

**“From the Groundwater Up?”
Analyzing the Collaborative Drinking Water Source Protection Regime in Ontario, Canada in the
Context of Theorized Success Factors for Collaborative Water Governance**

Melissa Hughes

Thesis submitted to the University of Ottawa
in partial Fulfillment of the requirements for the
Master of Science in Environmental Sustainability

Graduate and Postdoctoral Studies
Institute of the Environment
University of Ottawa

© **Melissa Hughes, Ottawa, Canada, 2019**

Abstract

Collaborative approaches to the governance and management of drinking water sources have gained traction in recent decades as constituting a superior, bottom-up alternative to conventional and adversarial forms of governance, which have largely occurred from the top-down. Collaborative water governance enables local stakeholders to work together to more effectively manage water resources at the watershed level, in an inclusive manner that considers the interests of the various users of the resource. However, despite its promise, collaboration can be difficult to effectively achieve in practice, and scholars assert that some of the normative assumptions underlying the concept do a disservice to the difficulties that actors face in this setting. This research addresses this gap through an empirical analysis of the collaborative approach to drinking water source protection planning and governance that was implemented in Ontario through the enactment of the *Clean Water Act* in 2006. Three factors prevalent in the literature that are thought to underscore successful collaboration were chosen as the basis of this analysis: representation, public participation, and financial capacity. The author first analyzed the Hansard transcripts on the debates on the *Clean Water Act*, in order to identify the issues and concerns that were raised by Members of Provincial Parliament (MPPs) relating to these factors, and to examine how the legislation was formulated to include these factors in its collaborative mandate. This analysis revealed that elected officials appeared to view these factors as being important for the success of the program, and that in the end, the legislation was strengthened in terms of its collaborative governance elements, at least on paper. The author then conducted a second directed content analysis of the meeting minutes of three source protection committees across the province, to identify how these committees experienced representation, public participation, and financial capacity throughout their respective collaborative processes. This analysis revealed that some of the elements of the legislated process of collaboration, to which the committees were bound, appeared to exacerbate or in some cases lead to fundamental issues throughout the SWP planning processes. This led the author to ultimately question how much authority was delegated to these committees in actuality in order to carry out SWP on the ground, and thus how truly collaborative and “from the ground up” this program was truly intended to be. The findings suggest that greater attention should be paid in future research to the potential implications of particular design features of mandated forms of collaboration on the ability of collaborative organizations to meet their objectives, particularly when collaborative water governance is transplanted to other contexts.

Acknowledgements

I would like to express my deep appreciation for Professor Luc Juillet for his unwavering support for this thesis, which began even before my formal entry into the MES program, and his patience to allow me to figure out for myself the direction that this research would eventually take. I would also like to thank Professor Patrick Farfard and Professor Jamie Benidickson for not only agreeing to sit on my committee, but for taking the time to read so thoroughly this thesis and to provide such thoughtful insights for its improvement, and doing so in the summer months, no less.

I would also like to thank my family and friends for their important role in this process. To my parents: thank you for your undying love and support, and for pushing me to persevere in the face of setbacks. To my friends back home: thank you for the late-night calls, the long-distance charges, and the laughs in times of stress. Finally, I would like to share the gratitude that I hold so deeply in my heart for four special women from my MES cohort – you know who you are – for being there, unconditionally, through it all.

Table of Contents

Introduction.....	1
1.0 Literature Review.....	6
2.0 Water Governance in Ontario.....	40
2.1 Water Governance in Canada.....	40
2.2 Canadian Decentralization and Fragmentation	41
2.3 Drinking Water Governance in Canada	42
2.4 The History of Drinking Water Governance in Ontario.....	43
2.5 The Walkerton, Ontario Drinking Water Crisis.....	45
2.5.1 The Contamination of Walkerton’s Drinking Water.....	45
2.5.2 The Report of the Walkerton Inquiry: Findings.....	46
2.6 A New Provincial Direction for Drinking Water Governance.....	48
2.6.1 The <i>Clean Water Act</i>	49
2.6.1.1 The Role of the Minister of the Environment.....	49
2.6.1.2 The Role of Conservation Authorities.....	50
2.6.1.3 Source Protection Areas and Regions.....	51
2.6.1.4 Source Protection Committees.....	53
2.7 Summary.....	55
3.0 Methods.....	56
3.1 Methodological Approach.....	56
3.2 Rationale for Theoretical Framework.....	58
3.2.1 Interconnectedness of Factors.....	60
3.3 Hypotheses.....	61
3.3.1 Representation.....	61
3.3.2 Public Participation.....	61
3.3.3 Financial Capacity.....	62
3.4 Data Analysis.....	62
3.4.1 Analysis of the Legislative Debates Surrounding Bill 43.....	62
3.4.2 Analysis of Collaborative Water Governance Factors in the Ontario SWP Process.....	63
3.5 Case Studies.....	64
3.5.1 Rationale for Case Selection.....	64
3.5.2 Overview of Case Studies.....	65
3.5.2.1 Lake Erie Region Source Protection Committee.....	65
3.5.2.2 Ausable Bayfield Maitland Source Protection Committee.....	66
3.5.2.3 Trent Conservation Coalition Source Protection Committee.....	66
3.6 Limitations of Methodology.....	67
4.0 Legislative Debates Analysis: Findings and Results.....	69
4.1 The Ontario Legislature and Collaborative Water Governance.....	69
4.2 Representation.....	70
4.2.1 Representation in the Bill 43.....	70
4.2.2 Representation in the Debates.....	71
4.2.3 Representation in the <i>Clean Water Act</i>	74
4.3 Public Participation.....	78
4.3.1 Public Participation in Bill 43.....	78

4.3.2	Public Participation in the Debates.....	79
4.3.3	Public Participation in the <i>Clean Water Act</i>	81
4.4	Financial Capacity.....	82
4.4.1	Financial Capacity in the Bill 43.....	82
4.4.2	Financial Capacity in the Debates.....	82
4.4.3	Financial Capacity in the <i>Clean Water Act</i>	85
4.5	Summary.....	86
5.0	SPC Meeting Minutes Analysis: Findings and Discussion.....	90
5.1	Representation.....	90
5.1.1	Findings.....	90
5.1.1.1	Stakeholder Representation at SPC Meetings.....	90
5.1.1.2	Turnover of SPC Members.....	95
5.1.1.3	Proxies.....	98
5.1.2	Discussion.....	102
5.2	Public Participation.....	108
5.2.1	Findings.....	108
5.2.1.1	Public Consultation.....	109
5.2.1.2	Direct Engagement with Landowners and Residents.....	112
5.2.1.3	Public Perception.....	114
5.2.2	Discussion.....	116
5.3	Financial Capacity.....	121
5.3.1	Findings.....	121
5.3.1.1	Financial Capacity for SWP Planning.....	121
5.3.1.2	Financial Capacity for Municipalities.....	125
5.3.2	Discussion.....	128
Conclusion.....		133
References.....		142
Appendix A: Proxy Representation by Individual Lake Erie SPC Members.....		157

Introduction

Background

Drinking water is something that many Canadians take for granted as being readily available, easily accessible and, perhaps most importantly, undeniably safe. It is not often the case that we question the origins of our water, nor are we skeptical of the path through which it traverses to eventually flow through our taps to fulfill some of our most basic human needs. Moreover, Canadians are often told of the abundance of freshwater that we as a nation are so fortunate to possess; after all, Canada holds 20 percent of the world's freshwater resources, seven percent of which is renewable, constituting the third-largest supply of annual renewable freshwater across the globe (Government of Canada, 2018; Fraser Institute, 2018). Waterways in Canada are also considered to be relatively well-protected: an analysis of the water quality in Canadian rivers that was conducted between 2014 and 2016 revealed that the quality of the river water in approximately 82 percent of the monitoring locations across the nation could be considered fair to excellent (Fraser Institute, 2018).

The governance of the freshwater sources of drinking water in Canada is highly decentralized, owing primarily to the division of powers between the federal and provincial governments in the *Constitution Act, 1867*. In such a system, some administrative and decision-making functions are devolved to the provincial and local levels of government. In the case of water, provincial governments are considered to have pre-eminence for the management of water resources, notwithstanding some explicit federal responsibilities, because of their constitutional responsibility for property and civil rights and over the development, conservation, and management of non-renewable resources and the production of electricity from water (Hill et al., 2008; Johns & Rasmussen, 2008; Clancy, 2014). Municipalities have been further devolved the responsibility for water supply and water distribution (Bakker & Cook, 2011).

On the whole, scholars have advocated for the use of decentralized water governance due to its facilitation of regional variation and policy development at the level of resource use, rather than enacting standardized water legislation and policies from the centre (Hill et al., 2008; Dunn, Bakker & Harris, 2014). However, it has also led what many scholars believe to be some undesirable outcomes in terms of how this pristine resource is managed in Canada. Decentralized water governance in the Canadian context has been associated with vertical and horizontal fragmentation, resulting in the less-than-optimal management of water resources. This is particularly the case given the inherent nature of water as a common-pool resource, which presents a collective action dilemma that must be overcome, and also given the prevalence of non-point source (NPS) pollution, which is pollution that can emanate from

multiple sources within a single watershed and is thus highly dispersed both temporally and spatially (Patterson, Bellamy & Smith, 2014; Biddle, 2017; Baldwin et al., 2018).

In response to the limitations of traditional approaches to drinking water management, best practices have emerged. Principal among these is the multiple-barrier approach, which seeks to implement numerous barriers along the pathway of drinking water as it travels from its source to the tap in order to verify and improve its quality. The first barrier is referred to as “source water protection” and is considered to be of key importance, meriting its own focus at the watershed level. A strong global consensus has emerged around the notion that watersheds are the best units for managing water resources (Wang et al., 2016). Source water protection at this level seeks to protect the quality and quantity of watershed resources to reduce the burden placed on subsequent barriers, and to therefore change the traditional approach that has relied on end-of-tap treatment as the sole element of drinking water safety.

However, management at the watershed level is challenging, primarily because it requires cross-sector and cross-jurisdiction coordination. Collaborative approaches to water governance have emerged in more recent decades as being the preferred mechanism for confronting the challenges associated with the management of watersheds in a decentralized and fragmented environment, particularly at the watershed level. Collaborative water governance focuses on deriving policy solutions and making decisions at the local level, among members of the watershed in question and in a manner that balances the competing interests of these users to develop solutions that are responsive to local needs and conditions and more likely to be implemented effectively.

However, while collaborative governance is often considered an optimal solution to the inefficiencies and ineffectiveness associated with top-down, bureaucratic forms of governance in theory, in practice, collaboration can be difficult. Some scholars assert that the normative assumptions underlying the recent prevalence of collaborative arrangements do a disservice to the difficulties that are actually experienced among actors who participate in collaborative water governance, and that there needs to be more emphasis placed on studying these experiences in order to refine the designs and processes of collaboration at the watershed level.

This research addressed this gap through an empirical analysis of the collaborative approach to drinking water governance that was implemented in the province of Ontario in response to contamination-related fatalities that occurred in one of its smallest towns. In May 2000, *E. coli* and other bacterial contaminants entered the water supply of the small town of Walkerton, Ontario, leaving seven people dead and thousands seriously ill. Based on the recommendations from a public inquiry into the Walkerton events, the province adopted a locally-based, collaborative approach that was enshrined through the provincial *Clean Water Act* in October 2006, which had at its center a focus on source water protection (SWP) as a critical first barrier to the protection of drinking water sources contained within

watershed regions across the province. The *Clean Water Act* created multi-stakeholder source protection committees for each watershed region, with the intent that these committees would operate on the principles of collaboration in developing science-based drinking water source protection plans. This new approach to drinking water governance in Ontario provided a golden opportunity for the analysis of collaborative water governance in practice, and enabled the author to draw insightful and contributive conclusions in this regard.

Research Purpose and Objectives

In order to examine and further understand how some of the factors that are claimed to contribute to successful collaboration are experienced in practice, this research was guided by the following question:

“How do some of the theorized factors that are claimed to contribute to successful collaboration appear to emerge in practice in collaborative source water protection planning processes across different source protection committees in the Province of Ontario?”

This research focused on three factors that have been identified in the literature as being essential to successful collaboration: representation, public participation, and financial capacity.

The following research objectives were also pursued:

1. Identify the prevalent issues and concerns relating to representation, public participation, and financial capacity that arose in the legislative debates on Bill 43, “an Act to protect future and existing sources of drinking water and to make complementary amendments to other Acts,” to examine whether the debates on the selected factors appeared to impact the content and spirit of the final legislation and its regulations.
2. Explore how various source protection committees across Ontario experience representation, public participation, and financial capacity throughout their respective collaborative source water protection processes, and identify the benefits and challenges that appear to be associated with each of these factors in practice.
3. Identify any other issues or challenges that appeared to be faced by multi-stakeholder SPCs in their development of collaborative, watershed-based Source Protection Plans.
4. Identify areas for future research in the realm of collaborative water governance processes and procedures.

Based on the literature review that was undertaken, which led to a more detailed understanding of some of the factors that may lead to successful collaboration, the author anticipated the analysis to result in a few specific findings related to representation, public participation, and financial capacity. With regards to representation, some stakeholders are perpetually underrepresented in collaborative processes and are claimed to face real barriers to their sustained participation, such as financial and other capacity-

related issues. While the author found this largely to be true in the analysis, there were some dimensions of the representation literature that were not present in these findings. The author also found that representation was not valued the same way in practice as it was written to be in the *Clean Water Act*, and that this was true for participants from all sectors of the watershed that were represented on the committees.

In terms of public participation, the author expected to find that the legislated form of collaboration that was to be undertaken by committees would increase the effectiveness of public participation efforts by the committees, by institutionalizing this requirement and putting in place an accountability system for public consultation where one often lacks in collaborative settings. However, the findings actually revealed that some of the provisions of the *Clean Water Act* appeared to weaken the committees' ability to pursue meaningful public participation across the watershed regions in some cases, and that the committees at times had to pursue their own solutions to reach the wider public absent this Ministerial support.

Finally, in terms of financial capacity, it was expected that the committees would face barriers at both the participant and organizational levels in terms of obtaining adequate funding for the processes and outputs of the collaborative SWP planning program, as well as for the implementation of these outputs. What the findings revealed is that the committees did not appear to experience capacity-related issues for the actual process of collaboration itself, but faced substantial barriers in securing adequate funding to undertake some of the technical work for the source protection plans themselves, and also for the various local entities to properly support them in implementing new SWP policies.

The findings of the empirical analysis also revealed that some of the issues and concerns that were raised by MPPs during the legislative debates on Bill 43 came to fruition as being obstacles to effective collaborative governance at the watershed level by the source protection committees. Although the author found that the legislation on paper included some important provisions for collaborative governance to unfold effectively, the findings of subsequent analysis of the meeting minutes suggested that these elements did not necessarily live up to expectations in practice. In particular, while the legislation provided the novel opportunity for members of watershed regions to come together in pursuit of generating science-based policies for the protection of drinking water sources, certain elements of this legislation appeared to cause some fundamental issues for the committees that led to inefficiencies and ineffectiveness in the process. This led the author to ultimately question the true effectiveness of the *Clean Water Act* in enabling collaborative governance for source water protection planning and implementation in Ontario, and to ask whether the processes in practice truly emulated collaborative governance from the ground-up due to its institutionalized nature and ultimate Ministerial authority over the processes and their outputs. Moreover, the findings lend further support to the notion that

collaborative governance in practice is difficult and complex, and that mandated forms of collaboration do not necessarily eliminate these difficulties; in fact, in some cases, they can exacerbate them.

Outline

The thesis is organized into five chapters. Chapter 1 will review the literature on water governance, as well as the more recent collaborative approaches to water governance that have emerged from the limitations associated with conventional approaches. This literature review will conclude by outlining the main factors that are believed to contribute to the success of collaborative water governance, three of which provided the theoretical framework for the analyses in this thesis. Chapter 2 will provide an overview of water and drinking water governance in Canada before honing in more specifically on drinking water governance in Ontario, tracing the history of this governance in the pre-Walkerton era and providing details on the events that transpired on that fateful day in May 2000. The chapter will conclude with an overview of the post-Walkerton drinking water governance regime in Ontario, which principally involved the enactment of the *Clean Water Act* and its establishment of a collaborative governance-type approach to source water protection. Chapter 3 will outline the methodological approach used to conduct the two main analyses in this research: the analysis of the legislative debates on Bill 43, “an Act to protect future and existing sources of drinking water and to make complementary amendments to other Acts (the Clean Water Act)” and the analysis of the meeting minutes and other related documents from the source protection committees that were chosen as case studies for this research. Chapter 4 will summarize the findings of the legislative debates analysis and also include a discussion of each of the elements that were analyzed, as well as the apparent impact of these debates on the strength of the final design of the collaborative SWP process in Ontario. Chapter 5 will summarize the findings of the content analysis of the meeting minutes of the source protection committees, and also include a discussion of these findings and a reflection of these findings in light of existing literature on collaborative water governance, as well as in the context of the debates held on Bill 43. Finally, the conclusion will tie together the findings from both analyses and discuss how this research contributes to the literature to both challenge and advance the collective understanding of the mechanics of collaborative water governance, as well as the implications for future research and the application of this type of governance in other contexts.

1.0 Literature Review

Over the past few decades, the literature on collaborative governance has expanded considerably, and has a vast number of applications to the myriad fields in which collaboration has played an ever-increasing role in systems of governance, including in the management of water resources. This chapter will provide an overview of the existing scholarship on water governance more generally, as well as on collaborative water governance, in order to frame the subsequent empirical analyses on the collaborative source water protection program implemented in the Province of Ontario. It first reviews the literature on water governance and its typically decentralized nature, as well as the challenges that stem from this decentralization. It then delves into the concept of water as a common-pool resource, and further explains the challenges associated with managing it, given this characteristic. The chapter then nuances the discussion on drinking water governance more specifically, and outlines the problematic nature of non-point source pollution and the approaches that have emerged to more effectively manage diffuse sources of drinking water contamination at the watershed level. Following this overview, the chapter discusses more generally the concept of collaborative governance and provides a definition that will be used to frame the present research. It then explores more specifically the concept of collaborative water governance, as well as its emergence in more recent decades. The theoretical foundations surrounding collaborative water governance will then be explored, including some of the normative assumptions that underlie its prevalence in recent years; this is followed by a brief overview of some of the main challenges associated with its implementation in practice. The chapter concludes with a discussion of some of the most prominent factors that have been claimed to contribute to the success or effectiveness of collaborative water governance initiatives, which will serve to provide the theoretical framework for the empirical analyses that were conducted in the present research.

However, two important caveats must first be made. Firstly, it must be acknowledged that while the focus of the empirical analyses of this research that follow this literature review apply the methodology specifically to the protection of drinking water sources within a watershed context in Ontario, with an emphasis on non-point source pollution, it is difficult to disentangle drinking water completely from other uses of water resources and their management, governance and administration. As such, there is a tendency in the literature to conflate or intermingle terms that are themselves included within the broader realm of water resources management at the watershed level, such as water resources, drinking water, water issues, water management, and watershed management. To represent as closely as possible the current scholarship on the subject of collaborative water governance as a whole, this literature review references the theories and concepts as closely as possible to how they are used in this scholarship, despite the ultimate focus of this research on drinking water protection. Justification for

this comes from the well-recognized notion that source water protection is inextricably linked to the governance and management of the entire watershed, including land use practices, and that the benefits of increased protection to drinking water through watershed-based SWP will have more widespread ecological and other benefits for the watershed as a whole.

Secondly, there are strong arguments to the effect that drinking water is unique from other natural “resources,” particularly due to the notion that drinking water is a “right” and thus requires distinction from other resources such as fish, trees, minerals, and indeed even lakes and rivers. In 2010, the United Nations General Assembly recognized the explicit human right to water and sanitation, acknowledging that clean drinking water is absolutely critical to the realization of all human rights (United Nations, 2014). Benidickson (2018) reinforces this in the Canadian context, noting that a “powerful claim” made in 1910 by Senator Napoleon Belcourt that “the individual and the public as well, have an inalienable and infeasible right to pure water” remains to be realized today (p. 69). From a human rights perspective, drinking water perhaps should be considered as being distinct from “other” resources, given its essentialness for sustaining human life and the dire consequences that stem from compromised drinking water that would abrogate this right. The Ontario Government appeared to reinforce this perspective by enacting legislation focused specifically on drinking water protection, which used the international best practice of protecting the sources of drinking water from contamination, thus elevating the notion that drinking water is in fact an inalienable human right that requires its own legal framework for its protection. Again, however, while the distinction between drinking water and other resources can and should be made, and collaborative governance arrangements focused on drinking water protection should operate based on this notion, it remains difficult to isolate the impacts of cleaner sources of drinking water to fulfill that right alone. Rather, the watershed as a whole will both influence and benefit from the quality of drinking water, hence the conceptual inextricability of drinking water from the watershed and its various resources when managed within this context.

1.1 Water Governance and Decentralization

“Water governance” generally refers to the decision-making processes in which water is managed, and is specifically concerned with how these decisions are made, who makes these decisions, and the particular roles that these decision-makers play in doing so (de Loe & Murray, 2012). It also involves a range of political, organizational, and administrative processes through which water-related decisions are made and implemented, and how decision-makers are held accountable in both the development and management of water resources and in delivering various water services (Bakker & Nowlan, 2010). Distinct from water management, which refers to the operational, on-the-ground activities that are undertaken to regulate water and control its use, water governance primarily refers to

how decisions are made, and by whom, in this management (Bakker & Nowlan, 2010). Water presents a particularly challenging problem for public managers to effectively govern, given both its cross-boundary nature, which can result in its transcending of constructed jurisdictional boundaries, as well as its multiple and sometimes competing uses by various entities (Norman, Bakker & Dunn, 2011).

One of the core issues associated with water governance in the developed world is the concept of decentralization. In contrast to a centralized system of governance, in which decision-making power primarily resides with a central authority, decentralized governance involves the devolution of some administrative and decision-making functions to the regional and local levels of government (Robins, 2007). Decentralization has been a prominent theme in the public management literature since some of the earliest days of the field. Wallace Oates' decentralization theorem, first published in 1973, pronounced the advantages of decentralized governance from an economic perspective. His theorem is a normative proposition that establishes, on the basis of economic efficiency, a "presumption in favour of the decentralized provision of public goods with localized effects" (Oates, 1999). He states that sub-national governments are able to more efficiently perform their functions due to lower information costs and their greater accountability to the affected communities (Oates, 1999; Olfert, 2016). According to Bakker and Cook (2011), this economics-based argument appears to be evident in practice in Canada, where the costs for the federal government to act on environmental issues such as water resources management are simply too high, and the benefits too diffuse, to provide a real incentive for them to compete with the provinces on this endeavour.

In the broader field of natural resources management, the 1970s and 1980s were dominated by the presumption that the transfer of the ownership of water resources to large-scale, national governments was the single best method to ensure their effective governance (Andersson & Ostrom, 2008). Moreover, it was commonly contended that centralization led to more efficient natural resources management through the use of a single policy for a large collection of resources (Andersson & Ostrom, 2008; Mann & Gennaio, 2010). More recent assertions suggest that central government involvement in natural resources management provides a level of equity and an opportunity for the even dissemination of leading efforts (Hill et al., 2008).

However, many of these beliefs had largely been dispelled by the end of the twentieth century. In many respects, the prominence of decentralization in contemporary federal nations is believed to be a response to earlier efforts at centralizing public management issues, including natural resources management (Andersson & Ostrom, 2008). Scientific studies have challenged the previously dominant centralist view and provided empirical evidence that local user groups have successfully managed their natural resources through self-governance (Andersson & Ostrom, 2008). Many scholars now advocate for the use of decentralization in managing water resources in particular because it facilitates regional

variation and permits sub-national entities to enact policies that are responsive to local citizen needs and local environmental concerns, being situated at the level of resource use (Hill et al., 2008; Dunn, Bakker & Harris, 2014). Moreover, decentralization is viewed as being a vehicle to mobilize local interests, increase citizen involvement in decision-making and promote reciprocity and consensus among citizens and government entities (Dunn, Bakker & Harris, 2014). Governing at the local level in theory enables the use of local knowledge in the creation of rules for local common-pool resources, by those who have lived with and used a given resource system first-hand (Andersson & Ostrom, 2008). As such, these rules can elicit more appropriate responses to complex issues surrounding water by leveraging local knowledge and expertise at the watershed level, as well as through a deeper understanding of the biophysical attributes of watersheds, and changes to these conditions (Dunn, Bakker & Harris, 2014).

