ibid* at para 9.

¹²¹ *Ibid* at para 10.

¹²² City of Toronto, "Grading and Drainage Procedure Requirements," (website) online: <<https://www1.toronto.ca/wps/portal/contentonly?vgnextoid=1bd90680bd550410VgnVCM10000071d60f89RCRD&vgnnextchannel=3c82707b1a280410VgnVCM10000071d60f89RCRD>>.

The preventative capacity of a municipality may be most obvious when examining the City of Toronto's Sewers By-law mandating the adoption of Pollution Prevention Plans by businesses in Toronto. 'Pollution Prevention' as a concept is defined as, "...[t]he use of processes, practices, materials, products or energy that avoid or minimize the creation of pollutants and wastes, at the source."¹²³ Pollution Prevention Plans may be considered a form of source-control as well.

The by-law dictating the adoption of Pollution Prevention Plans is comprehensive. The by-law requires that Subject Section Industries or industries which discharge subject pollutants are required to submit a Pollution Prevention Plan within a year of commencing operations.¹²⁴ An updated plan must be submitted every six years unless the subject industry adopts the Best Management Practices which are approved by the Council of the City of Toronto.¹²⁵

Section 681-5C(2) in Chapter 681 lists the required contents of a Pollution Prevention Plan. Briefly, it should list the processes used by the industry which produce the pollutants, the pollutants themselves, a description of pollution prevention techniques related to sewer discharge, and three- and six- year targets for the elimination of subject pollutants.¹²⁶ The table of subject pollutants is listed in section 681-5L and it is updated periodically with new pollutants. For instance, in 2014 hexavalent chromium was added to the list of subject chemicals.¹²⁷ By-law number 100-2016 enacted on February 4th, 2016 replaced the subject pollutant table in Chapter 681 with a new, updated table.¹²⁸

The Pollution Prevention Plans have already been recognized for their success. The most recent progress report on the successful implementation of the RAP has indicated that, since the implementation of Pollution Prevention Plans at subject businesses, there has been a reduction in the amount of mercury and

¹²³ City of Toronto, *supra* note 74, § 681-1.

¹²⁴ *Ibid*, § 681-5A. Subject Section Industries are defined in § 681-1 as "[a]ny industry which carries out an activity listed in Appendix 1 to this article."

¹²⁵ *Ibid*, § 681-5B(1).

¹²⁶ *Ibid*, § 681-5C(2)(a)-(h).

¹²⁷ Kidd, *supra* note 80, at 43.

¹²⁸ City of Toronto, *supra* note 74, s 1(BB).

nonylphenol ethoxylates (NPE) found in the influent at wastewater treatment plants.¹²⁹ Further, environmental performance in all sectors has improved.¹³⁰

This is a preventative technique which differs from green roofs and downspout disconnection markedly. While the other preventative mechanisms examined were infrastructure-oriented, this is a method of source-control based on the management practices of the polluting industries themselves. By limiting the amount of pollutant that could be discharged into sewers, the problem of sewage overflow is also minimized, because sewage overflow becomes less harmful due to its contents. This is perhaps the most preventative of the municipal mechanisms examined thus far since it targets one of the most preliminary stages of the ‘pollution pipeline.’

In 1999, when the City of Toronto proposed a sewers by-law which mandated Pollution Prevention Plans, it was “...expected to set the precedent for other major cities in Canada.”¹³¹ Similar to the Green Roofs By-law, the City of Toronto was the first municipality in Canada “...to implement a Pollution Prevention reporting program under a Sewers By-law.”¹³² It is an excellent example of municipal engagement in pollution prevention. Interestingly, in 1999, the federal government passed a new *Environmental Protection Act* with a preamble that specified pollution prevention as an environmental priority in Canada.¹³³ In a serendipitous turn of events, the federal government made pollution prevention a priority and the City of Toronto proposed its own sewers by-law replete with prevention techniques. This is perhaps evidence of a municipality’s preventative edge; its ability to quickly direct local initiatives makes it an excellent site for pollution prevention.

Outfall Monitoring

The above initiatives are some of the City of Toronto’s most successful and most notable pollution prevention projects. Where there is non-compliance with

¹²⁹ Kidd, *supra* note 80 at 43.

¹³⁰ *Ibid.*

¹³¹ Dean Saul, “Canadian Legal Developments Foreign Law Year in Review: 1999” (2000) 34 Int Lawyer ABA 849 at 853.

¹³² General Manager of Toronto Water, Sewers and Water Supply By-laws 2015 Compliance and Enforcement Annual Report (Toronto: City of Toronto 2016) at 4.

¹³³ *Canadian Environmental Protection Act*, SC 1999, c 33; Saul, *supra* note 131 at 852.

the by-laws, however, the Toronto municipality also requires enforcement programs. The Outfall Monitoring Program is particularly relevant in this respect.