Despite the normative claims surrounding decentralization, many scholars argue that it is challenging to implement in practice. Among these challenges is fragmentation, which emerged as a concern primarily in the late 1970s (Cook, 2014). Fragmentation may occur as “duplication, overlap, or gaps in authority” (Cook, 2014, p. 193). It presents itself in cases in which the responsibility over water is divided among a number of sovereign jurisdictions, each with their own responsibilities and power over a component of the resource (Sproule-Jones, Johns & Heinmiller, 2008). Fragmentation results in a patchwork of water legislation, where water-related laws and policies are disjointed and inconsistent among different levels of government, as well as a duplication of efforts among government agencies and departments, a lack of intergovernmental coordination, poor data collection and sharing, and insufficient monitoring and enforcement (Bakker, 2007; Bakker & Cook, 2011; Cook, 2014). The prevalence of fragmentation in decentralized systems of water governance speaks to the need for centres of authority for water to become linked in order to pursue common policy and management goals in this realm (Clancy, 2014).

Thus, while decentralization is viewed favourably for managing water, including sources of drinking water, at the local level, it also presents some challenges. As the following sub-sections will explore, the reality of water as being commonly used among multiple users and the existence of diffuse sources of water pollution present additional barriers to the effectiveness of decentralized approaches to water governance, particularly given its often fragmented and disjointed nature when operating within a larger system of sovereign entities.

1.2 Water as a Common-Pool Resource

A basic understanding of water as a common-pool resource underlies much of the foundational theory that exists surrounding both its governance and management in a decentralized context. A common-pool resource is defined as “a natural or man-made resource from which it is difficult to exclude

or limit users once the resource is provided by nature or produced by humans,” and includes resources such as lakes, forests, and the stratosphere (Ostrom, 2005, p. 79). These resources are considered to be particularly difficult to govern effectively. Common-pool resources are both akin to private goods, in that they are subtractable, meaning that one person’s consumption or use of the resource necessarily diminishes another person’s consumption or use of it, and also to public goods, in the sense that there are high costs tied to excluding outside beneficiaries from consuming or using the resource (Andersson & Ostrom, 2008). These high exclusion costs are believed to be associated with the free-rider problem, which could threaten any efforts that are made to replenish or improve the long-term outcomes achieved from its use: if some individuals reduce or improve their use, the benefits generated from this are shared with other users, whether or not they cut back on their appropriation (Ostrom, 2005). The beneficial actions of some or many are thereby diminished by the free-riding actions of others.

One of the most well-established problems facing the users of a common-pool resource is the “Commons Dilemma,” otherwise known as the “tragedy of the commons” narrative. This narrative has become a household name in the commons literature since its inception by Garret Hardin in 1968. It has come to symbolize the environmental degradation that is expected to occur in a shared resource system when individuals, acting as rational beings seeking to maximize their own gain, put their interests before the interests of the common in their use of the resource, resulting in either its overuse or ruin (Hardin, 1968; Ostrom, 1990). The tragedy ensues when the individuals find themselves locked into a system that compels them to increase their utility (or use of the resource) without limit, “in a world that is limited” (Hardin, 1968, p. 1244). Hardin explicitly notes that water pollution is also considered a tragedy of the commons: while it is not associated with the consumption of the resource per se, it is the “putting into” (or contamination of) the resource that degrades its quality nonetheless (Hardin, 1968). The rational individual finds that his or her share of the cost of the waste that he or she discharges into the common water resource is less than the cost of purifying the wastes prior to this disposal; since everyone is expected to behave in this manner, all are locked into a system of “fouling [their] own nest” (Hardin, 1968, p. 1245).

The governance and management of common-pool water resources is therefore considered to present a collective action dilemma. Such a dilemma arises “when the interests of individuals run counter to the common interests of a group of individuals” (Baldwin et al., 2018, p. 212). In order for collective action dilemmas to be overcome, individuals of the group must work together to develop rules and norms to alter the problematic behavior (Baldwin et al., 2018, p. 212). Perhaps one of the earliest founding arguments for collective action is provided by Elinor Ostrom (1990), whose work on collaborative environmental governance was in part a response to the “tragedy of the commons” narrative. One of her fundamental arguments against this narrative was that even the most self-interested individuals can, under

the right set of conditions, cooperate in managing a common-pool resource unit in a way that maximizes the long-term interest of the community at large (Ostrom, 1990; Brower, 2016). This argument is largely based on the view that those at the local level, who are typically directly affected by the problem at hand, are the most knowledgeable and are motivated to manage the resource for long-term, communal gain (Brower, 2016).

As will be explained in the following sub-section, the protection and management of drinking water adds another layer of complexity to the governance of this common resource, and has led to the development of some international best practices in this regard which underscores the necessity its collective management by individuals and groups across a given water resource to achieve common objectives.

1.3 Drinking Water Governance

1.3.1 Sources of Water Pollution

Drinking water can become compromised by either surface water or groundwater contamination. Surface water is water that runs on and over the surface of the earth, and is contained in rivers, streams, and lakes, whereas groundwater is the subsurface water is stored beneath the surface in cracks and crevices of underground materials (creating aquifers), that accumulates (Johns, Sproule-Jones & Heinmiller, 2008). Groundwater pollution is distinct because, unlike surface water pollution, it is not visible and can therefore go unnoticed for extended periods of time (Johns, Sproule-Jones & Heinmiller, 2008).

There are two major categories of pollutants that stem from two primary types of sources that can impact the quality of surface or groundwater. Persistent pollutants are non-degradable or are slow to degrade when in the environment and cause irreversible damage, including sediments, water-soluble inorganic chemicals, organic chemicals, and suspended matter (Johns, 2008). Non-persistent pollutants, on the other hand, do degrade in water sources through chemical reactions or biological interactions and include such things as bacteria (including *E. coli* and other fecal coliforms), organic wastes, and nutrients (Johns, 2008). These pollutants stem from either point sources or non-point sources. Point source pollution emanates from a clearly delineable, geographically specific location, such as from a wastewater treatment plant (Johns, Sproule-Jones & Heinmiller, 2008). In contrast, non-point source pollution is generated from multiple sources across large catchment areas, and is usually linked to numerous anthropogenic activities (Margerum, 2007; Johns, Sproule-Jones & Heinmiller, 2008; Patterson, Smith & Bellamy, 2013; Morris et al., 2014). Common examples of NPS pollution include excess fertilizers, herbicides and insecticides runoff from agricultural and residential lands, bacteria and nutrients from livestock, defective septic systems and pet wastes, oil and toxic chemicals from urban runoff and energy

production, salt from acid drainage from abandoned mines and irrigation practices, and sediment from construction sites, crop and forest lands (United States Environmental Protection Agency, 2018).

Non-point source (NPS) pollution is a particularly difficult issue to address through traditional approaches to water management, such as regulations. There is no definitive causal link between polluters and those who are affected by the pollution, as it emanates from multiple sources rather than from one single delineable source (Johns, 2008). As such, NPS pollution is highly dispersed both spatially and temporally, and can span both urban and rural contexts, even within a given catchment area (Patterson, Bellamy & Smith, 2014; Biddle, 2017). Therefore, rather than simply having ecological components to its management, non-point source pollution is also inextricably tied to economic, social, and political interests.

Effectively managing NPS pollution thus requires a nuanced approach, one that transcends the challenges associated with decentralization and fragmentation and addresses both the multiple and competing uses of water resources, as well as the dispersed nature of the sources of its contamination. Watershed-based source water protection has been advocated to meet these very needs, and will be explored further in the sub-section below.

1.3.2 Watershed-Based Source Water Protection

A strong global consensus has emerged around the notion that watersheds are the best units for the management of water resources (Wang et al., 2016). A watershed is defined as an area of land in which all precipitation, received from either runoff or base flow (groundwater) sources, drains or “sheds” towards the same body of water, into connected system of different creeks, streams, rivers, and lakes (Clancy, 2014; Edwards, Williard & Schoonover, 2015). The term “watershed” is also often used interchangeably with drainage basin or catchment area. Watersheds reach their maximum size when they involve a stream or river that flows directly into an ocean or sea (Edwards, Williard & Schoonover, 2015). In Canada, there are five major continental watersheds that drain into oceans: the Hudson Bay, the Arctic, the Great Lakes-St. Lawrence, the Pacific, and the Gulf of Mexico drainages (Clancy, 2014).

Watershed-level management confronts an essential challenge of responding to all of the ecological characteristics of a given watershed, through the preservation of its integrity and functions and also assuring its continual flow of benefits and services (Borrini-Feyerabend et al., 2013). It reflects the increasing awareness that biodiversity can only be sustained by managing entire ecosystems, and facilitates the shift towards a place-based approach that enables a cross-sector and cumulative method for regulating and managing entire water supplies (Gibbons, 2001; Hill, 2013; Benidickson, 2018). Moreover, the “ecosystem orientation” offered through a watershed approach effectively collapses the “conceptual and jurisdictional boundaries” that have driven conventional approaches to water resources

management, and as such provides opportunities to address the existing governance challenges that are associated with fragmentation (Benidickson, 2018, p. 101).

One approach that has emerged to address the challenges associated with effective drinking water management, and specifically with non-point source pollution, is the multiple-barrier approach. Endorsed on the international stage by such institutions as the World Health Organization, the multiple-barrier (or multi-barrier) approach to safe drinking water involves taking a risk management approach for an entire water system, from the catchment to the consumer, that is based on the use of sound science and supported by effective monitoring (Davison et al., 2005). It is an integrated set of procedures, processes and tools that work together to prevent or reduce the occurrence of drinking water contamination from its source to the tap in order to reduce risks to the public health (Patrick, 2011; Dyck, Plummer & Armitage, 2015).

Source water protection (SWP) is a land-use and water planning exercise that is the first “barrier” in the multi-barrier approach to drinking water protection, which is followed by the subsequent barriers of water treatment, water distribution and storage systems, water quality monitoring, and responding to adverse conditions (O’Connor, 2002; Dyck, Plummer & Armitage, 2015). Source water is defined as untreated (raw) water from lakes, rivers, and streams from which water utilities or individuals draw for the purposes of drinking (Davies & Mazmuder, 2003). SWP is an approach to drinking water protection that aims to manage land-use activities in order to mitigate the risk of waterborne contamination at the water source (Patrick, 2011; Cook, 2015). Rather than solely relying on reactive, end-of-pipe solutions that merely treat the symptoms of poor water quality, SWP focuses on eliminating threats to water quality at their source (Conservation Ontario, 2001). The simple rationale behind source water protection is cleaner water at the source requires less intensive treatment prior to delivery, and is associated with lower chronic and acute health risks (Davies & Mazmuder, 2003). Moreover, protecting the sources of drinking water from contamination is often both easier and less costly than treating the water at the end of the pipe (Auditor General of Canada, 2014).

A focus on source water protection at the watershed level is considered to be a fundamental component to the effective implementation of the multi-barrier approach. For one, it makes sense for addressing NPS pollution, given that the boundary of any given watershed is defined by its topographic high point, or the location at which precipitation gathers before being drained towards bodies of water in the topographic low area (Edwards, Williard & Schoonover, 2015). An understanding of NPS pollution as typically being caused by rainfall or snowmelt that moves over and through the surface of the Earth, collecting natural and anthropogenic pollutants before finally depositing them into the bodies of water into streams, lakes, wetlands, or ground waters, reinforces the importance of watershed-based drinking water protection (Watershed Committee of the Ozarks, 2018). This is because any given water supply is

threatened not only by human activities that are local to that supply, but anywhere from within the watershed upstream of the intake point (Conservation Ontario, 2001). To more comprehensively ensure that all sources of pollution are accounted for in any water quality management strategy or policy, consideration of the watershed as a whole is arguably a necessity.

Despite the usefulness of watershed management for managing problems such as NPS pollution, the complex nature of watersheds also increases the complexity of their management. Watersheds generate numerous goods and services, each of which contain their own sets of inputs and outputs in its production (Andersson & Ostrom, 2008). Moreover, each of these goods and services may have its own discrete spatial ranges at any given time; this means that each of these goods may interact with other goods, and some goods and services may be more resilient in responding to disruptions in their production (Andersson & Ostrom, 2008, p. 74). Therefore, in addition to their physical characteristics, watersheds are also considered to have political importance, which becomes particularly of interest when undertaking water governance at the watershed level. Politically, a watershed defines a community of constituents or residents with a shared social experience, which partly involves sets of activities that impact the watershed (Clancy, 2014). Most watersheds are therefore characterized by multiple uses and heterogeneous groups of users and political actors who have little interaction with one another but have varying interests in the watershed in question (Sproule-Jones, Johns & Heinmiller, 2008). Moreover, watersheds are not politically self-contained, and rather are vulnerable to the impacts of market-driven and governmental forces external to the watershed itself, which can profoundly impact local watershed conditions (Clancy, 2014).

In a decentralized system of water governance, water management planning and implementation at the watershed level comes with a host of challenges. While a focus on SWP at the watershed level watershed challenges the appropriateness of using conventional boundaries for the protection of water resources, reconciling the mismatch between ecological and political or jurisdictional boundaries remains difficult (Ferreya, de Loe & Kreutzwiser, 2008; Clancy, 2014). This mismatch only becomes heightened in a decentralized system, wherein a shift in governance away from greater centralized control is necessarily associated with an increasing number of stakeholders involved in the governance process, with varying and often competing interests (Sproule-Jones, Johns & Heinmiller, 2008; Borrini-Feyerabend et al., 2013). Therefore, SWP must also respond to another key challenge, which is responding to the social characteristics of the watershed, through effectively addressing the differing and often conflicting interests of different social actors within the watershed (Borrini-Feyerabend et al., 2013).

Effective watershed management arguably requires the creation of systematic patterns of socio-political interaction within the watershed boundary (Ferreya, de Loe & Kreutzwiser, 2008). The success of watershed-based SWP is thus thought to largely be dependent on numerous factors, such as the use of

regulatory and non-regulatory tools that local governments and organizations can use to control and limit existing and future land use activities, as well as the capacity of municipalities to implement and monitor and enforce the use of these tools (Young, Plummer & Fitzgibbon, 2009). Such capacity is partially dependent on the state of institutional arrangements, which are the “structural and process arrangements for decision-making,” that include such things as policies, regulations, and political processes between authorities (Young, Plummer & Fitzgibbon, 2009).

The concept of collaborative governance has garnered much attention in the water resources management scholarship in recent decades as facilitating well the types of institutional arrangements that can reconcile the misalignment between ecological and artificial watershed boundaries, and mobilize action and implementation at the local level. The remainder of this chapter will go into greater detail on the origins and emergence of collaborative water governance, as well as the normative assumptions that underlie its prevalence in recent decades, the challenges with its implementation in practice, and the factors that are considered essential to its success.

1.4 Collaborative Governance

Collaborative governance is a prevalent topic in numerous policy areas. It has come to occupy a dominant space in the public policy and public management literatures, and is becoming more topical in numerous fields in these domains (Scott & Thomas, 2017). With this popularity has come myriad defining features of collaborative governance, and many attempts by scholars to succinctly define it. In defining this term, it is useful to first break it down into its two fundamental elements: collaboration and governance. “Collaboration” is defined as “an interaction between participants who work together to pursue complex goals,” based on their shared interests and a collective responsibility for completing tasks that cannot be completed by individuals acting alone (McNamara, 2016, p. 65). Collaboration is further understood as being distinct from cooperation and coordination, which are other terms used to describe interaction among partners, because it “requires much closer relationships, connections, and resources and even a blurring of the boundaries between organizations” (McNamara, 2016, p. 65). “Governance” has been broadly understood to encompass the regimes, practices, formal and informal rules, and social norms that constrain, dictate, and enable government activity (Lynn, Heinrich & Hill, 2000; Imperial & Kauneckis, 2003). Scholars have also asserted that governance does not just refer to one individual making a decision, but rather groups of individuals or organizations who are collectively involved in decision-making (Ansell & Gash, 2007). Thus, unlike “governing,” which implies direct forms of control through hierarchical structures, governance implies the use of networks that cut across various sectors in society and operating across different levels of decision-making (Newman et al., 2004).

Ansell and Gash (2007) derived from an extensive literature review a definition of collaborative governance that is widely cited in the collaboration literature, particularly in the public administration context. They define collaborative governance as “a governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets” (p. 544). Notably, Ansell and Gash (2007) differentiate between state and non-state actors in their definition, implying that collaboration that occurs only between state agencies is distinct from the involvement of non-state actors in the process; however, this is not elaborated upon by the authors (Williams, 2016). Nevertheless, this definition suggests that collaborative governance involves formal engagement of both state and non-state actors and provides an avenue for their deliberation on policy or management issues, and that this process should be based on consensus. It also asserts that collaborative governance covers numerous facets of the governing process, including planning, policy making, and management, and distinguishes itself from transactional and simple interaction relationships (Ansell & Gash, 2007; Scott & Thomas, 2017). The above definition of collaborative governance will be employed to guide this research, as it encompasses the elements of the collaborative processes employed by the case studies that will be examined.

1.4.1 Collaborative Water Governance

Collaborative modes of governance have been increasingly viewed as “modern necessities” for the sustainable and effective management of water resources (Harrington, 2017). The popular ideal type of collaborative water governance involves a shared understanding about water conditions and decisions that are made collectively among scientists, resource managers, users of the water system, and other applicable stakeholders about the management of the resource (Taylor, de Loe & Bjornlund, 2012). Like collaborative governance arrangements more generally, collaborative water governance can take many forms. Most common among these are watershed partnerships, advisory committees and cross-jurisdictional networks (Taylor, de Loe & Bjornlund, 2012). Frequently occurring within watershed or catchment areas, collaborative water governance arrangements are distinguished from general participatory processes due to their place-based nature (Sabatier et al., 2005; Taylor, de Loe & Bjornlund, 2012).

The following subsections of this chapter will explore the main theoretical underpinnings of collaborative governance, and collaborative water governance more specifically, in order to premise a further discussion on the asserted benefits of collaborative water governance as an arrangement for addressing complex water-related problems, including watershed-based SWP. This section will also go into great detail to flesh out the factors that are viewed as being imperative to successful collaboration,

which will serve as the primary theoretical lens through which the empirical analyses in this research will be undertaken.

1.5 The Emergence of Collaborative Governance

Collaborative governance is not a new phenomenon. Although it is often discussed in novel terms, the collaborative nature of public management has been examined by public administration scholars as early as the 1960s (McGuire, 2006). In the public administration field it can be observed as occurring in such forms as partnerships, contractual relationships, networks, and committees, among others, among managers in both private and public agencies as they jointly develop strategies and plans and produce services on behalf of their organizations (McGuire, 2006).

In the water field, collaboration also has a relatively long history. Borrini-Feyerabend et al. (2013) among other scholars assert that water has been managed collaboratively for centuries under different cultural contexts and geographic conditions, perhaps more than any other resource. In the context of contemporary, industrialized nations, the fundamental concept of increased community involvement and participation in decision-making arose more formally as early as the 1950s and into the 1960s and 1970s (Smith, 2008). In the 1980s, the emergence of negotiated rulemaking, a process through which state representatives and affected parties work together to reach consensus on a proposed rule, opened the floodgates to myriad policy innovations in the environmental policymaking arena, including in water resources management, which came to be broadly defined as collaborative institutions (Lubell, 2004; Copeland, 2006).

1.5.1 Increased Interdependence

Nonetheless, there are numerous perspectives that seek to explain the more recent prevalence of collaborative governance in many public management fields. One of these perspectives cites broader societal change over the past few decades as sparking the natural emergence of collaborative forms of governance. This school of thought asserts that, just as the agricultural age in the 18th century was characterized by the dominance of hierarchical governance arrangements, in which entities were ranked according to importance and subordinate to each other in this regard, and experiences in the industrial age promoted bureaucratic and command-and-control structures that idolized centralized authority, the presently evolving information age has given rise to a new type of public environment, one which has enabled the connection of people across organizational functions and boundaries (Agranoff & McGuire, 2003; McGuire, 2006; Bingham, O'Leary & Carlson, 2015). This has rendered organizational and sectoral boundaries to be "more conceptual than actual," which requires collaborative management

responses to complement, if not displace, existing bureaucratic processes (Agranoff & McGuire, 2003, p. 2).

In a world increasingly characterized by interconnectedness, each actor or organization in a given setting possesses a different type and level of knowledge and resources for fulfilling a particular public management task (Agranoff & McGuire, 2003). These differing capacities among actors results in their interdependency on one another (Agranoff & McGuire, 2003). This notion of interdependency is part and parcel of the Resource Dependency Theory, which is based on the premise that organizations need resources to sustain themselves (Holum, 2016). This results in organizations' activities being shaped by their dependency on external sources to obtain and maintain a consistent flow of resources (Holum, 2016). From the perspective of the Resource Dependency Theory, an increase in collaborative management strategies in the public sector is a direct response to the increased interdependencies that have resulted from the increased outsourcing of resource needs by various organizations (Agranoff & McGuire, 2003; Holum, 2016). The theory suggests that the greater the interdependence among organizations, both vertically and horizontally, the greater the need for collaboration (Agranoff & McGuire, 2003). The increased interdependency of socio-ecological systems has led to formidable political and scientific challenges in environmental governance (Brousseau, Dedeurwaerdere, Juvet & Willinger, 2012). There is therefore much literature to support the notion that collaborative governance has emerged in response to macro-level changes in how society is organized and how public problems must be managed as a result.

The recognition of such increasing interdependency among organizations and systems has been accompanied by the realization of the limitations of traditional bureaucratic structures of governance in managing these interdependencies. Thus, another tenant of this perspective suggests that traditional bureaucratic governance structures are simply incapable of addressing the type and scopes of public management problems that are seen today (McGuire, 2006). For much of the twentieth century, the scope of problems and the means by which to address them were within the capacity of a single government's jurisdiction and authority (Bingham, O'Leary & Carlson, 2015). However, as observed by Bressers, O'Toole, and Richardson (1995), "often, no organization of government possesses sufficient authority, resources, and knowledge to effect the enactment and achievement of policy intentions [;] instead, policies require the concerted efforts of multiple actors, all possessing significant capabilities but each dependent on multiple others to solidify policy intention and convert it into action" (p. 4). Moreover, political pressures and constitutional constraints can prevent central governments and their programs from producing an "optimal pattern of local outputs" (Oates, 1999, p. 1123).

One of the most common arguments for the emergence of collaborative approaches to the management of complex water-related problems is that these bottom-up approaches need be understood

as a tool or strategy of decentralized governance systems that has emerged out of the perceived limitations of traditional, top-down approaches to governance (Smith, 2008; Gruber, 2010). One of the foundational presumptions of the top-down approach in this field is that natural resources are best managed by “experts” who possess the scientific and technical capacity to objectively and efficiently manage a given resource on the basis of scientific analysis and the management options that arise from it (Smith, 2008). However, in recent decades, this presumption has been largely dispelled. It is instead argued that the management policies devised solely by “experts” are locally unsuitable or unaccepted by the communities in which they operate, as they lack any consideration of local social elements that, in addition to scientific and technical factors, result in better management (Smith, 2008).

Moreover, political trends in water resources management have called for increasingly stronger control at the local level over these resources, in order to bring local knowledge into the decision-making and management processes in order to improve their management (Margerum, 2007). For example, the wide range of land-use patterns across a given watershed has led to the widespread realization that collaborative approaches to water governance are better tailored than their top-down counterparts to local land-use planning activities, and the social, economic, political, and ecological implications of these activities, because they operate at the scale of the issues at hand (i.e. at the watershed scale) rather than being imposed from the provincial or federal scale (Hardy & Koontz, 2009; Biddle, 2017). An increased value in local capacities and local knowledge of the myriad factors that impact these issues is thus viewed as a pivotal reason for the increased use of collaborative governance in this field.

1.5.2 A Response to Adversarial Policymaking

Collaborative governance is often further understood to have been introduced as an alternative to adversarial policymaking (Ansell & Gash, 2007; Scott & Thomas, 2017). While stakeholders in collaborative governance arrangements might have an adversarial relationship with one another, one of the goals of collaborative governance is to transform such adversaries into sustainable, cooperative relationships (Ansell & Gash, 2007). Moreover, whereas non-state actors remain “outside observers” of decision making and thus merely attempt to influence agency decision makers in adversarial processes, collaborative governance shifts the “ownership of decision making” from the agency to the non-state stakeholders who act collectively to address the problem at hand (Ansell & Gash, 2007, p. 559). Collaborative governance thus provides an opportunity for competing viewpoints from formerly adversarial stakeholders to be collectively addressed as they work towards a common public policy goal, rather than pitting these adversaries against one another in a winner-takes-all scenario.

1.5.3 “Wicked” Problems

These and other cited limitations of traditional, top-down and sometimes adversarial forms of governance for managing public problems in an increasingly interdependent world become exacerbated in the context of the wicked problem. First coined in the planning literature in 1973 by Rittel and Webber, wicked problems include nearly all public policy issues. Unlike “tame” or “benign” problems, which are clearly defined and have a concise mission and potential solutions, wicked problems “defy efforts to delineate their boundaries and to identify their causes, and thus to expose their problematic nature” (Rittel & Webber, 1973, p. 167). Wicked problems are plagued by incomplete or inconsistent information, rapidly changing environments, and complex interdependencies (Emerson & Nabatchi, 2015).

In the industrial age, efficiency dominated the government planning world and it was thus arguably relatively straightforward to obtain consensus on the nature of problems, as these problems were responsive to technical solutions by bureaucratic organizations (Agranoff & McGuire, 2003). However, the “conceptual webs” of wicked problems are notoriously ambiguous, and exist in a social context wherein a number of publics is politically pursuing a variety of policy goals (Rittel & Webber, 1973, p. 168). Unlike conventional problems, wicked problems are never “solved” in the conventional sense of the term; the goal for policy and decision makers is that they are well-managed, and that stakeholder groups are assisted in negotiating and finding a commonly understood and shared meaning about the problem, and how to address it (Rittel & Webber, 1973; Head, 2018). They therefore have no clear “solutions” but merely “temporary and imperfect resolutions” (McGuire, 2006).

Rittel and Webber (1973) established substantial grounds for doubting the effectiveness of scientific and technical approaches to public policy, both in terms of their ability to capture the complex fields in which wicked problems evolve and to develop suitable policy responses (Head, 2018). Many subsequent authors have stated that the nature of wicked problems makes them difficult, if not inconceivable, for any one organization to effectively manage and fund, and are thus generally resistant to policymaking and implementation by rigidly process-heavy bureaucratic institutions and therefore necessitate the use of alternative management solutions that are more flexible, inclusive, adaptable, and can be implemented with greater speed (Agranoff & McGuire, 2003; McGuire, 2006; Lach, Rayner & Ingram, 2005; Morris et al., 2014; Biddle, 2017). In fact, some authors suggest that practically no contemporary wicked problem has been addressed in the public management field without reference to intersectoral collaboration (Bingham, & O’Leary, 2015).

Wicked problems are no strangers to the water field. Many, if not all, issues related to water have increasingly become characterized as being wicked in nature, which has heightened the search for alternative forms of governance for their effective management (Lach, Rayner & Ingram, 2005). A prime example of a wicked water problem is the management of non-point source pollution at the watershed

level (Patterson, Bellamy & Smith, 2014). Collaborative governance has been widely thought to present one viable approach to addressing this issue. Scholars argue that the myriad differences in values and interests that may exist at any given time in a particular watershed cannot be settled by purely “positivist science” and traditional bureaucratic mechanisms, and that they rather should be managed through stakeholder collaboration processes that includes open debate and conflict resolution (Head, 2018, p. 3). Collaborative strategies are (normatively) holistic and participatory processes that involve a wide number of stakeholders who engage in joint decision-making for the mitigation of issues, such as NPS pollution or those related to water quantity (Ferreya, de Loe & Kreutzwiser, 2008). It is therefore believed that collaborative water governance can achieve congruence between jurisdictions and complex public problems, thus meeting larger-scale objectives that would be difficult for a single organization, displaced far from the locale of socio-ecological action, to meet (Biddle, 2017).

To summarize, collaborative governance is a concept that describes the process of facilitating and functioning in multiorganizational arrangements to solve public management problems that cannot be (easily) solved by single organizations (Agranoff & McGuire, 2003). It involves the convening of a “purposive relationship” among actors and organizations that is intended to solve a given problem by developing a solution within a given set of constraints, such as time, money, and knowledge (Agranoff & McGuire, 2003, p. 4). Collaborative governance has become increasingly more prevalent and robust in recent decades, partially in response to the limitations of hierarchical approaches to public management (Gerlak, Heikkila & Lubell, 2013). Its increasing use is widely believed to mark a paradigm shift away from the largely hierarchical and technocratic approaches to government of the twentieth century towards those that are more integrated and participatory, and that utilize joint decision-making approaches (Borrini-Feyerabend, et al., 2013; Bingham, O’Leary & Carlson, 2015; Grassini, 2017). The following sub-section will explore the theoretical foundations of collaborative water governance.

1.6 Theoretical Foundations of Collaborative Water Governance

Collaborative governance scholarship provides a wealth of normative foundations supporting the appeal of collaboration for addressing complex, multi-sector water governance problems. Perhaps one of the earliest of these foundations is provided by Elinor Ostrom (1990), whose work on collaborative environmental governance was in part a response to the “tragedy of the commons” narrative. One of her fundamental arguments against this narrative was that even the most self-interested individuals can, under the right set of conditions, cooperate in managing a common-pool resource unit in a way that maximizes the long-term interest of the community at large (Ostrom, 1990; Brower, 2016). This argument is largely based on the view that those at the local level, who are typically directly affected by the problem at hand,

are the most knowledgeable and are motivated to manage the resource for long-term, communal gain (Brower, 2016).

Collaborative governance finds some of its roots in broader concepts of democracy. Public administration scholars have touted collaborative governance as “a new paradigm for governing” in democratic systems (Emerson, Nabatchi & Balogh, 2012, p. 3). Specifically, collaborative processes are argued to be more democratic than their bureaucratic counterparts (Koontz & Thomas, 2006; Ansell & Gash, 2007; Borrini-Feyerabend et al., 2013). Whereas adversarial models are based on a “winner takes all” mentality, collaboration is intended to facilitate a democratic process of decision-making, for which consensus is reached and multiple interests are considered. Moreover, collaborative governance is generally premised on the notion that it allows for the inclusion of multiple and diverse perspectives in order to inform decision-making (Margerum & Robinson, 2015). Perceptions of collaborative governance as “governance-beyond-the-state” indicate that when the state, capital, and civil society domains can become integrated through collaborative processes, the inclusiveness and democratic nature of policy-making and implementation are increased (Shilling, London & Liévanos, 2009). Other authors, such as Borrini-Feyerabend et al. (2013) contend that collaborative management embodies the democratic method, as collaborative processes are based on the acceptance of various societal entitlements and the gathering of the most robust information available, in order for different stakeholders, possessing different interests and concerns, to negotiate potential solutions. In his empirical analysis of watershed partnerships in California and Washington state, Leach (2006) revealed that these collaborative processes were successful in achieving deliberativeness and empowerment, which are two recognized democratic ideals. Moreover, state-mandated, or state-sponsored, collaborative processes in particular are believed to be especially democratic, because the state is believed to offer to the collaborative process the democratic legitimacy that it would otherwise lack (Kallis, Kiparsky & Norgaard, 2009).

Collaborative governance is also lauded for resulting in higher-quality policy outputs than conventional approaches to governance (Margerum, 2007; Fish et al., 2010; Scott & Thomas, 2017; Brisbois, Morris & de Loe, 2018). The intended deliberative nature of collaboration, through its engagement of a diverse set of participants and focus on deliberation among these actors in decision-making, is said to improve the quality of the decisions that are reached in numerous ways (Hui, Ulibarri & Cain, 2018). These include stakeholder satisfaction with these decisions as well as the perceived legitimacy and salience of these decisions (Hui, Ulibarri & Cain, 2018). Moreover, Scott and Thomas (2017) suggest that it is the “intermediate outcomes” of collaboration that act as the “causal mechanisms by which collaborative tools can improve policy outcomes” (p. 195). These intermediate outcomes, including increased social learning and trust building among participants, building consensus around an issue, and increased legitimacy, describe the development of trust and social interaction, as well as the

development of outputs or products, such as agreements, creation of shared knowledge and information, and innovation (Carr et al., 2012). While these intermediate outcomes can represent tangible outputs of collaboration in and of themselves, they are also believed to improve policy outcomes by improving the quality of policy outputs, as will be described in greater detail later in this chapter (Ansell & Gash, 2007; Scott & Thomas, 2017).

This section outlined some of the normative assumptions surrounding the perceived effectiveness of collaborative water governance. The following sub-section will present some of the challenges in the literature to these assumptions based on some work that has been done to examine the workings of collaborative water governance in practice.

1.7 Collaborative Governance in Practice

Despite its strong theoretical underpinnings, moving collaborative water governance, specifically in the realm of watershed-based SWP, from the realm of theory to practice has proven to be challenging (Rawlyk & Patrick, 2013). One of the overarching arguments that has been pushed against collaborative water governance is that it is wrongly viewed as a sort of “panacea” for the management of water resources. Critical to this argument is that collaborative governance is a “nirvana concept,” as it embodies an ideal image of what collaborative governance *ought* to do, rather than what it actually *does*, thus defining overly ambitious objectives that cannot be met in actuality (Molle, 2008; Olivier, 2016). To this point, it is often contended that the collaborative governance paradigm has failed to bridge the gap between theory and practice, or ambitions and achievements, as its conceptual ambiguity is difficult to translate into an operational mechanism for improving water governance at the watershed level (Gallego-Ayala, 2013; Rawlyk & Patrick, 2013; Cook, 2015).

To this point, some critics of collaborative water government assert that there remains a fundamental gap in understanding how these processes and their outputs actually impact environmental outcomes (Koontz & Thomas, 2006). To date, much work has centered on evaluating the design of collaborative processes, rather than their outcomes, and it is argued that the data that is provided on environmental outcomes is too weak to say with certainty that collaborative governance delivers on its promise to solve complex and dire environmental issues (Carr et al., 2012; Gerlak, Heikkila & Lubell, 2013). Collaborative governance is thus often criticized for producing “soft” outcomes, which primarily affect the participants of collaboration – such as increased trust, mutual respect, and knowledge-sharing – rather than impacting the environment or community (Roth & de Loe, 2017). Moreover, it is argued that the increased involvement of local stakeholders in water governance can produce uneven outcomes among different collaborative settings within a given region, in contrast to what a harmonized, top-down approach might be able to accomplish in terms of consistency (de Loe et al., 2016).

An important caveat to thus make regarding the existing literature on collaborative water governance is that it lacks a universally agreed-upon objective for measuring the effectiveness of collaborative arrangements at addressing the problem at hand, such as drinking water safety. Rather, the language that tends to be used, such as “optimal management,” “optimal outputs,” “a common public policy goal,” and “suitable policy responses” are typically indeterminate. This makes it difficult to measure and assess the extent to which collaborative forms of decision-making have contributed to the outcomes that are observed. The author acknowledges that this is problematic when striving to evaluate the outcomes of collaborative governance arrangements that are organized for the purpose of increasing drinking water safety.

In fact, this evasiveness has often been cited in the literature as being problematic for the perceived legitimacy of collaborative modes of decision-making. Some scholars suggest that it is simply unknown whether collaborative processes are producing tangible outcomes at all, given that the measures of “success” often used in the collaborative governance literature are based on outcomes such as consensus, participants’ satisfaction with the process, and participants’ perception of legitimate and honest negotiation (Ansell & Gash, 2008; Brower, 2016). In the realm of SWP for drinking water protection, scholars often reflect on numerous other characteristics that are associated with collaborative decision making that are not necessarily nor even conceivably related to safe drinking water or a greater capacity to manage risks to drinking water, such as “democracy,” “participation,” “efficiency,” and “effectiveness.” In other words, these measures say little about the impact of collaborative governance on the environmental and health outcomes it seeks to achieve, making it difficult to conclude whether collaborative approaches have resulted in better or worse results than their adversarial counterparts (Brower, 2016). More appropriate measures of success for collaborative watershed management, for example, would include implementation and strength of watershed agreements, a quantifiable improvement in the ecological health of a watershed, or the improvement of human health (Carr et al., 2012).

1.8 Factors for Effective Collaborative Water Governance

While the preceding section highlighted some of the main challenges that have been posited in the existing literature with respect to the normative assumptions of collaborative water governance, this section will highlight some of the factors that scholars believe are essential to the success or effectiveness of collaboration. This section also serves as a premise for the theoretical framework that was developed for the purposes of the subsequent analyses in this research paper.

1.8.1 Overview of Factors

1.8.1.1 Consensus-Building

Consensus-building is considered a core feature of most collaborative governance arrangements (Margerum & Robinson, 2015). The notion of consensus decision-making encompasses the idea that stakeholders must agree to the policy decisions that are made; it can be defined by decision rules that range from “complete agreement to simple majority” (Margerum, 2011; Gerlak, Heikkila & Lubell, 2013). In most cases, consensus means an agreement that all stakeholders can live with (Margerum, 2011).

Proponents of consensus-building processes argue that they result in better policy decisions, as they take advantage of the collective knowledge of those involved in the collaboration and yield more informed decisions (Leach & Pelkey, 2001). Consensus is also perceived to have a high social value, in line with the assumption that social order can only be maintained through achieving consensus on public matters (Kenney, 2000). Moreover, some scholars assert that parties are more likely to implement decisions that are made through a consensus process in which they are a part, as it grants them some degree of ownership over the decision and increases their commitment to its implementation (Freeman, 1997).

However, although there is a large portion of collaborative governance literature that supports consensus decision-making as an integral component of successful collaboration, there are many skeptics of consensus as a basis of collaborative water governance. Prevalent in this camp is the argument that the requirement for consensus in a given collaborative process may steer the partnership away from addressing the most important issues, which can lead to least common denominator outcomes or decision stalemates (Kenney, 2000; Leach & Pelkey, 2001; Ansell & Gash, 2007). This is related to the idea of the “social pressure to compromise,” a situation in which some participants may feel pressured to achieve consensus and may therefore not raise important issues that may be likely to hinder consensus-building (Kenney, 2000). Contrastingly, communication and negotiation, while crucial to effective collaboration and in achieving the so-desired consensus decisions, are believed to sometimes actually increase tension and conflict among participants and detract from the collaborative’s productivity (Scott & Thomas, 2017).

Kenney (2000) also argues that by virtue of the “group polarization phenomenon,” individuals are prone to act more boldly when acting in groups than when acting alone; a decision made through consensus, then, may not be the “average” of all of the various positions, but might reflect an extreme position. Consensus-building is also time-consuming and resource-intensive phase of collaboration that requires significant change in for a collective response or agreement to come to fruition (Margerum & Robinson, 2015). As a decision-making rule in collaboration, consensus-building may hinder the effectiveness of the policy outputs, as well as the timeliness, of the process.

1.8.1.2 Representation

A common theme that is discussed in the collaborative governance literature as being fundamentally important for the effectiveness of collaborative processes is representation. Representation is considered to be a fundamental democratic value that is associated with procedural legitimacy or justice, which refers to the processes of rule- and decision-making, and conveys how stakeholder involvement in public policymaking must be structured for that procedure to be justifiable (Trachtenberg & Focht, 2005; Margerum, 2011; Vieira, 2016). Procedural legitimacy has been the focus of significant attention in collaborative governance, and is principally concerned with the ways in which decisions are made, emphasizing that effective collaborative processes are those that ensure that fair and democratic decision-making takes place (Baird et al., 2014; Kim & Siddiki, 2018). Trachtenberg & Focht (2005) offer a set of normative standards for procedural legitimacy that should be met by collaborative watershed governance processes, which includes the appropriate representation of non-governmental stakeholders, the fair consideration of the concerns and interests of non-governmental stakeholders, and the genuine consent on the part of participants to the policy decisions that are made (p. 157).

In general, representation refers to “the extent to which constituent characteristics are reflected in governance structures, processes, and outputs” (Koski et al., 2018). In the collaborative governance literature, representation often specifically refers to whether the full range of interests and ideas are included in collective choice, and that the participants in collaborative governance genuinely consent to the policy decisions that are made (Sabatier et al., 2005; Koski et al., 2018). As a theme for analysis, representation is therefore principally concerned with who is involved in collaborative governance, and also encompasses the extent to which these individuals are able to participate.

Given this, it is useful to further delineate representation in terms of both its descriptive and substantive senses, as did Koski et al. (2018). Descriptive representation, or “representation on paper,” can be assessed based on the formal membership of collaborative groups, to describe which stakeholders are formally represented in the process, whereas substantive representation, or “representation in practice,” assesses the extent to which these stakeholders are represented in the actual processes of collaboration (Koski et al., 2018). Such a distinction is important because collaborative processes tend to be designed to encourage balanced representation of a variety of different stakeholders with diverse interests; however, discrepancy often exists between this representation on paper and the representation that is achieved in practice in collaborative settings (Kim & Siddiki, 2018; Koski et al., 2018).

Adequate representation is cited as an imperative component to collaborative water governance efforts for a number of reasons. As the issues that watershed groups and partnerships are often mandated to address are complex and wicked in nature, multiple perspectives are important in order to identify goals and negotiate effective solutions (Margerum & Born, 1995). These facilitated processes require the

full participation of stakeholders so that all involved feel as though they understand the issues at hand, and that they can support the decisions made (Margerum, 2011). Moreover, a key currency of any collaborative group is meeting face-to-face with group members, as dynamics such as deliberation and trust-building occur alongside with decision-making in these meetings (Hui, Ulibarri & Cain, 2018). Therefore, if stakeholders are not present and engaged at those meetings, they have less influence over the collaborative process or its outcomes (Margerum, 2011; Hui, Ulibarri & Cain, 2018).

However, achieving such in collaborative settings is a difficult task both conceptually and in practice, and remains a significant obstacle to their success (Kenney, 2000; Sabatier et al., 2005). Maintaining stakeholder commitment throughout the entirety of the collaborative watershed planning process is expected to be a challenge for stakeholder groups, particularly given the long-term nature of most collaborative watershed planning efforts (Floress et al., 2009). Turnover within organizations that participate in a collaborative partnership or group is thought to undermine the capacity of the group to complete its mandate, as it not only compromises collaborative memory and trust-building but also may negatively impact the continuity of certain stakeholders' representation throughout the process (Margerum, 2011; Dutterer & Margerum, 2015).

Also common in the collaborative water governance literature is the argument that certain groups are perpetually underrepresented in collaborative decision-making processes, and that such underrepresentation undermines both the procedural legitimacy of the process and the substantive quality of the decisions made. For example, for stakeholders belonging to organizations or interest groups that are more diffuse in nature, such as environmental and environmental justice groups, or Indigenous peoples representing their communities, it is purported that there are significant barriers to their full participation in collaborative settings (Sabatier et al., 2005; Ansell & Gash, 2007; Gerlak, Heikkila & Lubell, 2013; Dutterer & Margerum, 2015). This is largely because such groups have widely different capacities than other stakeholder groups, such as development, industry, and municipal groups, and may lack the financial and organizational resources that award these other organizations their political staying power to participate on a sustained basis in the process (Kenney, 2000; Baber & Bartlett, 2007; Ansell & Gash, 2007; Gerlak, Heikkila & Lubell, 2013). More diffuse organizations also may have less technical and institutional capacity than other interests, and may not have the same capacity to devote time and effort to the process of collaboration (Brisbois & de Loe, 2016).

1.8.1.3 Public Participation

Often cited alongside discussions of stakeholder involvement and representation in collaborative governance is the topic of public participation, although these terms are understood as constituting distinct elements of collaboration. In general, this literature tends to focus on the stakeholders who are

involved in the collaborative process, such as appointed or elected committee members, and as a consequence tends to conflate stakeholder involvement with public participation, sometimes resulting in a lesser attention to the distinct value of public participation to the collaborative process (Margerum, 2011). In this research, the concepts are presented as being distinct from one another. The term “stakeholder” is used here to describe the individuals or groups who have a legally mandated role in the development and implementation of Source Protection Plans under the *Clean Water Act*. The term “public” is defined as the general or lay public, or their representatives, that reside, work, or otherwise have an interest in the watershed area or region in question (Beierle & Cayford, 2002). The public is understood as constituting the citizens and organizations that reside within the source protection regions who do not have a seat at the source protection committee table.

Public participation has become a standard feature of environmental decision-making, particularly as technocratic approaches to natural resources management have become increasingly displaced by more participatory modes of governance (Konisky & Beierle, 2001). In general, public participation in this type of governance is understood as encompassing the variety of procedures that are used to enable diverse members of the public to be actively involved in deliberations regarding policy options, and in some cases policy decision-making (Webler & Tuler, 2001). However, the participatory nature of the public’s involvement in watershed management has become increasingly recognized as being consultative, thereby invoking the use of the term “public consultation” to describe the solicitation of citizen feedback on a decision, plan, or policy proposal with the intention of informing government decisions or revisions to a proposal under consideration” (Jollymore, McFarlane & Harris, 2018).

Some scholars note that the institutionalization, or formalization, of public consultation stretches back to some of the earliest days of watershed management (e.g. Warriner et al., 1996). This institutionalization has generally consisted of the requirement for providing members of the public with the opportunities to be consulted on the various outputs of collaboration being part of the collaborative mandate (Warriner et al., 1996). There are some proponents of this institutionalization. Some assert that the widespread institutionalization of public consultation has created a political system that is more transparent and accessible to the influence of citizens, which has been purported to improve policy making (Warriner et al., 1996). Moreover, it is also argued that public participation must be an institutionalized part of any collaborative water governance process in order for communities to view their participation as meaningful and as something that will impact the policy outcomes of this process (Bohnet, 2015). However, those opposed to the formalized approaches to public consultation claim that it has become “sterilized” through this formalization, and merely creates an illusion of authentic participation while actually manipulating the public into acquiescence (Warriner et al., 1996).

The level of prescription contained in collaborative mandates for public consultation exercises is also believed to impact the level of public participation that is achieved. For example, Bohnet (2015) suggests that policy or legislative documents that do not prescribe the specific participatory planning process that should be used, or that does not explicitly define who constitutes the “public” that should be involved in decision-making, may allow collaborative organizations to implement context-specific public participation processes that they consider to be appropriate and meaningful, a lack of prescription may also have the effect of encouraging organizations to only fulfill the minimum legislative or policy requirements for public participation. As the process of consulting and engaging with members of the general public requires additional resources and expertise, as well as more robust planning, a lack of prescription in terms of how watershed partnerships are to undertake participatory processes may lead to the sidelining of these efforts in favour of pursuing other activities (Sabatier et al., 2005; Margerum, 2011). To this point, Walker and Hurley (2004) argue that “community ‘participation’ often remains in the realm of rhetoric” and does not actually come to fruition in collaborative governance processes.