Outfalls refer to the “...exit points of the city storm sewers into the waterways.”¹³⁴ The Outfall Monitoring Program inspectors examine the discharge from the outfalls and monitor those outfalls that frequently discharge polluted water with the intent of eliminating the problem.¹³⁵ The contamination may be caused by illegal cross-connections where wastewater is inappropriately discharged into storm sewers. In the early 2000s in Boston, cross-connections were responsible for 70, 000 gallons of untreated sewage being drained into the Charles River from storm sewers every day.¹³⁶ In Toronto, the Outfall Monitoring Program seeks to find and correct any and all cross-connections to eliminate polluted outfalls. The program began in 2005.¹³⁷

The Outfall Monitoring Program is performed by the Environmental Monitoring & Protection Unit comprised of officers authorized under the *Provincial Offences Act* and the *CTA*.¹³⁸ Members of the Environmental Monitoring & Protection Unit serve Toronto Water, the City of Toronto’s water division. They are also “...responsible for administrative compliance and enforcement of the City of Toronto's Sewers and Water Supply by-laws.”¹³⁹

From the data collected by the Environmental Monitoring and Protection Unit, the General Manager of Toronto Water submits an annual report to the Public Works and Infrastructure Committee, indicating the number of illegal cross-connections discovered and the number of convictions under the Sewers and Water Supply by-laws.¹⁴⁰ In 2016 there were 26 convictions under the Sewers By-law resulting in \$365 250 in fines. One conviction under the Water Supply by-

¹³⁴ City of Toronto, “Outfall Monitoring Program” (website) online: <<https://www1.toronto.ca/wps/portal/contentonly?vgnextoid=fe545c546218f310VgnVCM10000071d60f89RCRD&vgnextchannel=fe4cfe4eda8ac310VgnVCM10000071d60f89RCRD>>.

¹³⁵ *Ibid.*

¹³⁶ Stacy D Harrop, “Municipal Separate Storm Sewer Systems: Is Compliance with State Water Quality Standards Only a Pipe Dream?” (2001) 31:3 *Environ Law* 767 at 800.

¹³⁷ *Ibid.*

¹³⁸ *Provincial Offences Act*, RSO 1990, c P 33; *CTA*, *supra* note 28, s 91(1).

¹³⁹ General Manager of Toronto Water, Sewers and Water Supply By-laws 2016 Compliance and Enforcement Annual Report (Toronto: City of Toronto, 2017) at 1.

¹⁴⁰ Toronto, City Council Decision, Wet Weather Flow Master Plan and Basement Flooding Protection Program Update, PW7.6, (21 September 2011) at para 14.

law resulted in a fine of \$7500.¹⁴¹ There were 41 cross-connections identified in the sewers where "...sanitary wastewater [was] misdirected to a storm sewer."¹⁴² 48 cross-connections were also fixed, and eight outfalls were delisted because the water discharged was of acceptable quality.¹⁴³ Since the program began in 2005, 710 cross-connections were corrected resulting in 138 outfalls being delisted.¹⁴⁴ It is clear that the Outfall Monitoring Program falls under the pollution methods of abatement and mitigation, rather than prevention. It is an end-of-pipe solution rather than source-control. The problem of outfall discharge is mitigated by enforcing the by-laws and cutting off illegal cross-sections in the sewers. Pollution is consequently abated in some receiving waters, including Lake Ontario, where the outfalls have been delisted.

Preventative, source-control by-laws appear to be the most effective mechanisms used by the City of Toronto to address pollution, but the use of by-laws consequently requires enforcement should those by-laws be ignored. It is both reasonable and desirable that a strong enforcement mechanism, like the Outfall Monitoring Program, pairs with pollution prevention by-laws.

CONCLUSION

In the Ontario Court of Appeal case, *Scarborough (Borough) v REF Homes Ltd* Justice Lacourcière characterized the municipality as "a trustee for the environment."¹⁴⁵ This characterization, without further explanation as to the trustee's duties or obligations, is meaningless. While this paper does not advance a theory of the municipality as a trustee, this paper does attempt to elucidate the extent of a municipality's environmental authority, or more colloquially, how a municipality may care for the environment. It does not do so by studying how a municipality's authority may be expanded. Rather, this paper examines environmental powers that fall within the established scope of municipal authority. By performing a case study of the City of Toronto's successful efforts

¹⁴¹ General Manager Toronto Water, *supra* note 139 at 1.

¹⁴² *Ibid.*

¹⁴³ *Ibid* at 1–2.

¹⁴⁴ *Ibid* at 5.

¹⁴⁵ *Scarborough (Borough) v REF Homes Ltd* (1979), 9 MPLR 255 at para 5, 10 CELR 40.

in the realm of Great Lake pollution management, it is clear that a municipality is well-suited to pollution prevention. Not only does the City of Toronto example showcase preventative techniques that may be adopted by other municipalities when dealing with Great Lake pollution, it additionally provides a keen picture of the municipality as a pollution preventer.

The lessons from the first part of this paper, that a municipality's authority is confined to the areas legislated by the province, remain true. But, the second part of this paper provides guidance as to how the municipality may properly harness the environmental authority that is extended to it: by way of source control.

The answer to the "decades-old question" of the "actual extent of municipal jurisdiction over environmental matters"¹⁴⁶ may be prevention. Beyond prevention, the ramifications of pollution and many other environmental issues extend beyond the borders of a municipality and, therefore, beyond the reach of its author.

¹⁴⁶ Epstein, *supra* note 2 at 57.