At the heart of the scholarship that embraces public consultation in collaborative governance contexts is the notion of democracy. In particular, a general sentiment exists that, in democratic nations, citizens expect that they are able to participate in important matters that govern economic, social, and political life (Brown, 2008; Samuelson et al., 2005). Public participation has been coined a keystone of public democracy, while participation is one of the four principles of water governance outlined in the Dublin Principles of 1992 (Jollymore, McFarlane & Harris, 2018). Collaborative institutions that effectively provide citizens with the opportunity to participate directly in policy decision-making are said to meet the criteria that are applied to democratic governance in general, such as representation, legitimacy, and effectiveness (Sabatier et al., 2005). As such, public consultation is an increasingly mandated component to collaborative policy-making processes (Jollymore, McFarlane & Harris, 2018).

Collaborative modes of governance that include the general public and garner their input in the decision-making process are also perceived to be more likely to achieve substantive legitimacy, which is defined as the extent to which policy decisions can be justified (Trachtenberg & Focht, 2005). Substantive legitimacy is made democratic not only by the content of this decision, but also from the procedure by which these decisions are made, and by whom (Van Buuren, Klijn & Edelenbos, 2012). Some authors believe that such legitimacy is necessary for collaborative water governance arrangements to survive over time, and that perceptions of collaborative legitimacy are related to perceptions of positive collaborative outcomes (Baird et al., 2014). Therefore, public participation in collaborative processes is argued to enhance the acceptability of the collaborative governance regime itself, as members of the public may even view the process as being more transparent and democratic (Margerum, 2011).

Involving the broader public in collaborative water governance is also perceived as being important for its potential to involve the incorporation of a more diverse knowledge base into the watershed decisions that are made through the process. Citizens of a given watershed region have important local or site-specific knowledge to impart for the management of the watershed, which can provide a deeper understanding of the issues at hand (Beierle & Cayford, 2002; Margerum, 2011; Carr, Blösch & Loucks, 2012). Therefore, public participation mechanisms must ensure that stakeholders outside of the collaborative process, including special interest groups, businesses, residents, and landowners, understand the process and the management practices it seeks to implement (Carter, Kreutzwiser & de Loe, 2005).

The involvement of landowners in particular in watershed management is deemed to be especially important for the management of non-point source pollution, as effectively addressing NPS pollution requires the management of land-use activities that impact water quality. Landowner and farmer participation in this process thus becomes paramount if collaborative decision-making is to effect meaningful change, and if resistance to these efforts is to be avoided (Jonsson, 2005; Bidwell & Ryan, 2006; Kaplowitz & Witter, 2008; Margerum, 2011; Carr, Blösch & Loucks, 2012). Moreover, engagement with farmers, public and private organizations, and other members of the communities in which watershed management plans will be implemented can foster “cognitive, behavioral, and epistemic change” among all those involved in and affected by the watershed, thus further ensuring that watershed plans will be implemented and monitored by those involved (Margerum, 2011; Patterson, Smith & Bellamy, 2013). However, effectively engaging with this subgroup of the general population can prove to be challenging. For example, Rawlyk and Patrick (2013) suggest that participants on watershed advisory committees responsible for implementing watershed management plans in the South Saskatchewan River were hesitant to prescribe land management practices to landowners, and that equally, landowners wanted the freedom to decide how their land should be best managed to meet the goals of SWP. To this point, Minnes (2017) asserts that landowners’ sensitivity to restrictions on their land use might dissuade them from working with collaborative partnerships for the purpose of source water protection, or otherwise prevent them from seeing their role in the process.

Some scholars have focused on the limitations that are believed to be associated with certain types of public participation activities, such as public forums. To this end, a number of typologies of participation have been produced that focus on the intentionality and approach of those who design and initiate public consultation processes in these settings (Cornwall, 2008). For example, Arnstein’s (1969) ladder of participation provides an illustration of the significant gradations of public involvement in public decision-making. Arnstein is critical of some forms of participation, such as public hearings and the dissemination of information through news media, as being merely tokenistic in nature, or appearing

to be participative while yielding no real power for citizens' involvement in decision-making (Arnstein, 1969; Bohnet, 2015). She states that while public meetings theoretically present an opportunity for fruitful engagement and social learning by inviting citizens' opinions on the issues at hand, if information is presented in a highly technical manner, or conversely without sufficient detail, meetings can easily be turned into vehicles for one-way communication (Arnstein, 1969). Jules Petty (1995) also discusses the idea of public meetings through his typology of the "invited space." He asserts that "invited spaces" for the public to participate, and that can be provided in response to statutory obligations, are often structured by those who provide them, despite the fact that they seek to be participatory (Cornwall, 2008). The public comes together in these spaces because they represent different stakeholders and interests surrounding a particular public issue, rather than because they have something in common, and thus have a different character and may be perceived as less transparent and democratic than spaces that are created by the public themselves (Cornwell, 2008).

These theories suggest that, if collaborative groups procuring public consultation do not ensure that these barriers to meaningful engagement are addressed, their consultation activities may in practice be superficial, thus undermining not only the usefulness and practicality of the exercise for the collaborative process, but also its normatively democratic elements. Other scholars assert more generally that the type of participation techniques that are selected, as well as the timing and format of this participation, can "promote or inhibit" the participation of certain groups (Jollymore, McFarlane & Harris, 2018).

Finally, there are numerous barriers to effective public participation and consultation that have been identified in the literature that are not necessarily related to the specific form of public consultation that is pursued. For example, some authors assert that information regarding the issues at hand need to be highly accessible and actively disseminated to members of the public in order to raise awareness about the process and how their input is valuable (Jonsson, 2005). However, as long as public participation in a given collaborative process is voluntary, concerted effort is required by the collaborative group to engage the public for their sustained involvement and participation (Bidwell & Ryan, 2006).

Other barriers to effective public participation and consultation in collaborative governance settings is that there is a great effort that must be expended by collaborative groups to make the public aware of the process, and educate them not only about its potential implications but also about the opportunities for their involvement. This is related to the notion of public apathy, which can result from a negative view of the local bodies who are spearheading the process, social exclusion, a lack of awareness regarding the opportunities to participate, and a lack of time to participate (Durley, 2007). However, failing to account for the myriad interests that exist within a given community about local water issues is also problematic (Walker & Hurley, 2004). This is because there is a risk, inherent to any stakeholder-led

process, that the stakeholders chosen to participate do not represent the full range of issues and interests within the issue area, or that this representation becomes limited or suppressed by virtue of the collaborative process itself (Margerum, 2011). Some authors also argue that a lack of meaningful public involvement may result in a lower level of public support for the policy decisions, or lead to public apathy towards a collaborative group, thus undermining the viability of collaborative efforts over the long term (Durley, 2007; Margerum, 2011).

1.8.1.4 Financial Capacity

General capacity-building is frequently cited in the literature as being crucial to the success of collaborative water governance. Capacity is defined in the collaborative context as “the collective ability of a group to combine various forms of capital within institutional and relational contexts to produce desired results or outcomes” (Mountjoy et al., 2014, p. 330). Securing sufficient capacity is considered to be critical for collaborative activities related to water resources management, such as SWP, to be undertaken at the local level (Rawlyk & Patrick, 2013). There is significant overlap among the various capital-based types of capacity, but scholars typically identify five main types of capital as being necessary for successful collaboration: human, social, economic, organizational, and natural (Mountjoy et al., 2014).

Among these, economic or financial capacity is considered to be paramount to collaborative success (Emerson, Nabatchi & Balogh, 2012). Economic capital comprises numerous indicators, including the economy-at-large, physical infrastructure, and monetary resources (Mountjoy et al., 2014). Although the economic capital of collaborative initiatives can be influenced by the economic infrastructure of the societies in which they operate, monetary resources have been regarded as the most critical, if not the sole, indicator of economic capital in these settings (Moore, Severn & Millar, 2006; Mountjoy et al., 2014).

Financial capacity is critical for successful collaborative water governance at both the participant and organizational levels. At the participant level, financial capacity is important for enabling the sustained participation of individual stakeholders in the collaborative process. There can be substantial transaction costs that are associated with individuals’ participation in collaborative efforts, both in terms of time and also in terms of travel expenses and other resources (Durley, 2007; Margerum, 2007). Moreover, collaborative processes that are based on consensus-building can demand additional time and resources on the part of participants than other processes (Coglianese, 2000). It is asserted that these transaction costs can be particularly high for individuals’ participation in watershed-based initiatives, given the geographic size of some watershed regions and the time and resources it takes to be physically present at face-to-face meetings that occur in a single location (Margerum, 2007). Moreover, the notion

that there are immediate costs associated with this participation, yet the benefits of the collaborative process are often long-term and not immediately realized (Dutterer & Margerum, 1995) speaks to the importance of ensuring that those who participate in collaboration are properly compensated in order to ensure their sustained and long-term participation in the process.

At the organizational level, collaborative groups rely on sufficient financial capacity to effectively undertake the necessary activities to meet their objectives, which hinges on their ability to acquire a sufficient and reliable stream of funding. This is particularly true when considering the long-term nature of most collaborative watershed initiatives (Lubell & Lippert, 2009; Koontz & Newig, 2014; Scott & Thomas, 2017). Decisions made through collaboration are often not done expeditiously if they are to be done effectively, resulting in collaboration being time-consuming and resource-intensive (Lubell, Leach & Sabatier, 2014; Scott & Thomas, 2017). Thus, these processes require a sustainable source of funding throughout in order to be successful, including for all activities related to the development of watershed plans as well as the implementation and ongoing monitoring of these plans (Keough & Blahna, 2006). In support of this notion, Biddle (2017) asserts that “adequate and sustained funding” will improve the environmental outputs of watershed partnerships (p. 5), while Leach & Pelkey (2001) argue that the chances of a successful outcome from collaborative partnerships is increased when a partnership has abundant resources. Conversely, collaborative groups that are unable to secure such funding can hinder their capacity to move forward over the long-term (Durley, 2007). The need for financial capacity that is not only sufficient, but also long-term and sustainable, is critically identified here as one of the foundations for collaborative success.

The success of collaborative governance initiatives for watershed management is contingent not only on the success of the planning process itself in resulting in tangible outputs via the development of watershed plans, but also on the successful implementation of these plans. In the specific case of source water protection, the literature identifies a need to build capacity at the local level in order to enable local communities to meet the policy and regulatory requirements that are established through the SWP planning process (Rawlyk & Patrick, 2013; Minnes, 2017). However, scholars also contend that the specific capacity needs of communities can vary, and that this is typically a function of the size and nature of the community. For example, smaller, typically rural, communities tend to face issues associated with inadequate human and financial resources in their participation in and implementation of watershed planning initiatives (Cliche & Freeman, 2017). The capacity gap between rural and urban communities is well-documented in the water resources management literature, and there has been a concerted focus on the capacity needs of small and rural communities to protect their drinking water sources (Ibrahim & Patrick, 2017). However, given the interconnectedness of watershed protection and land-use activities, and the associated importance of involving rural communities in watershed planning partnerships, there is

a need to ensure that these groups are sufficiently enabled to participate in the collaborative process and also to implement its policy decisions.

Collaborative organizations can obtain economic capital through various means, which tend to be dependent on the origin of these organizations and the processes through which they are formed. For example, collaborations that form through voluntary action tend to rely on the pooling of resources by the participants involved directly in the collaborative process, who decide collectively how resources should be utilized to achieve its collective goals (McNamara, 2016). In contrast, in mandated forms of collaboration, a convening authority is typically responsible for allocating resources and for ensuring a “stable financial stream” for the operational and technical needs of the collaboration in collaborative processes (McNamara, 2016). Mandates for collaborative or participatory governance typically also tend to include capacity-building through both technical and financial assistance (May, 1995).

However, despite the importance of financial capacity to successful collaboration, particularly for watershed-level initiatives, the literature suggests that in practice this capacity is difficult for collaborative organizations to effectively garner over the long-term. As collaborative governance often represents the decentralization of authority from the state to the local level, scholars have purported that this devolution of authority and responsibility tends to occur without a simultaneous downloading of sufficient capacity, and particularly financial capacity, which effectively undermines water governance at the watershed scale (Dunn, Harris & Bakker, 2014; Jetoo et al., 2015). To this point, a typical constraint of mandated collaborative processes is that financial and other resources can be allocated in a narrow manner that does not support the full range of activities that collaborative groups are required to undertake to fulfill that mandate (Margerum, 2011). Moreover, some authors contend that financial capacity provided by the state in mandated forms of collaboration can operate as a form of incentive, rather than as simply enabling the work of the collaborative organization, which can induce compliance to the overarching goals of the convener of the process (May, 1995; Ryan & Bidwell, 2006).

1.8.1.5 Power

An identified weakness in the existing literature on collaborative governance is its failure to engage with the concept of the “political” that is embedded within these processes (Harrington, 2017). Water issues are inherently political, and while collaborative governance literature tends to assume that solutions arrived at through collaboration will be more equitable, these processes in practice often struggle to achieve equal representation, balanced discourse, and the realisation of improved water governance (Brisbois et al., 2018). Collaborative processes do not exist in isolation; rather, they are “nested within broader social, political, and economic contexts that shape processes and outcomes in ways that are often pervasive and hidden” (Hill, 2013; Brisbois & de Loe, 2016, p. 788). Proponents of

power-centered approaches to the study of natural resources management have showed that the design and effective implementation of rules at the local level is considerably constrained by decisions made at higher levels of governance, and by the structure of the economy, linking environmental change and local decisions with existing inequities within society (Levi, 1981; Clement, 2010). It has further been asserted that, because they do not exist in isolation from the contexts in which it is implemented and operates, collaborative approaches to water governance may favour certain interests over others, even in the absence of explicit conflict (Brisbois et al., 2018). In the water field, issues of access, control, rights, use, and ownership are rampant, which are fundamentally issues of politics and, more specifically, of power (Raik et al., 2008).

Despite the normative assumption that collaborative water governance will result in a more democratic and equitable process of decision-making for water governance among locally-affected actors, many authors contend that collaborative approaches can actually perpetuate the power disparities they are intended to dispel (Bryson, Crosby & Stone, 2006; Kadirbeyoglu & Ozertan, 2015; Brisbois & de Loe, 2016). For example, environmental groups are often skeptical of collaborative governance arrangements for addressing natural resources management issues. This is partially due to the assumption that dominant actors or groups in a given collaboration can exert undue influence over both its processes and outcomes (Ansell & Gash, 2007; Cook, 2015). Development and industry interests have widely different capacities than do their environmental counterparts, and without countermeasures in place to ensure less powerful interests' voices are heard and considered, it is argued that collaborative processes are stacked against environmental groups (Ansell & Gash, 2007; Gerlak, Heikkila & Lubell, 2013). In many cases, actors representing environmental interests in a collaborative decision-making process may feel as though the process is advantageous to these more powerful groups and that these processes only serve to reinforce their dominance to maintain the status quo (Schuckman, 2001).

A coordinated approach to the implementation of collaborative outputs calls for a greater demand for commitment, investment of time and resources, knowledge sharing and production on the part of stakeholders, but it also necessitates that power is shared effectively among participants (Margerum & Robinson, 2009). Part of the issue attached to power imbalances in collaborative water governance is therefore perceived to originate in the very design of these processes, and the need to acknowledge the broader organizational and policy levels within which local management action (facilitated through collaboration) is embedded (Patterson, Smith & Bellamy, 2013). For example, following Scott & Thomas' (2017) theory of collaborative governance as constituting a set of tools, the choice of policy or other tools that are devised by a collaboration to meet public goals can be influenced by power imbalances. Collaborative tool choices structure the process of collaboration itself, and therefore significantly impact its results (Salamon, 2001). Without due consideration of the realities of local

contexts, at various governance levels, in which collaborations are advocated and disseminated, it is argued that the political nature of tool choice remains hidden (Salamon, 2001; Gallego-Ayala, 2013). In actuality, some actors, representing certain interests, are awarded an advantage in determining how policies will be undertaken (Salamon, 2001). Although the goal of achieving consensus on issues might, in theory, help balance this power, actors with ample resources, legitimacy, and/or prestige may still possess the capacity to shape the consensus-building process in a way that suits their interests and needs (Choi & Robertson, 2014).

1.8.1.6 Social Learning

Social learning is considered to be both a positive outcome of collaborative governance as well as a necessary condition for its success. Social, or collective, learning is a process in which individuals learn from one another and develop a shared understanding or a mutual appreciation of an issue at hand (Carr, Bloschl & Loucks, 2012; Grassini, 2017). It thus occurs as a result of interaction and deliberation among diverse participants (Vinke-de Kruif, Bressers & Augustijn, 2014; Siddiki, Kim & Leach, 2017). As collaborative governance necessarily involves interactions among stakeholders in the process, when these interactions are meaningful and effective and include different perspectives on the issues at hand, they are believed to create the opportunity for social learning, which can further lead to “cognitive, behavioral, and epistemic change” among all participants (Patterson, Smith & Bellamy, 2013, p. 446). This results in not only a sense of shared objectives but also an understanding of others’ viewpoints and potentially even a tolerance towards them (Dandy, Fiorini & Davies, 2014). It also results in improved collective understanding about the issue at hand, and can lead to the development of more innovative or integrated solutions (MacDonald, Clarke & Huang, 2018)

Social learning is also considered to be a theoretical foundation for collaborative forms of governance, particularly in environmental management (Grassini, 2017). Rather than leading to one, “correct” answer found within a technical inquiry, as is often the goal with bureaucratic-style governance, a social learning focus in collaborative arrangements acknowledges different epistemologies and can result in stakeholders reaching an agreement on joint action (Patterson, Smith & Bellamy, 2013). Social learning is therefore considered to be a unique and prevalent feature of collaboration that elevates its usefulness in addressing problems that are plagued by numerous, and often conflicting, interests. The transfer of knowledge among individuals involved in collaborative governance, as well as the transformation in technical skills and competencies among these people, is conceived of as a positive thing for the effective management of resources such as watersheds beyond the walls of the collaboration (Siddiki, Kim & Leach, 2017).

Koontz's (2014) summary of six factors of collaborative arrangements that have been empirically identified to enhance the opportunities for social learning to occur include the inclusion of a diverse set of participants with varied viewpoints; extended engagement with multiple opportunities to engage over time; the exchange of information; opportunities for interaction; process equity; and participants' ability to set the agenda and process of collaboration (otherwise known as process control) (p. 1574). Greater process control is believed to be particularly important in increasing group components of social learning, as participants' ability to set the agenda and procedures of collaborative processes allows them to discover new opportunities to work together, rather than the mandated items that were decided by a convening authority (Koontz, 2014). In this sense, the design or structure of the collaborative arrangement is recognized as playing a fundamental role in the facilitation of social learning (Gerlak & Heikkila, 2011). Moreover, the frequency and intensity of the interaction among participants in these settings is also believed to influence the ability of these participants to engage in social learning; as social learning is relational learning, which is understood to be partially a function of time, it is expected that social learning will grow roughly in proportion to the amount of time that stakeholders are able to interact with one another (Gerlak & Heikkila, 2011; Siddiki, Kim & Leach, 2017).

However, the literature also notes that there are some potential limitations for collaboration that are associated with social learning. These include the proliferation of incorrect information, its driving of consensus among participants that can lead to lowest-common-denominator decisions, and deliberation which might exacerbate existing power imbalances (Koontz, 2014). Moreover, Gerlak & Heikkila (2011) stress that while there exists the common assumption that social learning results in improved collaborative outputs, accurately measuring this connection remains a convoluted process, due to the highly subjective and even conflicting nature of the various criteria used to assess these outputs.

1.8.1.7 Trust-Building

A critical component for achieving social learning in collaborative governance processes, and also considered to be fundamental for their success in general, is trust. Trust among the stakeholders involved in collaboration is often portrayed as constituting the essence of effective collaboration in the context of natural resources management (Huxham & Vangen, 2005; Leahy & Anderson, 2008; Bryson & Crosby, 2015). It is considered to be a fundamental ingredient for ensuring collective action and commitment to the collaborative process (Bryson & Crosby, 2015; Getha-Taylor et al., 2019). In such an interorganizational arrangement, in which interdependence is required to make decisions, it is asserted that trust promotes the necessary coordination among individuals within these different organizations and also promotes norms of reciprocity among participants (Getha-Taylor et al., 2019).

While researchers thus agree that all collaborations begin with a certain degree of trust, they also emphasize that trust-building throughout the process is a necessary requirement for successful collaboration (Huxham & Vangen, 2005; Ansell & Gash, 2007). Collaborative management is believed to improve trust between actors across sectors through participants' information sharing and knowledge, and also by exhibiting competency, good intentions, and effective follow-through (Huxham & Vangen, 2005; Borrini-Feyerabend et al., 2015). Trust is often measured both in terms of participants' level of confidence in the established collaborative process to consider the interests and values of all participants, as well as the degree to which participants trust one another (Carr et al., 2012). In theory, collaborative governance diffuses authority for a problem across a set of diverse actors who must agree to pursue a common objective by sharing resources and coordinating activities, actions that require a certain level of trust among actors (Morris et al., 2014). This, in turn, promotes a sense of shared ownership over the collaborative process and its outputs (Borrini-Feyerabend et al., 2015). Interpersonal trust can be enhanced in collaborative governance arrangements through the use of neutral facilitators, clear process and procedural rules, and the open sharing of data and information (Leach & Pelkey, 2001). Therefore, trust is not only perceived as a necessary ingredient to successful collaboration, but also as a key relational outcome of the collaborative process itself (Siddiki, Kim & Leach, 2017). As with social learning, the long-term nature of many collaborative water governance ventures is thought to provide collaborative groups with increased opportunities for trust-building compared to processes that are shorter in nature (Siddiki, Kim & Leach, 2017).

There are some barriers that may undermine trust among stakeholders involved in collaboration, as well as on the part of those who view the collaborative process from the outside. For example, a lack of effective leadership during the collaborative process may preclude trust-building among participants, particularly in situations in which the collaboration is preceded by a history of conflict among the actors involved (Ansell & Gash, 2007). Moreover, organizations that exclusively rely on trust as an organizing principle may face barriers in terms of blindness to cues of untrustworthiness and strategic action among actors or the inability to innovate (Idrissou et al., 2012).

1.8.2 Factors Explored in this Research

Although it would be ideal to empirically investigate each of the above-mentioned factors in this thesis, practical limitations such as the timeframe allocated for its completion led the author to pursue a narrower scope of analysis. As such, the author engaged in a careful selection to decide on the factors that would guide the analyses contained in Chapters 4 and 5. The factors that were ultimately chosen were representation, public participation, and financial capacity. Chapter 3 will explain the selection

process that was utilized and the rationale that led to the ultimate selection of these three factors over the others.

1.9 Summary

To summarize, the management of water resources, and drinking water more specifically, has typically occurred on a decentralized basis, wherein lower levels of government are devolved the water-specific responsibilities and power over particular components of its management. Despite the beneficial aspects of decentralized water governance, such as being situated at the level of resource use and permitting decision-making by local users of the resource in question, decentralization is also associated with a host of challenges for its implementation in practice, the most prominent of which being fragmentation. The issues associated with fragmentation become arguably exacerbated due to the nature of water as a common-pool resource and the management problems that are inherent to the diffuse sources of pollution that tend to contaminate the sources of drinking water. To address these challenges, watershed-based source water protection has been advocated on the international stage as providing the multiple barriers of protection that are necessary to ensure the ongoing safety and potability of drinking water for its consumers. Collaborative governance at the watershed level has been deemed to be essential in the execution of this multiple-barrier approach, and has emerged in response to the inefficiencies associated with top-down, bureaucratic approaches to water governance, adversarial policymaking, and to more effectively manage “wicked” water problems. However, despite the myriad normative assumptions surrounding collaborative water governance, this approach is nonetheless difficult to implement in practice. To this end, there are a number of factors that are considered fundamental to the success and effectiveness of collaborative water governance, including consensus-building, representation, public participation, financial capacity, power, social learning, and trust-building, some of which are also theoretical underpinnings of collaboration itself. This thesis takes a closer look at three of these factors (representation, public participation, and financial capacity) in its attempt to understand some of the lived experiences of actors involved in collaborative source water protection planning within watershed regions in the Province of Ontario.

2.0 Water Governance in Ontario

This chapter will provide an overview of the history and current state of water governance, and drinking water governance more specifically, in Ontario. It will first outline water governance in Canada, and outline the specific challenges experienced in the Canadian context of decentralization. The discussion will then turn to the more specific policy issue of drinking water governance in Canada and the attempts by the federal government to manage drinking water governance from the center. This overview will be followed by a brief history of water and drinking water governance in Ontario, and a look into the Walkerton crisis that provided the impetus for the central focus of the present research: the Ontario *Clean Water Act* and the watershed-based, collaborative form of governance it prescribes for source water protection. The chapter will finish with an explanation of the main components of the *Clean Water Act* and its collaborative governance regime.

2.1 Water Governance in Canada

Federalism is a key principle that underlies the organization of government in Canada, and has had implications for how the environment is managed. In a federal system, legislative powers are divided between the national and sub-national levels of government. In Canada, the legal regime for this division of powers is found in the law of the Constitution, established in the *Constitution Act, 1867* (MacKay, 2005). However, the *Constitution Act* does not specifically include protection for the environment as a legislative power belonging to either level of government (MacKay, 2005; Benidickson, 2009). As a consequence, legislative jurisdiction for the environment is found indirectly in other heads of power included in sections 91 and 92 (MacKay, 2005; Benidickson, 2009). Moreover, Benidickson (2009) asserts that in addition to its original omission from the *Constitution Act*, constitutional interpretation of the division of powers and changing perceptions of how contemporary environmental problems should be addressed have also contributed to a lack of constitutional authority over environmental protection.

Water is no exception to the complexities of Canadian environmental governance. The decentralized nature of Canadian federalism is believed to have important implications for water governance (Bakker & Cook, 2011). While section 91 of the *Constitution Act* designates water-related matters such as navigation, fisheries, federal lands, interprovincial water flows, and international waters as federal responsibilities, provincial and territorial governments are responsible for renewable resources, which includes the water resources located within their boundaries (Bakker & Cook, 2011). Some responsibilities, such as water supply and water distribution, are further devolved to the municipal level (Bakker & Cook, 2011). This is because, as legislative creatures of their respective provinces, municipalities exercise some legislative and executive powers on the basis of provincial delegation, primarily through enabling provincial legislation (Benidickson, 2009).

Despite the technically shared nature of water responsibilities among the national and sub-national levels of government, it is widely understood that in Canada, the basis for water resources management tips towards the provinces (Clancy, 2014). The provinces have generally been granted pre-eminence for the management of water resources, notwithstanding explicit federal water-related responsibilities (Hill et al., 2008; Johns and Rasmussen, 2008; Clancy, 2014). The property and civil rights clause embedded in section 92 of the *Constitution Act* grants provinces legislative authority over the property they own, which has been used as the foundation for water resource legislation (Johns & Rasmussen, 2008; Clancy, 2014). Furthermore, provincial rights over the development, conservation, and management of non-renewable resources, as well as the production of electricity from water, have also prompted provincial governments to ensure that resource-based industries are supported to increase the provinces' economic development (Johns & Rasmussen, 2008). Hence, provincial governments are believed to be “constitutionally, politically, and operationally privileged” when it comes to water resources management (Johns & Rasmussen, 2008, p. 74). Some authors suggest that this privilege is exacerbated by a certain level of federal “timidity” regarding water resources management that stems from certain factors like the substantial physical size of most provinces, which limits the occurrence of direct, cross-boundary conflicts (which are of federal domain), and the prominent sentiment of regionalism that pervades much of Canada's political climate (Clancy, 2014, p. 86).

2.2 Canadian Decentralization and Fragmentation

There has been a longstanding debate not only in Canada, but also globally, over the implementation of harmonization versus subsidiarity for the management of public problems, including water. Harmonization is understood as a process of “achieving regulatory efficiency, effectiveness and clarity” through centralization and standardization (Hill et al., 2008, p. 317). In contrast, subsidiarity is interpreted as being a principle of decentralization, by which central authorities do not act in areas that fall outside of their explicit jurisdiction, unless it would be more effective than action being taken at a lower level (Hill et al., 2008; Drew & Grant, 2011). It is argued that, in theory, effective water governance must achieve a fine balance between harmonization and subsidiarity (Hill et al., 2008). However, given the myriad responsibilities for water management that take place at various governance levels in Canada, the nation has been coined one of the most decentralized federations in the world for water governance, leaning more towards the subsidiarity side of the pendulum (Hill et al., 2008; Norman, Bakker & Dunn, 2011; Olfert, 2016).

One of the issues associated with a high level of decentralization in the Canadian context is fragmentation, which has historically occurred both vertically and horizontally (Cook, 2014). Due to the fact that various, and sometimes overlapping, areas of water governance have been granted to different

levels of government through the Constitution, vertical fragmentation can be observed in the numerous governance gaps that have resulted (Saunders & Wenig, 2007). These gaps are evident in the lack of coordination between the multiple scales at which water resources are utilized and managed, as well as a lack of clarity about how water-related decisions are made (Bakker & Cook, 2011). Horizontally, fragmentation occurs across and among levels of government. Within the federal government, over 20 departments and agencies have responsibilities for different aspects of the water cycle for fresh water resources, due to the transboundary nature of water (Norman, Bakker & Dunn, 2011; Environment and Climate Change Canada, 2017). There are inherent difficulties associated with managing the tensions between these departments in a decentralized system, which only become exacerbated by a lack of coordination and clarity surrounding their respective roles and responsibilities in the management of the resource in question (Dunn, Harris & Bakker, 2014).

Water management at this level is further complicated by the fact that many bodies of water cross more than one jurisdictional boundary, thus impacting multiple sectors and interests. A lack of coordination among the myriad institutions and actors involved in water management presents a major gap that arguably prevents the effective management of freshwater resources in Canada (Raik, Wilson & Decker, 2008). Fragmentation is said to be so prevalent in the Canadian landscape that it characterizes the very essence of Canadian water resources management, and is viewed as one of the major institutional challenges to effective policy development and implementation in this area (Bakker, 2007; Dunn, Harris & Bakker, 2014).

2.3 Drinking Water Governance in Canada

The regulation, management, and delivery of drinking water in Canada is also divided among multiple bodies. Three federal departments primarily share responsibility for the safe delivery of drinking water to Canadians: Environment and Climate Change Canada, Health Canada, and, for drinking water on Indigenous reserves, Indigenous Services Canada (previously Indigenous and Northern Affairs Canada). There is no single mechanism within the federal government for effectively coordinating all of the jurisdictional arrangements that affect drinking water management in Canada (Grant, 2008).

In an effort to harmonize drinking water standards across the country, Health Canada created the Federal-Provincial-Territorial Committee on Drinking Water (FPT Committee). This Committee contains 14 voting members (one from each province and territory and three from the federal government), who represent either the department of health or the environment in their jurisdiction (Government of Canada, 2006). Since 1968, the FPT Committee has been producing the Guidelines for Canadian Drinking Water Quality, which set out basic parameters for all water systems across the country by establishing the maximum acceptable concentrations of microbiological, chemical and radiological contaminants in

drinking water (Government of Canada, 2018). However, these guidelines are voluntary and not legally binding, meaning that they are unenforceable across provincial jurisdictions and are instead left to provincial interpretation and implementation through their own mechanisms, if they are implemented at all (Johns & Rasmussen, 2008; Dunn, Bakker & Harris, 2014). Given this, Canada remains the only Group of 8 (G8) country and, along with Australia, is one of two Organization for Economic Cooperation and Development (OECD) member states that does not have legally-enforceable national drinking water quality standards (Dunn, Bakker & Harris, 2014).

Due to the fact that provinces are responsible for developing their own region-specific drinking water legislation, policies, and regulations, there is great variation across the country in terms of drinking water protection (Norman, Bakker & Dunn, 2011; Hanrahan, 2017). Moreover, in exercising their authority over drinking water governance, provincial governments also regulate municipal drinking water services (Hrudey, 2011). Municipal governments are responsible for implementing, monitoring, and enforcing provincial drinking water policies and regulatory standards (Hill et al, 2008; Ladner, 2009; Walters et al., 2012). Enabling provincial legislation such as the *Ontario Municipal Act* empowers municipalities to enact bylaws that reflect the decisions of local officials, for such purposes as zoning, planning, and land use regulation, providing municipalities with extensive authority to protect water at the local level (Benidickson, 2009). The current system is therefore structured to further decentralize the responsibility for safe drinking water from the provincial level to municipal governments (Hrudey, 2011).

The devolution of responsibility has arguably exacerbated the level of variation in drinking water standards across the country (Hanrahan, 2017). In fact, not only is a variation in microbial risk assessment and management evident between provinces, but also within provinces and even within the same watersheds and across water providers within these watersheds (Dunn, Bakker & Harris, 2014). This variation speaks to the difficulties associated with having multiple actors involved in both land- and water-related activities within individual provinces, coupled with the inherent challenges associated with the complexities of water quality management. Moreover, scholars have observed that the devolution of authority and responsibility from the central government to subnational units, and from subnational units to the local scale, can sometimes occur without a simultaneous downloading of capacity, thus potentially undermining effective drinking water governance at the local level (Dunn, Harris & Bakker, 2014; Jetoo et al., 2015).

2.4 The History of Drinking Water Governance in Ontario

One fundamental element of the drinking water protection landscape in the Province of Ontario is related to the attempt in the early 20th century integrate water resources management through the

establishment of conservation authorities. The enactment of the *Conservation Authorities Act* in 1946 was a novel approach to conservation and resource management in Ontario, particularly with its focus on the watershed scale as the management unit (Scott, Tayler & Walters, 2017; Worte, 2017). In their earliest days, conservation authorities were widely viewed as a global example of an advanced conservation approach, and as an “outstanding example of community action for conservation” (Shrubsole, 1996, p. 321). The provincial government required that watershed studies be conducted for each of the newly formed conservation authority areas, which led to the creation of watershed management plans (Worte, 2017). However, these plans were not legally binding on municipalities, and were not focused solely on water management; rather, they were voluntary and comprehensive in nature, covering other resource management areas such as soil conservation, land use, wildlife, forestry, and recreation (Worte, 2017). Conservation authorities thus did not have a formidable role to play in the protection of drinking water prior to the Walkerton crisis.

Economic growth also led to increasing complexities in the policy landscape for water management. In the 1970s, Ontario experienced a period of rapid growth that led to an expansion in population, urbanization, and industrialization, as well as an expansion in government to address the impacts of this growth (Worte, 2017). What ultimately resulted was a series of reactive, issue-specific, and uncoordinated legislative and policy decisions that were more or less related to water resources management. A number of provincial statutes broadly related to drinking water were enacted, including the *Ministry of the Environment Act*, the *Ontario Water Resources Act*, the *Environmental Protection Act*, the *Environmental Bill of Rights*, the *Health Promotion and Protection Act*, and the *Public Utilities Act* (O’Connor, 2002). While these statutes have provided the general legal framework for the protection and management of water supplies in the province of Ontario, this patchwork of legislation remains under the auspice of different provincial agencies, municipalities, and the conservation authorities, which has resulted in fragmented responsibilities and overlapping jurisdictional oversight (Worte, 2017; O’Connor, 2002).

Specific policy instruments aimed at drinking water protection prior to the Walkerton tragedy were largely centered on addressing point sources of pollution through end-of-pipe treatment, primarily through two main policy guidelines. The Ontario Drinking Water Objectives, developed in 1994, set out the maximum concentrations of potentially threatening substances that should be allowed in drinking water, and also contains minimum sampling requirements for public water supply and distribution systems (O’Connor, 2002). However, these guidelines are not legally binding on municipalities, and merely continue to provide guidance on how municipalities should ensure the provision of safe drinking water. The second component to this policy framework was the Chlorination Bulletin, which was updated in 1987 and was a guideline for the disinfection of drinking water and distribution systems

(O'Connor, 2002). As with the provincial Drinking Water Objectives, the Chlorination Bulletin was not legally binding when the Walkerton crisis occurred. Moreover, the involvement of the federal government in drinking water protection primarily reflected its role in research and infrastructure funding, which focused on water and sewage treatment infrastructure and monitoring and regulating large, static industrial and municipal point sources (Johns, 2008). In fact, when the events in Walkerton unfolded, there were no specific policy instruments or tools in Ontario that addressed non-point sources of pollution (Johns, 2008).

2.5 The Walkerton, Ontario Drinking Water Crisis

2.5.1 The Contamination of Walkerton's Drinking Water

The microbial contamination of surface and groundwater is a significant public health concern across the world (Harmel et al., 2016). One of the most well-known cases of widespread public drinking water contamination occurred in the small town of Walkerton, Ontario (Harmel et al., 2016). In May, 2000, tragedy struck the 5,000-resident town when their drinking water supply became contaminated with a dangerous strain of *Escherichia coli*, as well as *Campylobacter*, *Salmonella*, and other bacterial pathogens, resulting in the death of seven people (Hipel, Kilgour & Zhao, 2003; Richards, 2005; Plummer et al., 2010; Grey Bruce Health Unit, 2018). In addition to these deaths, an epistemological investigation into the event revealed that 2300 other residents fell seriously ill with gastrointestinal problems; this included 28 confirmed cases of hemolytic uremic syndrome, one of the most severe kidney diseases, 23 of which were children (Richards, 2005). One of these children died in the early stages of the disease, while eight others required kidney dialysis (Richards, 2005).

Escherichia coli (more commonly known as *E. coli*) is a subset of a group of gram-negative enteric bacteria that are known as coliforms, which typically live in the intestines of warm-blooded animals (Stanridge, 2008; Fegan & Gobius, 2012; Cotruvo, 2018). *E. coli* constitute approximately 0.1 percent of all gut flora (Eckburg et al., 2005; Cotruvo, 2018). The vast majority of the strains of the bacteria are not harmful to the host in which it resides, and are in fact usually beneficial (Fegan & Gobius, 2012; Cotruvo, 2018). In contrast, most other bacteriological pathogens, such as *Salmonella* and *Shigella*, do not normally present in healthy human guts, and are instead almost always associated with disease when found in the gut (Stanridge, 2008). *E. coli* is considered the optimal indicator bacteria for detecting fecal contamination in surface and groundwater sources, due to its high concentration as normal flora in the gut, its ability to survive in the environment, and it being the only coliform that is exclusively associated with a fecal source (Stanridge, 2008; Cotruvo, 2018). Beyond this, *E. coli* have numerous beneficial uses in biotechnology, such as recombinant DNA research (Cotruvo, 2018).

However, some variants of *E. coli* can cause serious illness and disease in humans when it enters the human intestinal system (Stanridge, 2008; Fegan & Gobius, 2012). There are a range of diseases in humans that can be caused by the ingestion of pathogenic *E. coli*. These include asymptomatic carriage, bloody diarrhea, gastroenteritis, urinary tract infections, neonatal meningitis, and respiratory illness (Fegan & Gobius, 2012; Cotruvo, 2018). The most commonly occurring of these pathogenic strains is *E. coli O157*, which has been the “causative agent” in numerous waterborne disease outbreaks (Stanridge, 2008). *E. coli O157/H7* is also one of the most harmful strains of the genus, as it is a shiga toxin-producing strain and can cause hemolytic uremic syndrome, which has many serious health implications and is often fatal (Cotruvo, 2018). *E. coli O157/H7* was the strain that was found in the water supply of Walkerton.

In addition to the health implications and serious illness that can result immediately following the ingestion of water that is contaminated with *E. coli*, numerous studies have also pointed to many troubling long-term health effects that have impacted the lives of exposed individuals, almost two decades after the Walkerton outbreak. One study has indicated that some of these individuals continue to experience health implications such as irritable bowel syndrome, hypertension, and kidney disease (Lisnyj & Dickson-Anderson, 2018). Moreover, many residents in the town continue to struggle with adverse psychological impacts related to post-traumatic stress disorder resulting from the outbreak, and some remain subconsciously hesitant to consume tap water (Lisnyj & Dickson-Anderson, 2018). It is thus clear that, for many reasons, the contamination of water supplies by *E. coli* is a serious public health and policy concern, and one that was unprecedented in municipal water systems in Ontario, and across the country, prior to this incident.

2.5.2 The Report of the Walkerton Inquiry: Findings

The Walkerton incident was the worst-reported *E. coli* tragedy in the history of Canada, and the second worst in the world (Hipel, Kilgour & Zhao, 2003). Following the outbreak, a public inquiry into the events that occurred in May, 2000 that led to the crisis was immediately launched by the provincial government. This inquiry was led by Justice Dennis O’Connor, sat on the Ontario Court of Appeal at the time, and resulted in the publication of his now widely-known Report of the Walkerton Inquiry.

Part one of his inquiry indicates that the infected water system was supplied by three different wells that held groundwater sources, and that the water pumped from each of these wells was treated with chlorine before flowing into the distribution system (O’Connor, 2002). Walkerton is located in the upper Saugeen River watershed, and has traditionally served as the service hub for the surrounding area, which is predominately rural and agricultural (Prudham, 2004). Walkerton, like many small rural areas in the province, relies primarily on groundwater delivered through private wells for its water supply (de Loe,

Kreutzwiser & Neufeld, 2005). On May 12, torrential rain swept cattle manure from an adjacent farm to Well #5 (Hipel, Kilgour & Zhao, 2003). On May 13, Justice O'Connor contended that the Walkerton Public Utilities Commission (PUC) foreman in charge of testing the chlorine residuals in each of the town's water supply systems neglected to test Well #5. He believed that it is likely that a strain of *E. coli* as well as the *Campylobacter* bacteria entered the well at much higher concentrations than the chlorine residuals, thus easily entering the distribution system undetected (O'Connor, 2002). Justice O'Connor further asserted that the chlorine residual on May 13 must have been zero, and that had the foreman actually measured the residual, he could have undertaken the proper measures to protect both the water system and the community.

A few days later, *E. coli* was detected in water samples by a private laboratory, who informed the PUC; however, neither party notified the Ministry of the Environment or the Ministry of Health (Hipel, Kilgour & Zhao, 2003). The failure of the PUC to disclose these laboratory results to either Ministry has been considered an egregious error of judgment; while the outbreak may not have been prevented entirely, it is believed that notifying the health unit likely would have led to their issuing a boil-water advisory by May 19 at the latest, thus probably substantially reducing the number of illnesses (Hipel, Kilgour & Zhao, 2003).

The political and institutional climate in the province of Ontario at the time of the Walkerton crisis was considered to contribute to these events. For example, in the mid-1980s, the Ontario government stopped preparing maps of groundwater contamination susceptibility, mapping major aquifers, and publishing maps of provincial groundwater resources (de Loe, Kreutzwiser & Neufeld, 2005). In addition, budgetary and staffing cutbacks in the mid-1990s resulted in a one-third budget cut for the Ministry of the Environment, leading to significant reductions in staff (O'Connor, 2002; Prudham, 2004). Justice O'Connor concluded that these cuts were indirectly linked to the events at Walkerton, as they impacted the Ministry of the Environment's inspections and approvals program and thus made it less likely that the Ministry would take proactive measures that may have prevented or limited the outbreak (O'Connor, 2002).

These budget cuts within the Ministry of the Environment also impacted the effectiveness of municipal water testing in the province. In 1996, a decision was made as a result of budgetary restrictions to cease all routine water testing for municipalities in provincial laboratories, resulting in the wholesale privatization of municipal water testing (O'Connor, 2002). Justice O'Connor also asserted that the privatization of laboratories directly contributed to the Walkerton crisis. This was partly because private sector laboratories were not under government regulation, and there were therefore no criteria governing the quality of the water testing, no requirements for the level of qualification or experience of laboratory personnel, and no provisions for the inspection, auditing, or licensing of these laboratories (O'Connor,

2002). Moreover, the provincial government did not implement any legislation or binding policy requiring laboratories to directly notify the Ministry of the Environment or Ministry of Health in the case of adverse test results (O'Connor, 2002; Prudham, 2004). Thus, while the laboratory that discovered *E. coli* in Walkerton's water supply could have informed either Ministry of this incident, there was no regulation requiring it to do so. It is believed that their voluntary disclosure of this information would have substantially reduced the impacts of the outbreak (Hipel, Kilgour & Zhao, 2003). Justice O'Connor asserted that the decision to privatize municipal water testing was centered on reducing overlap, duplication, and regulatory oversight for the purposes of salvaging resources and improving efficiency, rather than on public health and safety, and that single barriers like water testing "are never entirely effective" (O'Connor, 2002, p. 72). Thus, one of the overarching conclusions resulting from the Walkerton inquiry was that a combination of local and provincial arrangements caused the water system failures, and that the provincial government should not be permitted to behave indifferently to operational failings that occur at the local level (Clancy, 2014).

2.6 A New Provincial Direction for Drinking Water Protection

The Walkerton drinking water crisis was an impetus for the Ontario government to enact changes to the drinking water governance regime in the province. The Report of the Walkerton Inquiry identified 121 recommendations for the province to implement to ensure safer municipal drinking water. One of these recommendations was that the province implement a *Safe Drinking Water Act* (O'Connor, 2002). In response to this recommendation, the government passed the *Ontario Safe Drinking Water Act* in December 2002 (Canadian Environmental Law Association, 2002). However, the passing of this Act did not incorporate the use of the multiple-barrier approach. The legislation thus did not offer any more robust protection of drinking water sources than did the existing policy and legislative framework in the province that existed at the time of Walkerton.

There were some specific components of the system that Justice O'Connor envisioned be implemented by the Province of Ontario. For example, he explicitly recommended that the province implement a drinking water source protection system "on an ecologically meaningful scale," or, on the watershed scale (O'Connor, 2002, p. 9). He further maintained that source protection plans should be developed for each watershed region, and that these plans be a subset of the broader watershed management plans that address all aspects of watersheds. He proposed four main elements for this provincial source protection system: leadership from the Ministry of the Environment, a local planning process, approval by the Ministry of the Environment, and effective plans (2002).

As the *Safe Drinking Water Act* did not incorporate the multiple-barrier approach, nor source water protection, the province took a different approach in responding to these recommendations through its enactment of the *Clean Water Act*. This legislation was intended to create a system of drinking water source water protection in Ontario that was evidence-based and on the watershed level. In particular, watershed-based source water protection is argued to be partially contingent on the successful collaboration of the multiple stakeholders who are implicated in the protection of source water supplies within a given watershed (Koontz & Thomas, 2006). As will be explained in detail below, the new direction that was taken in the post-Walkerton Province of Ontario has attempted to craft new institutions for drinking water SWP that are based on collaboration at the watershed level.

2.6.1 The Clean Water Act

The Ontario *Clean Water Act* was enacted in 2006. It set out the regulatory framework for source water protection in the province and established new source protection areas and source protection regions along the boundaries of existing watersheds for the purpose of watershed-based SWP (Sproule-Jones, Johns & Heinmiller, 2008; Collins et al., 2017; Grand River Conservation Authority, 2018). It also mandated the creation of multi-stakeholder source protection committees in each watershed region with a mandate to develop science-based source protection plans for the each of the source protection areas in their watersheds. The *Clean Water Act* thus, at least in spirit, marked a departure from the previously issues-based and reactive approach to water resources management in Ontario that only indirectly touched upon drinking water management. It was developed with the intent to identify existing and future threats to drinking water sources on a watershed level, in order to proactively adapt land-use and other activities to protect these sources from contamination. It also focused on a source-to-tap process, rather than on the end-of-tap treatment that characterized prior provincial approaches. This subsection will outline the main components of the *Clean Water Act* in order to provide an overview of the province's collaborative approach to drinking water source protection.

2.6.1.1 The Role of the Minister of the Environment

One of the fundamental components of the system for drinking water source protection that was envisioned by Justice O'Connor in his Report was that the Ministry of the Environment would have distinct role. He recommended that the Ministry of the Environment be the lead provincial agency for all aspects of the provision of safe drinking water, including the protection of their sources (2002). He further recommended that the Ministry be responsible for establishing the framework for the development of the source protection plans, providing financial and human capacity for their development, and approving the completed plans (2002).

In line with this recommendation, the provincial government assumed responsibility for the development of the *Clean Water Act* and its regulations, including the mandate and activities of the source protection committees and the roles that various other entities were to play in the development and implementation of source protection plans. Moreover, the Minister was granted the overall authority for approving the source protection plans and all other reports developed by the committees that would serve to inform the policies in the plans. The Minister therefore was given an oversight and authoritative role over the Ontario SWP process and its outputs.

2.6.1.2 The Role of Conservation Authorities

While the *Clean Water Act* delegated overall authority for the Ontario SWP program to the Minister of the Environment, it also delegated responsibility for particular elements of this new process to various other entities in the province. The legislation delegates the overall authority for the development and implementation of the SWP plans to provincial conservation authorities (Collins et al., 2017). As previously outlined, the *Conservation Authorities Act* was enacted in 1946, which facilitated the creation of river basin-based organizations with a mandate to operate based on the principles of integrated water management (Mitchell et al., 2014). Conservation authorities have an overall mandate to “ensure the conservation, restoration and responsible management of Ontario’s water, land and natural habitats through programmed that balance human, environmental and economic needs” (Mitchell et al., 2014). In particular, they are responsible for protecting and managing the province’s water resources at the watershed level (Baldin, Deadman & Eagles, 2003).

Many of the conservation authorities that were formed in the early 1940s and 1950s were later amalgamated and their programs consolidated, due to the variation in the size and nature of the watersheds in the province (Mitchell et al., 2014). Today, there are 36 conservation authorities, ranging in size from 490 square kilometers to 6800 square kilometers (Mitchell et al., 2014). The vast majority of the conservation authorities are located in southern Ontario, which is where moderately sized watershed management units were created by the Great Lakes and where there was an adequate municipal tax base to support the work of the conservation authorities (Worte, 2017). While funding for conservation authorities was initially provided through a provincial-municipal partnership, funding from the province has effectively diminished since the 1990s, resulting in their now being almost fully funded by municipalities in the watershed (Worte, 2017).

Conservation authorities thus have a long history in Ontario as stewards of provincial water resources. It appears to be a natural fit that the *Clean Water Act* established the appointment of one conservation authority in each source protection region to be the source protection authority for each source protection committee (SPC), as the watershed-based jurisdiction held by the conservation

authorities enables them to have “an overall understanding of the natural systems” in the watershed for which they are responsible (Worte, 2017, p. 367). In particular, they are responsible for protecting and managing the province’s water resources at the watershed level (Baldin, Deadman & Eagles, 2003). In some respects, the *Clean Water Act* has leveraged the existing watershed expertise of the conservation authorities and provided them with a similar coordinating role on source protection committees for the specific purpose of drinking water SWP planning.

2.6.1.3 Source Protection Areas and Regions

The main purpose of the *Clean Water Act* was to establish a governance system for the protection and management of drinking water sources on the watershed scale, based on the existing watershed boundaries that were delineated by the creation of conservation authorities. Figure 1 below contains a map of the existing conservation authority boundaries in Ontario.

The vast majority of the conservation authorities are located in watersheds in the southern portion of Ontario. This coincides with the population distribution in the province, as approximately 90 percent of the population of Ontario resides in Southern Ontario (Collins et al., 2017). Therefore, the central and southwestern portions of Ontario have the greatest concentration of SWP planning efforts under the Act (Plummer et al., 2010). However, while conservation authorities cover the most densely populated areas of the province, their jurisdiction does not include the majority of its land mass, which is located mainly in the northern part of the province (Collins et al., 2017). The small map in the righthand corner of Figure 1 shows where the conservation authorities in the northern part of the province are located, and thus the watershed regions that are also under the purview of the Ontario SWP program.

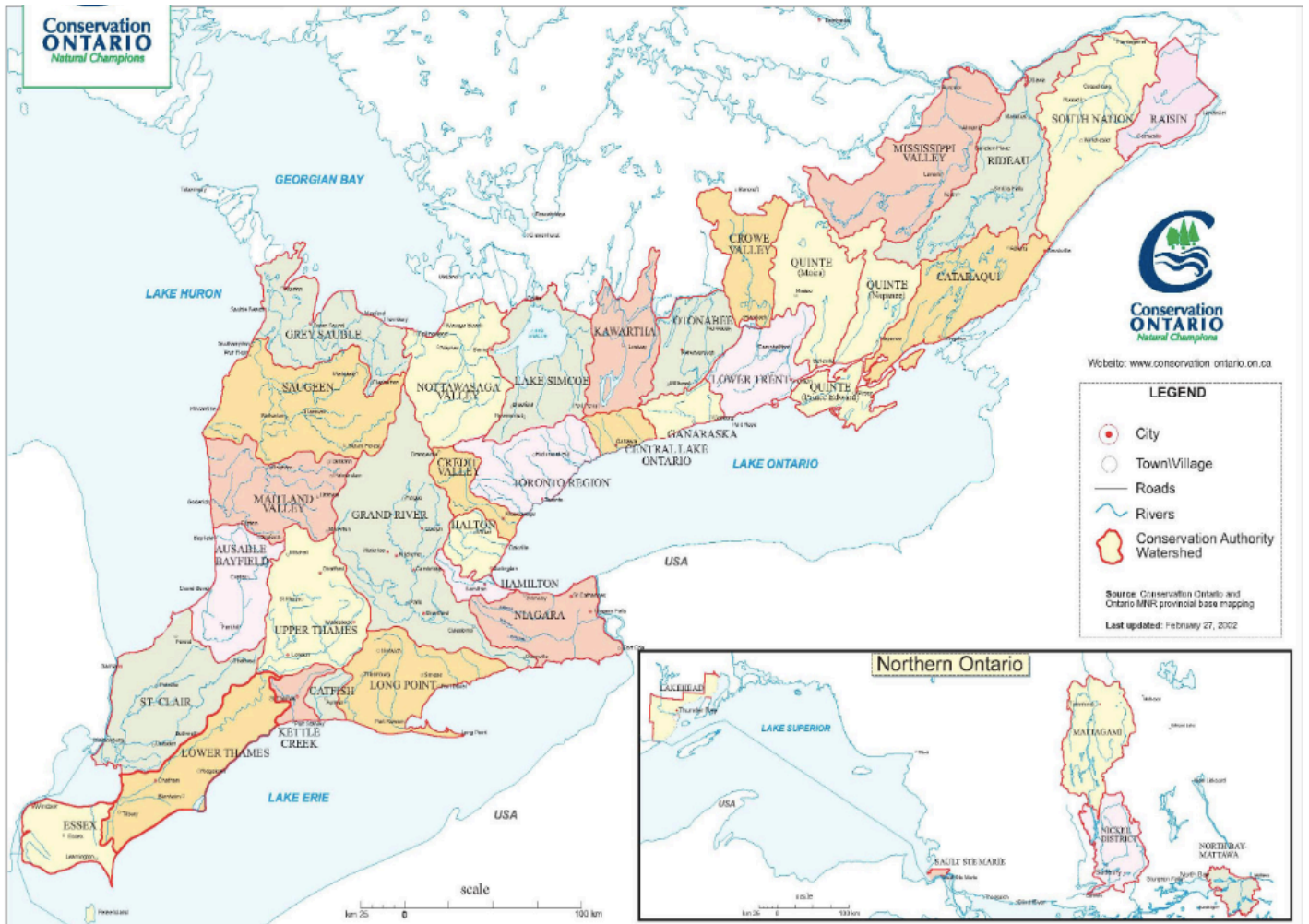


Figure 1: Map of Conservation Authorities in Ontario (Greenbelt Ontario, 2014).

Figure 2 below contains a map of the source protection areas and regions that were established under the *Clean Water Act*.

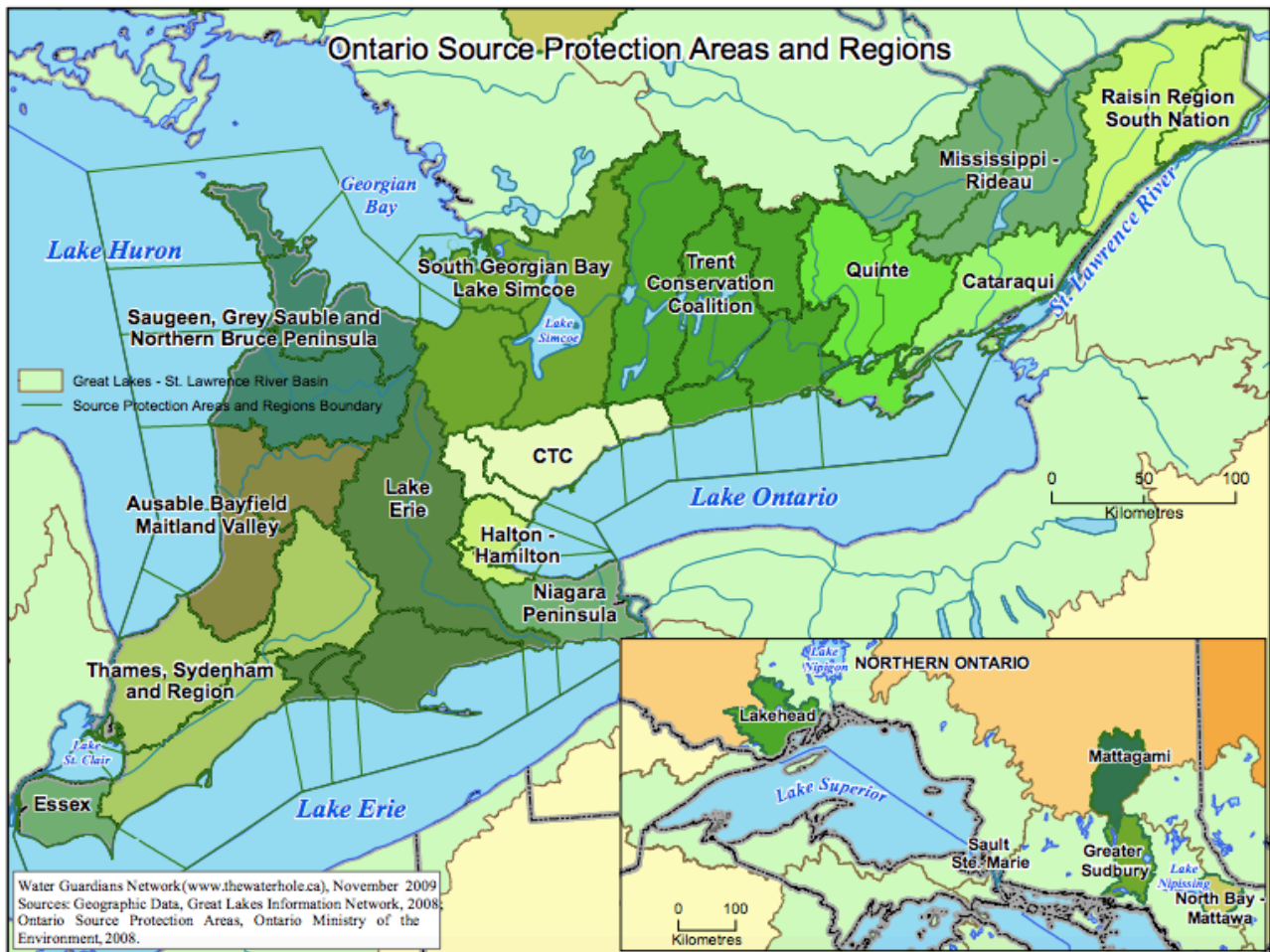


Figure 2: Map of Source Protection Areas and Regions in Ontario (Canadian Environmental Law Association 2009).

Some of the conservation authorities' boundaries were amalgamated to create source protection regions, while the rest of the individual boundaries were retained to constitute source protection areas. In all, 10 source protection regions and nine source protection areas were established under the *Clean Water Act*.

2.6.1.4 Source Protection Committees

The *Clean Water Act* employs a locally-driven process for the development of watershed-based source protection plans by mandating the formation of source protection committees (SPCs) in each source protection area or region by each source protection authority. Under the Act, the SPC members were to be appointed in a manner that ensured the representation of the various interests within the watershed, and the members were expected to adhere to general collaborative principles of inclusion,

deliberation, knowledge sharing, learning, and consensus-building in undertaking their required tasks on the committee (Brisbois and de Loe, 2016). The *Clean Water Act* appears to have created a space for engagement between state and non-state actors for the governance of a local watershed, with the ultimate goal of protecting municipal drinking water sources (Hania, 2013).

The collaborative approach to SWP that was enforced through the *Clean Water Act* can be characterized as a mandated form of collaborative governance. The creation of SPCs for the development of regional source protection plans, and the characteristics of these collaborative planning processes, were legally mandated in the legislation, and the process was overseen by provincial government. Moreover, the multi-stakeholder nature of the SPCs requires that non-state actors form part of the committee membership, and that the SPCs themselves engage in in-person collaborative decision-making in the development of their respective source protection plans.

The purpose of the source protection plans was to identify and manage existing significant threats to water sources, as well as to identify and prevent the development of future potential threats (Grand River Conservation Authority, 2018). SPCs were able to draw from a number of policy tools provided by the *Clean Water Act* so that municipalities, conservation authorities, ministries, and other local agencies could manage these threats. The tools included land use planning policies, prescribed instruments, risk management plans, prohibition, restricted land uses, incentive programs, education and outreach, and other approaches such as stewardship programs, pilot projects, and the promotion of best management practices (Grand River Conservation Authority, 2018). The plans specify which tools are used and the circumstances in which their use is either required or encouraged in order to manage or eliminate the identified significant threats.

As of the present, 38 source water protection plans have been developed by the source protection committees and been approved by the Minister of the Environment, which together protect the sources of more than 450 municipal drinking water systems across the province (Ontario Ministry of the Environment and Climate Change, 2012). The number of completed plans is greater than the number of SPCs because some committees located in source protection regions developed separate plans for the individual source protection areas within the amalgamated region. These plans are currently at various stages of implementation. The responsibility for the implementation of these plans has been devolved primarily to municipalities, conservation authorities, other agencies and organizations, and individual landowners who are implicated through the Act (Plummer et al., 2011). The policy tools available to these various actors for SWP implementation are a function of the existing institutional arrangements for land and water management, as the *Clean Water Act* did not provide a new policy toolkit for implementation (Ivey, de Loe & Kreutzwiser, 2006; Plummer et al., 2011). This means that source

protection plans were to be implemented, through ongoing collaboration with all affected parties, within the existing institutional landscape for water governance.

2.7 Summary

This purpose of this chapter was to provide an overview of water governance, and drinking water governance more specifically, in the Province of Ontario. The chapter first outlined the various elements of the water governance system in Canada, which has been coined one of the most decentralized systems of water governance in the world. It then explained some of the challenges associated with this decentralization in the Canadian context, particularly the jurisdictional fragmentation that has accompanied such a high level of decentralization. In terms of drinking water governance more specifically, this chapter explained how subsidiarity has been the general principle that has guided this endeavor in Canada, wherein provincial governments have increasingly delegated drinking water-related responsibilities to local municipalities, resulting in extreme variation in drinking water protection across municipalities in this regard. This has been the case despite efforts by the federal government to harmonize drinking water standards across the country. The chapter then detailed the history of drinking water governance in Ontario in the pre-Walkerton era, to explain the patchwork of legislation and policy surrounding drinking water in the province, as well as the political and institutional climate that, together with the historical focus on end-of-tap treatment for drinking water, arguably led to the crisis in Walkerton in May 2000. This crisis was explored in detail, including the events leading up to and following that fateful day, the public inquiry into these events, and the resulting recommendations made by then-Ontario Court of Appeal Justice O'Connor for the improvement of drinking water protection in the province. Justice O'Connor ultimately recommended the implementation of a watershed-based source water protection regime, which became enshrined in legislation through the enactment of the Ontario *Clean Water Act* in 2006. Finally, specific elements of this legislation were presented.

3.0 Methods

This chapter will outline the methodology that was utilized to conduct the two main analyses of the present research: the analysis of the Hansard transcripts that detail the contents and discussions of the legislative debates preceding the enactment of the *Clean Water Act, 2006*, and the analysis of the experiences of the members of multi-stakeholder source protection committees that were derived from the meeting minutes provided by these committees, in the development and implementation of their respective source protection plans. The chapter will begin with an overview of the directed content analysis that was undertaken, followed by a rationale for the theoretical framework design that was employed to guide this analysis. It will then lead into the hypotheses that were generated for each component of this framework, which were derived from the findings and theories in the existing literature. The chapter will then discuss the data analysis approach that was undertaken, and will also provide an overview of the sample of source protection committees that was chosen and the rationale for this selection. The chapter will close with the limitations associated with the methodological approach and how this research intended to overcome these limitations.

3.1 Methodological Approach

This research was guided by the question, “How do some of the theorized factors that are claimed to contribute to successful collaboration appear to emerge in practice in collaborative source water protection planning processes across different source protection committees in the Province of Ontario?”. To answer this question, this study employed a qualitative approach. Qualitative research has been well-established as an effective mode of inquiry in the social sciences since the 1990s, and has become a mainstream form of research in this discipline (Merriam, 2015; Yin, 2011). According to Yin (2011), there are five prominent features of qualitative research: studying the meaning of people’s lives and experiences, under real-world conditions; representing the perspectives of the people under study; capturing the contextual conditions of people’s lives; providing insights into existing or emerging theoretical concepts in order to help explain behavior; and using multiple sources of evidence to do so (p. 8). The overall purpose of qualitative research is to understand how people make sense of their experiences and their lives; as such, it generally aims to reveal “how people construct meaning, (and) uncover and identify a phenomenon of interest” (Merriam, 2015, p. 128).

This study utilized a multiple-case study strategy, which has most notably been developed by Robert Yin (2009), and subsequently utilized by many researchers in the environmental governance field. Yin’s working definition for a case study is “an empirical inquiry that closely examines a contemporary phenomenon (the “case”) within its real-world context” (2015, p. 194). Yin posits that “how” or “why” questions are explanatory in nature, and benefit from the use of research strategies such as case studies, as

they deal with “operational links” that need to be traced over time (2009, p. 7). As this research begins with a theoretical proposition, it benefits from the comparison of two or more contrasting or complementary cases, rather than the use of a single revelatory case study (Yin, 2015). However, this study is distinct from a comparative case study, in that it does not seek to compare the experiences among the selected case studies but rather to understand how participants on multiple committees from different watershed regions experienced the factors under analysis, to increase the richness of this analysis and potentially increase the generalizability of its findings.

The primary qualitative method that this research employed was a directed content analysis of two publicly-available datasets: the Hansard transcripts covering the three readings of Bill 43 in the Ontario Legislature, and the meeting minutes of a selected sample of multi-stakeholder source protection committees. A content analysis is defined as “the systematic counting, assessing, and interpreting of the form and substance of communication” (Brians et al., 2011, p. 195). The directed, or deductive, content analysis is used when previous research findings, conceptual frameworks, or theories exist regarding the phenomenon of interest, and the analysis matrix is crafted by these existing theories or research findings (Armat et al., 2018). Thus, the goal of a directed content analysis is to either validate or refine, extend, and enrich an existing theoretical framework or theory, or to offer a contradictory view of the phenomenon under study (Hsieh & Shannon, 2005). A content analysis may be used to answer a research question in the social sciences when there is a physical record of communications among the actors of interest, as long as the researcher is able to access those records (Brians et al., 2011). In the case of the present research, the goal was to utilize existing theories and findings in the collaborative governance literature regarding the factors that are considered to be important for the success of collaboration, and to use the Hansard transcripts to uncover how these factors were considered in the drafting of the Ontario *Clean Water Act* and its prescribed form of collaborative water governance, and to subsequently analyze the meeting minutes of three Ontario source protection committees to further understand and interpret how these factors play out in the actual practice of collaboration.

Importantly, this was not a quantitative study that sought to independently study the effectiveness or success of the Ontario source water protection program, in terms of its effectiveness for the ecological health of the watershed nor the effectiveness of the collaborative process through which the watershed-based source protection plans were developed. Moreover, the purpose of this study was not to pass independent judgment on whether or not the selected factors were problematic throughout the collaborative SWP process. Rather, this study was conducted with the intent to understand how the selected factors, while often considered in the literature to be imperative to the success of collaborative endeavours, were also perceived to be a source of problems, dysfunction, or ineffectiveness by the people who were directly involved in collaboration. This study thus used the information that was derived from

the discussions that were held among these actors about what they viewed as being problematic, and to uncover some potential explanations for these problems where possible, to contribute to the wealth of existing scholarship on this topic with findings from lived experiences of collaborative water governance.

3.2 Rationale for Theoretical Framework

As previously asserted, a directed content analysis is guided by the use of existing theory or prior research on a given phenomenon. The literature review revealed that there are numerous factors that have been identified by scholars as being important for the success of collaboration, and particularly for the collaborative governance of water resources: consensus-building, representation, public participation, financial capacity, power, social learning, and trust-building. Although ideally, all of these factors would be analysed in this thesis to gain more robust insight into how the literature is reflective of the lived experiences of individuals working in this particular collaborative context, it was not conceivable for the author to empirically investigate all six factors that were identified within the scope of this research venture. As such, three factors were selected that will guide the analyses contained in the chapters that follow: representation, public participation, and financial capacity. The overarching rationale for the selection of factors that would act as the theoretical framework for this research was their perceived compatibility with the nature of the datasets that were analyzed, and the type of information that would be able to be derived from these datasets and the ability of the author to draw conclusions about how these factors were perceived as impacting the collaborative water governance program in Ontario.

Despite the notion in the literature that consensus-building, balanced power dynamics, social learning, and trust-building are important to successful collaborative water governance processes, these factors would be difficult to empirically assess through content analyses of the legislative debates and meeting minutes. For instance, with respect to consensus-building, it was anticipated that it would be difficult to capture ideas such as the social pressure to compromise and the group polarization phenomenon without being able to delve into these concepts with participants of the process themselves. Moreover, despite the fact that the meeting minutes do indicate the occurrence of votes undertaken by the committees, and whether or not consensus was reached during these votes, there are limits to the conclusions that can be drawn from this information. Therefore, although consensus-building is considered to be a core element of most collaborative governance arrangements (e.g. Margerum & Robinson, 2015), it was decided that the particular datasets that would be analyzed for the present research would likely not allow for the deeper analysis of this factor required to draw conclusions about its implications in practice.

Recent literature has recognized that an understanding of the power relations that are inherent to collaborative governance processes, and how these dynamics can shape the processes, decisions, and

outputs of collaboration, is a weak point in collaborative water governance research. However, this literature also indicates that power is difficult to study empirically; given the proposed data set, it would be difficult to meaningfully, or even reasonably, analyze power in the Ontario SWP process, and to draw conclusions about this element from an analysis of the meeting minutes alone. To do so on a robust and defensible basis would require the conduct of interviews with key informants to the SWP process, which is beyond the scope of the present research.

Social learning and trust are generally considered to be two factors that contribute to successful collaboration, and also outputs that are indicative of successful collaboration. However, the effective empirical investigation of social learning and trust-building in collaborative processes arguably requires the researcher to measure changes in actor characteristics and behavior over time (Vinke-de Kruif, Bressers & Augustijn, 2014). Thus, they would be most effectively studied longitudinally and through the use of either field observations or in-depth qualitative interviews, or both, in order to gauge individuals' specific experiences and perspectives, and how they change throughout the process. Moreover, it was anticipated that these factors would not be discussed explicitly by SPC members, as they are not necessarily tangible goals of the collaborative SWP process in Ontario, but rather would emerge in the specific interactions that occurred throughout the process, which arguably cannot be measured through an analysis of the record of discussions.

In contrast, the three remaining factors were determined to be reasonably suited for identification and deeper understanding through the content analyses undertaken in this thesis. Inferences regarding the substantive representation of SPC members across each of the committees could be made by compiling the publicly-available attendance records for each of the committees and deriving descriptive statistics from these records for absenteeism and turnover, patterns among SPC members over time. In terms of public participation, because there were mandatory requirements in the *Clean Water Act* that prescribed the extent and type of public consultation that was to be undertaken, at a minimum, by each source protection committee, it was anticipated that these activities would be discussed at SPC meetings and thus present in the meeting minutes. The author believed there to be ample opportunity to gain insight into the perceptions of public participation in the Ontario SWP program due to its mandatory nature. Moreover, detailed overviews of the public participation processes that were undertaken by each of the case study SPCs is provided in the source protection plans for these regions, providing a reliable secondary set of data to corroborate findings from the content analysis of the meeting minutes. Finally, as the Ontario SWP program is overseen by the provincial government, and specifically by the Ministry of the Environment and Climate Change (formerly the Ministry of the Environment), the author believed it would be a worthwhile endeavour to analyze source protection committee members' experiences with financial capacity in a collaborative governance setting in which funding stemmed entirely from the top-

down for all of the collaborative activities. It was anticipated that, in the dialogue of the meeting minutes, discussions regarding finances would be present and would provide insight into the financial capacity for the various phases of the Ontario SWP program.

Another reason that the selection of these factors made sense for the present research is their prominence in the recommendations that were made by Justice O'Connor in the wake of the Walkerton incident. With regards to representation, the Report stated that the province should adopt a watershed-based planning process that is led by the Ministry of the Environment and that involves local actors directly in this planning (O'Connor, 2002). In terms of public participation, the Report stated that the SWP process should be "completely open to public scrutiny," and that local considerations should be accounted for in the development of source protection plans (O'Connor, 2002). Moreover, the Report explicitly recommended that the source protection plans be developed through "an inclusive process of local consultation" (O'Connor, 2002, p. 18). The Report further recommended that farm-level source protection planning be an element of the mandated source water protection process, implying that committees should engage with landowners in the watershed regions (O'Connor, 2002; Carter, Kreutzwiser & de Loe, 2005). Finally, in terms of financial capacity, Justice O'Connor recommended that the province help to fund the development of the source protection plans, and ensure that sufficient funds are available throughout the process to "complete the planning and adoption of source protection plans" (2002, p. 19).

3.2.1 Interconnectedness of Factors

The literature on collaborative governance provides no shortage of factors that may hinder the ability of multi-stakeholder groups to effectively or efficiently engage in joint-decision making to address complex public problems. It is important to recognize that the factors that have been examined in this paper are not necessarily mutually exclusive. For example, concerns related to public participation might not be separable from concerns about the financial capacity of a given collaborative group, nor from the scope of public engagement that may be prescribed in government-led processes. Conversely, the impacts and issues associated with a lack of public participation in collaborative governance may be exacerbated in collaborative processes that do not include adequate representation from a range of interests in a given watershed. This suggests that the issues that will be explored in this research cannot be explored in isolation from one another.

Despite the conceptual inextricability of these issues, each issue can be empirically observed in its own light through the analysis of the datasets used in this research. Moreover, I contend that there is merit in investigating the occurrence of these issues by this methodology, in order to confirm the existing

theoretical connections among issues, to discover new connections, or to even observe different issues that might occur in practice in collaborative governance processes.

3.3 Hypotheses

This thesis tests a number of hypotheses that were derived from the literature on collaborative water governance relating to representation, public participation, and financial capacity as factors that contribute to the success and effectiveness of collaboration for water resources management that drive the present research. This section presents the hypotheses for the prevalence of each of these factors in the content analyses that will follow.

3.3.1 Representation

It is expected that issues associated with achieving substantive representation within source protection committees will emerge as a finding from the analysis of the meeting minutes, which will be measured by the absenteeism and turnover rates within each SPC. In particular, following the literature on the subject, it is expected that these issues will be more prevalent among members belonging to the public interest sectors on the committees (Sabatier et al., 2005; Ansell & Gash, 2007; Gerlak, Heikkila & Lubell, 2013; Dutterer & Margerum, 2015). Specifically, it is hypothesized that SPC members belonging to the public interest sector will report higher absences from official committee meetings than will members from the municipal or economic sectors. With regards to turnover, it is hypothesized that turnover rates will be higher among SPC members belonging to the public interest sector than among those from the municipal or economic sectors.

3.3.2 Public Participation

It is anticipated that the institutionalized nature of public engagement in the *Clean Water Act* for the purposes of SWP will mitigate some of the identified barriers to public participation in collaborative processes. For example, some scholars assert that a lack of prescription in terms of how public participation should be undertaken can lead to collaborative organizations' sidelining of these efforts in favour of other pursuits (e.g. Sabatier et al., 2005; Margerum, 2011). However, the Act sets out explicit provisions for public consultation activities of SPCs, including the dissemination of information to the public and the holding of public consultation sessions throughout the SWP planning process. It is therefore expected that these and other provisions will preclude the notion that public participation often remains only "in the realm of rhetoric" as described by Walker and Hurley (2004), and that source protection committees will have many opportunities to engage with the public in a deliberative manner that will garner what they perceive to be meaningful participation.

3.3.3 Financial Capacity

Finally, with regards to financial capacity, it is expected that, although the collaborative SWP process is mandated through provincial legislation, and therefore does not rely on fundraising from the bottom-up as do other collaborative arrangements, the top-down provision of funding will still prove to be problematic for the SPCs at both the organizational and participant levels. This is derived from claims in the literature related broadly to decentralization asserting that the devolution of authority and responsibility tends to occur without a simultaneous downloading of sufficient financial capacity, which effectively undermines water governance at the watershed scale (Dunn, Harris & Bakker, 2014; Jetoo et al., 2015). It also reflects claims in the literature that the allocation of funds through a mandate can be done in a narrow manner that is insufficient to support the wide range of tasks and activities that are often required to be undertaken by collaborative organizations in meeting their objectives (Margerum, 2011).

3.4 Data Analyses

3.4.1 Analysis of the Legislative Debates Surrounding Bill 43

To frame the second analysis, which will empirically investigate whether the chosen factors from the literature appear to occur in practice in the Ontario SWP program, an analysis of the legislative debates that preceded the enactment of the enabling legislation for this process was first conducted. The legislative debates are contained within the Hansard transcripts of the Legislative Assembly of Ontario, and constitute the official record of House debates. The Hansard transcripts contain a record of what is said, the votes that are taken, a list of members and their ridings, and a list of committees and committee members for each debate that occurs in the Legislative Assembly of Ontario. The *Clean Water Act* underwent three Readings between December 2005 and October 2006, and was also debated at a number of Standing Committee on Social Policy meetings during the summer of 2006.

Data from all of the Hansard transcripts for Bill 43 were compiled and uploaded to QSR NVivo 12. First, these transcripts were read in their entirety to gain familiarity with the data as well as a sense of the whole of the discussions that were held over the course of the debates on Bill 43. Next, each set of transcripts was read word for word, and the data was coded in the NVivo software. Coding was deductive and guided by the three theorized limitations of collaborative water governance that frame the current research. The coding was organized using the three top-level nodes of Representation, Public Participation, and Financial Capacity. As the debates were coded and further sub-themes relating to these top-level nodes emerged, these sub-themes were delineated accordingly.

While not the primary focus of inquiry of this thesis, this preliminary analysis was conducted to provide important context into the shaping of the *Clean Water Act* and its regulations. The author believed that this context would be useful for framing the subsequent analysis, which delved more deeply

into the limitations that source protection committees faced in practice while operating under the mandate of the *Clean Water Act*. This preliminary analysis was also intended to provide useful insight into whether and how elected officials viewed limitations relating to collaborative water governance as potentially impacting the effectiveness of the Ontario SWP process, and how the discussions that occurred in the Legislature regarding these issues appeared to be reflected in the content of the legislation.

3.4.2 Analysis of Collaborative Water Governance Factors in the Ontario SWP Process

A directed content analysis was again used to analyze the meeting minutes from the case study source protection committees. As with the first analysis, the three factors selected from the existing collaborative water governance literature were used to guide the contextual analysis of the meeting minutes.

As per s. 20 of O. Reg 288/07 under the *Clean Water Act*, each official SPC is required to keep minutes of its meetings and publish these minutes on the Internet in an open access format. The author thus had unrestricted access to the meeting minutes published by each committee. The data from all of the meeting minutes from each of the SPCs were compiled and uploaded to QSR NVivo 12. The files were organized by committee, and then by year and month in which the meetings took place. Each of the meeting minute documents were read first in its entirety, and then word for word and simultaneously coded in NVivo. Again, coding was deductive, and was guided by the three factors that guided the study. The codes were again organized using the three top-level nodes of Representation, Public Participation, and Financial Capacity. As the debates were coded and further sub-themes relating to these top-level nodes emerged, the author again delineated these sub-themes.

Following this coding exercise, the resulting data sets were analyzed first individually, to identify the elements of the discussions that were related to the limitation themes of interest, and then were compared with one another in order to identify key similarities and differences among the cases. This cross-case analysis has the potential to reveal the contextual factors that may have affected the experiences of the various committees in terms of the limitations they faced, the strategies they utilized (or did not utilize) to attempt to overcome these limitations, and how these limitations appeared to impact their experience with collaborative water governance as a whole.

In order to provide further context into the discussions that were evident in the meeting minutes, various documents produced by each SPC were also analyzed. These documents include the rules of procedure, the terms of reference, the assessment reports, and final source protection plans. These are each available on the source water protection websites of each committee. The information obtained from these documents was used to corroborate the findings from the detailed content analysis, and as well to confirm the various activities of each of the committees.

In addition, to analyze particular components of the three factors, sets of descriptive statistics were also compiled from the information in the meeting minutes. Descriptive statistics are defined as “a mathematical summarization of the data where a large number of observed values are mathematically converted into a few numbers” (Schreiber, 2008). The objective of descriptive statistics is to describe the properties of the data that were collected by the researcher, in order to identify key trends or patterns in the data (Schreiber, 2008). Specifically, to analyze substantive representation on source protection committees, the attendance records for each of the committees studied in this research were compiled, and the total absenteeism for each voting member on each committee was tallied. In order to derive and compare absenteeism by sector (municipal, economic, and public interest), the members were organized by the sector they represented on the committee, and the absences were aggregated for each sector.

A similar approach was utilized to determine the turnover rates within each of the sectors represented on the committees. The resignation of voting committee members, as well as the appointment of new members, were tracked for each committee, and the results were organized by sector to determine which sector in each committee appeared to have the highest turnover, and conversely which had the lowest. For this portion of the analysis, only turnovers that occurred before the mandatory turnover provision in O. Reg. 288/07 was implemented were counted.

3.5 Case Studies

3.5.1 Rationale for Case Selection

The selection of the source protection committees to be used as case studies in this research was done through purposive sampling, following Merriam (2015). According to this author, purposive sampling is “based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned” (Merriam, 2015, p. 129). Purposive sampling also is described as the selection of “information-rich” cases, which are cases from which the investigator can learn a great deal of information about the issues of central importance to the purpose of the study (Merriam, 2015). This type of sampling thus requires the establishment of criteria for case selection.

The first selection criterion for this research was that the meeting minutes of the SPCs to be studied must be publicly available. An initial screening was undertaken of all 19 SPCs that were established under the *Clean Water Act*, to first eliminate those SPCs that did not have their meeting minutes published on the Internet available. The second selection criterion for this research was high-quality meeting minutes. As meeting minutes that are more readily available and detailed are considered to be more useful for re-creating decision-making processes (Hui, Ulibarri & Cain, 2018), only the meeting minutes that contained in-depth descriptions of events and conversations that occurred during the

meetings were selected for potential inclusion in this research. Together, these selection criteria narrowed the sample size to seven SPCs.

The third criterion was source protection region size, which was determined by analyzing the remaining SPCs' final source protection plans and comparing the physical geographical size of each region (where available), the number of municipalities within the region, and the number of drinking water systems that serve its residents. The size of the remaining SPCs' membership was also identified, because the membership size of each SPC was determined by the size of its source protection region and was also reflective of the number of watersheds that are implicated and the number of local governments responsible for implementation. This consideration is in line with the assumption that as the size of the collaborative forum increases, the more complex the collaborative process and the greater difficulty for the collaboration to make collective decisions (Choi & Robertson, 2014; Brisbois & de Loe, 2016). It was through this final criterion that the Lake Erie Region SPC ("Lake Erie SPC"), the Ausable Bayfield and Maitland Valley SPC ("Bayfield SPC"), and the Trent Conservation Coalition SPC ("Trent SPC") were chosen as case studies, which contain 24, 15, and 24 members respectively. In addition, while each SPC has a strong agricultural presence, they differ from one another in terms of major industry and/or economic membership. Moreover, all three SPCs include representation by environmental groups or individuals. It was anticipated that the differing compositions of the SPCs would provide interesting insights into whether or not the selected factors were impacted by the composition of players sitting at the collaborative table.

3.5.2 Overview of Case Studies

3.5.2.1 Lake Erie Region Source Protection Committee

The Lake Erie Region Source Protection Committee ("Lake Erie SPC") covers the Lake Erie source protection region, which covers an area of 10,710 square kilometers. The region consists of four source protection areas: Catfish Creek, Grand River, Kettle Creek, and Long Point Region, which together contain 52 municipalities and two Indigenous reserves, as well as 63 drinking water systems that serve approximately 900,000 residents. The region relies on both surface and groundwater sources of drinking water, with surface water primarily coming from Lake Erie intakes. However, groundwater constitutes more than 80 percent of the water supply in the Grand River source protection area.

The Lake Erie SPC has 24 members, including seven municipal representatives, seven economic sector representatives (comprised of three agriculture, three business and industry, and one aggregate industry representative), and seven public interest representatives. The committee membership also contains three non-voting First Nations representatives. Three additional non-voting liaison seats on the committee were also granted to a provincial liaison named by the Ministry of the Environment, a

representative of the Lake Erie Region health units, and a representative of the four conservation authorities in the region.

3.5.2.2 Ausable Bayfield Maitland Valley Source Protection Committee

The Ausable Bayfield Maitland Valley Source Protection Committee (“Bayfield SPC”) covers a source protection region consisting of the Ausable Bayfield and Maitland Valley source protection areas. The region contains four counties and 25 municipalities in whole or in part that are serviced by 27 municipal groundwater well systems and two Lake Huron surface water intakes. Residents who live in the region’s towns are serviced by the municipal drinking water systems, while those residing in rural areas receive their water from individual or communal wells.

There are 15 members on the Bayfield SPC, including five municipal representatives, five economic sector representatives (comprised of three agricultural, one commercial, and one industry representative), and five public interest representatives. The Bayfield SPC also initially provided three First Nations seats, as well as one representative from the Ministry of the Environment and Climate Change, one representative of the source protection authorities, and one public health representative.

3.5.2.3 Trent Conservation Coalition Source Protection Committee

The Trent Conservation Coalition Source Protection Committee (“Trent SPC”) covers an area of approximately 14,500 square kilometers, and consists of the Crowe Valley, Kawartha-Haliburton, Lower Trent, and Otonabee-Peterborough source protection areas. It includes the entire Trent River watersheds, as well as two other watersheds: the southern portion of the Lower Trent source protection area, which drains into Lake Ontario and the Bay of Quinte, and the Ganaraska Region source protection area, which drains into Lake Ontario. The Lower Trent Conservation Authority acts as the lead source protection authority for all five source protection authorities that are located in the region. The Trent source protection region contains 37 municipalities in whole or in part. Residents are served by 52 drinking water systems, including 34 groundwater systems and 18 surface water systems.

The Trent SPC has 24 members, including seven municipal representatives, seven economic sector representatives (three agricultural, one recreation and tourism, one aggregate and mining, and one economic development representative), as well as seven public interest representatives. First Nations representatives also hold three seats on the Trent SPC, alongside three additional non-voting members representing the Ministry of the Environment and Climate Change, the source protection authorities in the TCC region, and regional health units.

3.6 Limitations of Methodology

There are some limitations to the methodology that was chosen to direct this research project. For example, there are many criticisms against the use of case studies, primarily due to their presumed lack of generalizability and issues associated external validity, or with generalizing from a single or a few cases (Yin, 2009). While this thesis would ideally study all of the source protection committees across the province of Ontario, there are inherent limitations to its scope and subsequently the number of cases that can realistically be studied. However, Yin (2009) also states that the presumed issues with external validity are not necessarily so, as case studies are generalizable to theoretical propositions, rather than to populations or universes; the goal of case study research is thus to expand and generalize theories, rather than to generate statistical generalization. The multiple-case study strategy that was employed in this research was intended to use information from actors directly involved in collaborative water governance about what they view as problematic in their particular settings, and to be able to apply these experiences to existing theories on collaborative water governance and potentially expand on these theories. It does not claim to provide an understanding of the universal experience of collaboration at the watershed level across Ontario or any other settings.

Additionally, there are some cited limitations with a reliance on content analysis to derive empirical evidence to explain complex phenomena. Perhaps fundamentally, the coding of the debates and meeting minutes is an inherently subjective exercise (Brisbois & de Loe, 2016). While this interpretive aspect of content analysis can provide interesting insights, outside readers have no means of knowing whether or not these insights are valid (Sabatier et al., 2005). This has potential implications for the validity of the findings, as validity is primarily concerned with “the integrity of the conclusions that are generated from a piece of research” (Oleinik, 2010). Just because a pattern of themes is repeatedly observed does not guarantee that the accurate meaning of the text has been interpreted (Oleinik, 2010). Moreover, different people who observe the same phenomenon can “see” different things, calling into question the generalizability of the conclusions that are reached through content analysis (Sabatier et al., 2005). It is also difficult to know the purpose of a particular communication, or the degree of access that has been granted to the researcher in terms of being able to discern its true authenticity (Brians et al., 2011). For example, while the meeting minutes of the source protection committees are made publicly available, there is no way for the researcher to determine whether these minutes constitute the full range of discussions that were held by committee members, nor whether certain aspects of the discussion were removed from the record prior to their publishing. This results in a certain level of uncertainty and can fuel skepticism surrounding the data itself (Brians et al., 2011).

However, although there are limitations associated with content analysis and the use of meeting minutes to derive meaning about complex phenomenon, meeting minutes can also be a useful source of

data in terms of offering a “real time” view of events that occurred in the past, and offer the opportunity for the researcher to examine how dialogue and meeting attendance evolved over time (Hui, Ulibarri & Cain, 2018). The transcript-like characteristics of the meeting minutes from the selected source protection committees allowed for the interpretation of discussions that were held among SPC members and provided insight into the challenges they faced with regards to representation, public participation, and financial capacity.

4.0 Legislative Debates Analysis: Findings and Discussion

Government Bill 43, “an Act to protect future and existing sources of drinking water and to make complementary amendments to other Acts (the Clean Water Act)” was introduced in the Legislative Chamber of Ontario on December 5, 2005. The Act was debated during nine sittings of the second session of the 38th Parliament, as well as during seven Standing Committee on Social Policy meetings, before being adopted by the Legislature and receiving Royal Assent on October 19, 2006. This bill was slated as a complex piece of legislation and was amended over 200 times throughout the legislative process.

This chapter details the results of the content analysis of the legislative debates on Bill 43, and how representation, public participation, and financial capacity in the proposed collaborative SWP process were debated in the Legislature. This analysis revealed that each of these factors were debated to varying degrees and in different contexts. Specifically, this chapter explains the context that led to the initial design of the bill by the Ontario Government, and how it was amended as a result of these debates. This chapter will frame the subsequent analysis of how the collaborative SWP processes appeared to unfold in practice within the three source protection committees that I use as case studies in the next chapter.

4.1 The Ontario Legislature and Collaborative Water Governance

Overall, the analysis of the debates revealed that MPPs were largely in favour of the collaborative water governance components of the bill. In his opening statement, the Minister of the Environment touted the bill as “unprecedented legislation” that “took very seriously” the recommendations made by Justice O’Connor. Although the concept of “collaborative water governance” was not explicitly mentioned throughout the debates, there were some positive statements made by MPPs that were related to the notion of collaboration. For example, one MPP from the governing party asserted that Bill 43 was “something new and important for Ontario” that “provides a much more effective basis for long-term planning and getting back to the original roots of conservation authorities in Ontario.” He also stated that “one of the key aspects of this process is the government’s commitment to ensure that every local source protection plan is developed co-operatively, with the broad participation of all stakeholders in the community.”

MPPs from other parties also implicitly recognized the collaborative aspect of the bill. One backbencher MPP stated that she welcomed the legislation, and she also welcomed “getting the dollars out at the grassroots level.” Opposition MPPs seemed to be in favour of moving away from imposing top-down regulations for achieving the goals of SWP, and that it was more palatable that the policy decisions

to address threats to drinking water stem from the various stakeholders in the watershed region, and that this was done through an open and transparent process. One Opposition MPP in particular was adamant that an undesirable result from this legislation would be increased enforcement, particularly for farming communities, stating that “we want co-operation so that they could work with the agricultural community, [and] develop a risk management plan that they work on together.” These sentiments appear to imply that a truly collaborative approach, situated and funded at the local level, was the preferred path for addressing threats to source water quality for drinking water protection.

Perhaps most tellingly, while specific elements of the proposed collaborative process were debated and criticisms made during the debates in order to strengthen it, there were no alternative models to collaborative water governance that were presented to the Legislature by any MPP. For example, as will be detailed in the sections that follow, MPPs were concerned that the bill would result in downloading onto municipalities and landowners. However, this issue had less to do with the idea of collaborative governance in and of itself, and more with the idea that adequate funding for its implementation at the local level was guaranteed. This further implies that there was no real opposition to the fundamental idea of collaboration as the governance model for SWP in Ontario, and that there was appetite from all political parties for drinking water protection at the watershed level.

4.2 Representation

4.2.1 Representation in Bill 43

When Bill 43 was first tabled to the Ontario Legislature in December 2005, it included some provisions about who would be represented in the collaborative SWP process. It stated in s. 7(2) that all source protection committees were to have a maximum of 16 members, including the committee chair. It also stated that each source protection authority was responsible for establishing a drinking water source protection committee in their designated source protection region, but did not include details regarding the specific mechanism that would be established to appoint individual members to these committees. However, it did include provisions for the appointment of committee Chairs, which was to be done by the Minister after considering recommendations made by the source protection authority.

Bill 43 also outlined the roles and responsibilities of the various entities involved in the collaborative SWP process. Source protection authorities were responsible for assisting their source protection committees in performing their duties under the Act, and for providing to them technical, scientific, and administrative assistance and resources. Source protection committees were responsible for preparing terms of reference, assessment reports, and source protection plans for each of the source protection areas in their watershed region, and submitting these documents to the designated authorities outlined in the Act. Municipalities were also specifically able to request that additional drinking water

systems be considered for inclusion in the SWP planning documents. Moreover, municipalities could prepare a source protection plan for areas in parts of Ontario that were not covered by the source protection regime established in the legislation. They were also responsible for enforcing the regulation of drinking water threats prescribed by the source protection plans. Finally, source protection committees were given authority over municipal planning decisions, to the extent that no municipality nor municipal planning body would be able to perform any work that conflicted with the official source protection plan for that area.

4.2.2 Representation in the Debates

At the outset of the debate, multiple MPPs raised concerns regarding the composition of the proposed source protection committees, specifically in terms of their size and who would be sitting on them. MPPs of the governing party remained adamant that the SPCs would have fair representation and would effectively “replace the old piecemeal approach to water protection with something broad and inclusive.” However, for opposition MPPs, any prescription of membership size in the legislation amounted to an inflexible approach to watershed-based source protection planning, due to the differing sizes of watershed regions and their unique configurations of sectoral interests. The Critic for the Environment asserted that “every (watershed) area is going to be different,” possibly alluding to the notion that a one-size-fits-all approach to committee composition under the legislation would not be effective. Later, this same MPP noted that while a “cookie-cutter approach” to committee composition was undesirable, the legislation should still ensure consistency across the province in terms of equal representation from various interests.

These sentiments suggest that there was a fine balance to be achieved in the legislation in terms of its levels of prescription and flexibility for source protection committee membership. While the MPPs agreed that membership size itself should not be prescribed as an absolute number for all source protection regions or areas, they still wanted assurance that adequate representation from various groups within each watershed would be somehow mandated through the Act. This particular debate appears to reflect the normative sentiment in the literature that a fundamental aspect of collaborative approaches to environmental management is that they are flexible to adapt to local contexts (e.g. Moore & Koontz, 2003).

In terms of specific stakeholder representation on source protection committees, opposition MPPs presented concerns from three main stakeholder groups: farmers and landowners, industry, and municipalities. Opposition MPPs representing rural ridings relayed concerns of their constituents in arguing that, because farmers and landowners across the province would be charged with the responsibility to alter their practices in accordance with source protection plans, and thus “bear the

potentially negative economic consequences of source water protection,” that the Act should ensure there is adequate representation of agricultural interests on source protection committees during the plan development phase. Another main component of landowners’ and farmers’ concerns with the source protection committees, relayed again by Opposition MPPs, was related to the knowledge and expertise of committee members. These MPPs asserted that a lack of agricultural representation on SPCs would result in decisions being made by people who may not be familiar or have adequate experience in this area.

This sub-theme relating to the qualifications, knowledge, and expertise of source protection committee members was raised not only by MPPs representing farmers and other rural constituents, but also was a fundamental concern of MPPs advocating for industry interests. In particular, in speaking on behalf of the mining industry, one Opposition MPP argued that most of the people sitting on source protection committees in watersheds that contain a mining economy will have “no experience” with that particular industry, “no expertise” in source water protection issues, and “no appreciation” for the existing regulatory structure to which the mining industry in Ontario was already subject. She relayed fears that, if the dominant industry sectors in a given region are not adequately represented on source protection committees, and committees are tasked with the identification of risks to source water from activities stemming from these sectors, this would pose a threat to major industry sectors by presenting potentially unnecessary delay and uncertainty in their activities. These concerns appeared to be related closely to other concerns raised by this Opposition MPP about “handing over authority to those new to these issues,” and how this posed an “unnecessary risk” to industries across the province.

Finally, Opposition MPPs often expressed the viewpoints of municipalities with regards to representation, and more specifically in terms of their role in the decision-making processes of the SPCs. It was frequently argued by these MPPs, representing both urban and rural ridings, that although municipalities would be saddled with increased responsibilities under the *Clean Water Act* for the implementation of source water protection, they were not being granted sufficient decision-making powers at the outset of the process. The Opposition frequently stated that this was unfair for municipalities, who were “being asked to take on a lot” under the legislation in terms of implementation, monitoring, and enforcement, yet were not given any more authority than other SPC members in decision-making. The general sentiment from the Opposition was that municipalities should be granted more of a leading role in the development of source protection plans, by virtue of their authority over local planning decisions under the *Planning Act*. In particular, one MPP argued that “as a minimum, if they're requiring municipalities to be the implementers, then surely they should be given every opportunity to endorse or approve requirements at every opportunity in the process.” It thus appears that increased municipal representation in collaborative decision-making was considered to be imperative by virtue of their implementation responsibilities under the *Clean Water Act*.

There was also the perception that increased municipal responsibilities for implementation, paired with their shared or reduced decision-making authority over source protection plans, would result in municipal powers being devolved to appointed (unelected) source protection committees. Bill 43 stated in section 36(1) that any municipal council or municipal planning authority with jurisdiction in an area covered by the source protection plan must amend its municipal official plan to conform with it in instances of non-conformity. An official plan is prepared by a municipal council or planning board, in consultation with the public, and outlines the land-use policies of municipal councils or planning boards. Once in effect, it guides all of a given municipality's planning decisions (Ministry of Municipal Affairs and Housing, 2018). The *Planning Act* provides the basis for the preparation of official plans. Some MPPs relayed fears from municipalities that their legislated powers over land use activities and planning, as well as over enforcement tools including zoning and other by-laws, would be overridden by land use decisions made by the source protection committee in their region, due to municipalities' relative lack of power on these committees.

Concerns regarding the abrogation of municipal authority by appointed source protection committees appeared to appeal to broader concerns about representation. While municipal governments are elected representatives of their constituents, the proposed Bill 43 stated that committee members would be appointed by their source protection authority, who is actually a conservation authority appointed to that role by the Minister. This provision presented an issue for mainly Opposition MPPs who argued that those source protection committee members who were not municipal representatives would be unelected, and by extension unaccountable, to the public. Opposition MPPs were concerned that the committees were being given "an enormous amount of responsibility" and "a great deal of latitude and power" in developing source protection plans that would, in turn, have the legal authority to supersede existing municipal plans or zoning bylaws.

The prevalence of this issue suggests that the idea of decision-making by unelected committees, over activities that have been predominately of municipal domain, is a difficult concept for which to garner support. It was apparent that this concept was made more difficult due to the appointment mechanism for selecting SPC members in the legislation. One Opposition MPP argued that, if a committee is "set up politically, then other people are not going to be able to work with that committee and we're going to be no better off than we are right now." Rather than employing such a tactic for appointing members to these committees, some MPPs appeared to prefer to see legislation that enabled a more democratic process, and specifically that the *Clean Water Act* should permit any member of the public who wishes to participate on SPCs to apply for membership through an "open and transparent process." The impact of stakeholder representation on SPCs therefore appears to go beyond concerns

regarding the general makeup of these committees, but also the authority that SPC members would be given to make public decisions.

The question of First Nations membership on source protection committees was the subject of some debate during the consultations on Bill 43. Citing the importance of indigenous traditional environmental knowledge for the protection of water resources, multiple members argued that the expertise of First Nations communities should be an integral component of the source protection planning process. While the proposed legislation laid out in its provisions the option for First Nations communities to participate on source protection committees, some members argued that First Nations membership on committees needed to be mandatory, particularly in source protection regions or areas that were located on all or part of First Nations' traditional lands. Conversely, one backbencher MPP argued that Bill 43 "doesn't affect First Nations, because First Nations are not under this particular legislation," in that the SWP regime of the *Clean Water Act* did not extend to protecting First Nations communities' water supplies.

Although beyond the scope of this research, the debate centering around First Nations representation on source protection committees is part of a much larger present-day discussion about water quality on Indigenous reserves, and the intergovernmental conflicts surrounding the abysmal state of on-reserve drinking water. The direct involvement of First Nations in the provincial source water protection program via representation on SPCs was presented with a level of uncertainty throughout the debates. While MPPs widely recognized the fiduciary responsibility of the federal government for First Nations communities, some still advocated for a stronger provincial role in ensuring their access to clean water, and even for transferring this responsibility from the federal government to the province. Others, however, maintained that the federal government must not be "let off the hook" when it comes to providing financial and other capacity to First Nations water protection.

4.2.3 Representation in the Clean Water Act

Some of the regulations under the *Clean Water Act* appeared to address some of the issues that were raised during discussions on the composition of source protection committees. Whereas initially, Bill 43 imposed a 16-member limit for all source protection committees across the province, Ontario Regulation 288/07 (O. Reg. 288/07) introduced a more flexible and context-specific approach to membership size. It provided a formula for determining the number of members that must participate on a given SPC as a function of the size of its source protection area or region. A copy of the table contained in section 1 of O. Reg. 288/07, outlining the number of committee members for source protection areas and regions, is provided below.

TABLE
NUMBER OF MEMBERS

Item	Source Protection Area or Source Protection Region	Number of Members
1.	Ausable Bayfield Maitland Valley Source Protection Region	16
2.	Cataraqui Source Protection Area	16
3.	CTC Source Protection Region	22
4.	Essex Region Source Protection Area	16
5.	Halton-Hamilton Source Protection Region	16
6.	Lake Erie Source Protection Region	22
7.	Lakehead Source Protection Area	10
8.	Mattagami Region Source Protection Area	10
9.	Mississippi-Rideau Source Protection Region	16
10.	Niagara Peninsula Source Protection Area	10
11.	Sudbury Source Protection Area	10
12.	North Bay-Mattawa Source Protection Area	10
13.	Quinte Source Protection Region	16
14.	Raisin-South Nation Source Protection Region	16
15.	Saugeen, Grey Sauble, Northern Bruce Peninsula Source Protection Region	16
16.	Sault Ste. Marie Region Source Protection Area	10
17.	South Georgian Bay-Lake Simcoe Source Protection Region	22
18.	Thames-Sydenham and Region Source Protection Region	22
19.	Trent Conservation Coalition Source Protection Region	22

Figure 3: Number of Source Protection Committee Members

In general, SPCs operating in source protection regions, which are described under section 6(1) of the *Clean Water Act* as being formed by the Minister by consolidating two or more source protection areas into a single source protection region, were to have more members than the committees in source protection areas. The largest source protection regions had 22 members and the smallest regions had 16, and while most source protection areas were required to have ten members, larger areas had 16.

In 2015, the last source protection plan was approved by the Minister, completing the plan development phase of the provincial source protection program. Following this, certain sections of O. Reg. 288/07 related to the composition of SPCs were rescinded by the implementation of O. Reg. 310/15. This regulation revoked the initial committee membership section and replaced it with a new section that allowed SPCs more flexibility in choosing the number of committee members required in the implementation phase. A copy of the table contained in section 1 of O. Reg. 310/15 is provided below.

TABLE
NUMBER OF MEMBERS

Item	Column 1 Source Protection Area or Source Protection Region	Column 2 Maximum number of members	Column 3 Minimum number of members
1.	Ausable Bayfield Maitland Valley Source Protection Region	15	6
2.	Cataraqui Source Protection Area	15	6
3.	CTC Source Protection Region	21	9
4.	Essex Region Source Protection Area	15	6
5.	Halton-Hamilton Source Protection Region	15	6
6.	Lake Erie Source Protection Region	21	9
7.	Lakehead Source Protection Area	9	6
8.	Mattagami Region Source Protection Area	9	6
9.	Mississippi-Rideau Source Protection Region	15	6
10.	Niagara Peninsula Source Protection Area	9	6
11.	Sudbury Source Protection Area	9	6
12.	North Bay-Mattawa Source Protection Area	9	6
13.	Quinte Conservation Source Protection Area	15	6
14.	Raisin-South Nation Source Protection Region	15	6
15.	Saugeen, Grey Sauble, Northern Bruce Peninsula Source Protection Region	15	6
16.	Sault Ste. Marie Region Source Protection Area	9	6
17.	South Georgian Bay-Lake Simcoe Source Protection Region	21	9
18.	Thames-Sydenham and Region Source Protection Region	21	9
19.	Trent Conservation Coalition Source Protection Region	21	9

Figure 4: Number of Source Protection Committee Members

Under this new provision, if a source protection authority met various requirements under O. Reg. 310/15, he or she was permitted to either reduce or increase the number of members in a source protection committee to no fewer than the minimum number, or no greater than the maximum number. According to the “Decision on Regulation for Amendments to Ontario Regulation 288/07” posted on the Ontario Environmental Registry in 2015, the changes through O. Reg. 310/15 were made to give source protection authorities the option to change the size of their committee, while maintaining proportionality among its sectoral representatives. The Registry also asserted the importance of retaining the knowledge and expertise of SPC members, acknowledging specifically that members’ understanding of their plan’s policy development would be a valuable asset when evaluating plan implementation and updating the plans accordingly. This notion is aligned with some of the sentiments expressed throughout the debates regarding the importance of a continued role for source protection committees, even after the development and approval of the source protection plans. Furthermore, the changes were cited in the Registry as being important for the purposes of granting “greater local autonomy” to source protection authorities to make this decision for the committee they oversee.

O. Reg. 288/07 also established a set of provisions for the appointment of SPC members by the source protection authority, as well as for the proportion of each interest group that is to have representation on each committee. Section 2 of the regulation set out rules for the general composition of

all source protection committees, in terms of sectoral membership: one third of the appointed members were to be municipal representatives in the region; one third of the appointed members were to reflect the interests of the agricultural, commercial or industrial sectors of the economy of the region, including small business interests; and one third of the appointed members were to reflect other interests of the general public, particularly environmental and public health interests. Ultimately, the appointment mechanism in the bill was maintained in the *Clean Water Act*, disregarding the notion by some MPPs that committee membership should be decided through an open and transparent process. Therefore, although the regulation was prescriptive in terms of the proportion of representation that must be achieved on each source protection committee, the appointment mechanism also granted autonomy to source protection authorities to decide on the particular stakeholders within these groups that would be appointed. For example, while one third of the appointed members were to come from economic interests, it was ultimately at the discretion of the source protection authority to decide from which particular industries these representatives would be chosen.

Section 3 of O. Reg. 288/07 detailed the requirements for municipal representation on committees. The source protection authority was to divide the municipalities in the region into groups, and appoint members from these groups to the source protection committee after consultation with the municipalities. The source protection authority was to “attempt to appoint persons who, as a group, are representative of the interests of all of the municipalities that are in that group.” Although larger source protection regions had by design a larger number of source protection committee members, this provision did not allow a greater number of municipalities to hold formal membership on the committees themselves, relative to other stakeholder groups within the watershed.

On the topic of First Nations involvement, the regulations kept Bill 43’s initial stance on First Nations representation and inclusion. O. Reg. 288/07 set out in s. 6 that “if a source protection area or source protection region includes any part of a band’s reserve,” the source protection authority shall, prior to establishing its source protection committee, give the chief of that band the opportunity for the councils of the band to jointly select a person(s) to appoint to the source protection committee, if desired. The number of First Nations representatives that may be appointed on a given committee is contingent on the size of the committee; that is, one representative for a committee that is of six to nine members, two representatives for a committee with 12 to 15 members, and three representatives for a committee with 18 to 21 members. Rather than making First Nations membership mandatory, the regulations instead merely provided the option for First Nations to appoint official representation on source protection committees, through their own internal selection processes.

4.3 Public Participation

4.3.1 Public Participation in Bill 43

Bill 43 had initially little to say about the involvement of the general public in the collaborative SWP planning process. Sections 11 and 17 of Bill 43 respectively only required that the source protection committees make the terms of reference and assessment reports available to the public once they had been approved by the Minister, “as soon as reasonably possible.” Interim progress reports on the assessment reports were also required to be made available to the public after their submission by the committee. The bill therefore did not require that any form of public consultation on either of these documents prior to their Ministerial approval.

Section 20 stated that the source protection authority was to publish a notice of the proposed source protection plans, as well as instructions for the public on how to obtain a copy of the plan to submit comments on it, prior to its submission to the MOECC for approval. If the Minister proposed amendments to the plans following this initial consultation, the committees were required to again publish notice of these amendments and invite the public to submit written comments. The committees were also required to publish the final, approved source protection plans on the Internet for public accessibility. Finally, committees were required to complete annual progress reports on the implementation of the plans, and to make these reports available to the public upon their submission to the Minister. While the proposed bill required that some form of public consultation be performed by the committees prior to the final approval of the source protection plans, it did not provide any details regarding the nature of this consultation beyond making the plans and any proposed amendments available for public comment.

Despite its ambiguity with regards to public participation processes, Bill 43 did include very specific requirements for municipal consultations. The bill explicitly stated that committees must consult with all of the municipalities located within their source protection region or area in the development of the terms of reference and assessment reports, and that any outstanding concerns that had been raised by municipalities during this consultation and not addressed in the final reports be included in their submission of these reports to the source protection authority. The bill also dictated that source protection committees were to consult municipalities in their preparation of the source protection plans, and to give a copy of the proposed plan to the clerk of each of these municipalities. Copies of proposed amendments to the source protection plans were also to be given to these same clerks, who were to endorse or suggest changes to these amendments. Bill 43 thus appeared to be drafted with the intention to garner the specific support of municipalities throughout the source protection planning process through direct consultation with municipalities for each source protection document. As originally written, these provisions appeared to effectively exclude the general public, aside from their interests being “represented” by their elected municipal officials, from the development of most of the SWP planning documents.

4.3.2 Public Participation in the Debates

Public participation was discussed in numerous capacities in the debates on Bill 43. In fact, in his opening statement during the first tabling of the proposed legislation, the Minister proclaimed that public consultation was “central” to the legislation, and that it would include the public as full participants in the process. Overall, most of the MPPs from all sides of the table expressed support for this general notion. One component of the debate surrounding mandatory public participation appeared to center on principles of democracy, and ensuring that the public perceived the Ontario source water protection planning process to be “fair, transparent, and understandable.” This challenges some normative assertions in the literature that collaborative water governance practices are inherently more democratic than their top-down counterparts. Although many authors contend that accountability, fairness, and democracy are increased in collaborative processes due to their incorporation of multiple and diverse interests (e.g. Borrini-Feyerabend et al., 2013; Margerum & Robinson, 2015; Brower, 2016), the debates on Bill 43 revealed that simply employing a multi-stakeholder, collaborative approach to source water protection would not necessarily translate into greater perceptions of democracy on the part of the public, without also ensuring that there would be meaningful opportunities for their input. As expressed by one Opposition MPP during his presentation in the third reading, “democracies thrive,” but “democracies must have the oxygen of public participation.” It was further emphasized during the debates that “the *Clean Water Act* must be implemented with the understanding and support of local citizens.”

Some MPPs representing rural ridings were adamant that the landowners and farmers in their constituency desired to be consulted with throughout the SWP process in a meaningful and appropriate manner. This particular group would likely be impacted by the legislation through land use restrictions. Thus, the lack of public consultation requirements in the development stage of the terms of reference and assessment reports was a sticking point for rural MPPs in the Legislature. Under Bill 43, these documents had important roles in the development of source protection plans: the approved terms of reference were to guide the preparation of both the assessment report and the source protection plan, and the assessment report would provide the scientific basis for the source protection plan by describing the watershed, identifying vulnerable areas, identifying the type and number of threats to both water quality and quantity, and ranking the potential threats in terms of threat level. Given the importance of these documents, Opposition MPPs contended that landowners and farmers must be given the opportunity to be meaningfully consulted on them prior to their ministerial approval, to correct any mistakes made in terms of threat identifications in or around their lands or involving particular farming practices before they were reflected in the policy requirements of the final plans.

Consultation with landowners on all source protection documents was deemed to be crucial for ensuring that those who would be affected by the eventual source protection plans could evaluate the

identified threats and the proposed mechanisms for addressing them, prior to their enforcement. It was argued that this would improve the strength and accuracy of source protection plans and also provide farmers and landowners with the opportunity to incorporate their knowledge and expertise as “good stewards” of the land into the assessment and planning phases of the process. Opposition and backbencher MPPs advocated for mandatory public participation provisions to be extended in all stages of the SWP planning process to not only engage landowners, but all interested members of the general public, in the development of all source protection documents.

The subject of public hearings sparked some debate in the Legislature, mainly on the part of MPPs representing rural ridings. While some MPPs advocated specifically that public hearings should be a mandatory requirement under the *Clean Water Act* for public consultation on the assessment reports, terms of reference, and source protection plans, Opposition MPPs representing rural ridings expressed a deeper concern that the bill did not “guarantee formal public hearings” with affected landowners and farmers. It appeared as though public hearings were believed to be an integral vehicle for achieving meaningful public involvement in source protection planning. However, it was also emphasized that the timing of these public hearings must be set properly to ensure full and equal participation from the agricultural community. Specifically, it was argued that public hearings for consultation on any reports or plans developed by source protection committees must be held in the winter months, after the summer and fall harvests and before the spring. Speaking to this point, one member stated that “a consultative strategy timed to coincide with the busiest days of the agriculture cycle would clearly be unfair and would skew the input.”

Public participation was also discussed throughout the debates in the context of education. One Opposition MPP, quoting an expert in the field of water resources management, argued that for agricultural and rural communities in particular, resources should be provided so that people have a place to go to learn about the science of water, and of source water protection. Moreover, this MPP stated that for source water protection, there is “a solution first in educating people, providing a resource centre,” and replicating this approach across the province, rather than simply imposing source water protection regulations through legislation. This sentiment was echoed as the debates trialed on, multiple other backbencher and opposition MPPs suggesting that “positive incentives,” such as education, information programs, and other “more effective measures” should be implemented through the *Clean Water Act*.

This argument appeared to juxtapose regulatory and other policy-based tools with “softer” approaches of education and information programs, for achieving the intended goals of source water protection. Opposition MPPs described the bill as constituting the “heavy stick,” and as “bringing down the hammer of rules, regulations, and laws,” contending that it created too much of a regulatory burden for landowners and farmers in particular. Rather than solely imposing mechanisms such as regulations on

activities, and enforcement tactics such as fines for non-compliance, many MPPs argued that the bill should mandate the implementation of publicly funded education programs to encourage and facilitate voluntary action for source water protection. The educational element of public participation therefore was not solely argued as important in and of itself, but to also soften what many dissenting MPPs believed to be the highly regulatory nature of Bill 43.

4.3.3 Public Participation in the Clean Water Act

The *Clean Water Act* included amendments that appeared to reflect to some extent MPPs' concerns about public consultation on all SWP documents prepared by the SPCs. Although still requiring that only municipalities be consulted by committees in the development of the terms of reference and assessment reports, additional provisions were added to sections 9 and 16 mandating the committees to publish the drafts of these documents and allow public comments on them over a time period of 30 days. This provision explicitly included only municipalities in the drafting stages of these documents, while inviting the public to consult only on their final drafts. However, in an apparent effort to increase the transparency of the source protection committees, section 18 of O. Reg. 288/07 mandated that all committee meetings to be open to the public, unless all or part of a meeting includes the discussion of a subject matter that is of a personal or financial nature about an identifiable individual. Therefore, the public were provided with additional opportunities throughout the development of all source protection documents to attend meetings and observe the discussions that occurred among committee members.

The nature of the public meetings that were to be held by source protection committees was not specified in O. Reg. 287/07. Rather, the regulation stated that at least one public meeting be held by the source protection committee to allow the public the opportunity to review the draft terms of reference, assessment report, and source protection plan, and that these meetings take place at least 21 days after the posting of the notice. Rather than standardizing the specific parameters for public consultation across the province, the regulation granted source protection committees some level of autonomy to organize the public hearings, in terms of the time and location at which they would be held, as well as the number of meetings deemed necessary to fulfill the legislative requirement for public consultation on the various source water protection documents.

Moreover, the regulation placed the onus on source protection committees to ensure that their public participation processes would adequately engage with all interested and affected members of the public. In the finalizing of each of these documents, the regulation also required source protection committees to "consider" all written comments submitted within the time frame, as well as comments made at the public meeting. This imposed an additional requirement on committees to ensure that the

feedback obtained during these consultation exercises informed their decision-making, albeit to the extent they deemed reasonable.

The *Clean Water Act* was also amended in terms of public education, reflected in the additional measures were implemented through the legislation to ensure that education was a component of early source protection action. The Act expressly recognized in section 22(7) that a source protection plan may, in accordance with the regulations, implement policies that govern incentive programs as well as education and outreach programs. Important to note is that, although the Act expressly recognized that incentives, education and outreach may be used as source protection tools, they are just one tool among many others that may be implemented in a given plan, including prohibiting activities, monitoring policies, and designating activities. Public education was therefore not a mandatory component of the Act. However, the legislation did acknowledge that in certain situations it may be most effective to encourage voluntary action for source water protection, and it granted source protection committees the leeway to explore this option. In addition, the final legislation established in section 97 the Ontario Drinking Water Stewardship Program, which, among other funding components that will be described in the subsection below, was designed to provide financial assistance to persons or bodies who administer education and outreach programs in relation to the source protection plans. According to a member of the majority party, this seven million-dollar fund would support scientific studies to launch educational material for farmers on how to protect source water. While education and outreach were therefore not mandated, the provision of explicit funding for those activities arguably could facilitate the use of these mechanisms throughout the SWP process.

4.4 Financial Capacity

4.4.1 Financial Capacity in Bill 43

Bill 43 did not include any provisions related to funding mechanisms, or any other form of financial assistance, that would be provided to source protection committees or other entities for their involvement in SWP planning and implementation. It did, however, assign principal responsibilities for the implementation of source protection plans to the municipalities, despite a lack of funding to do so. As will be explained in the following subsection, the lack of financial capacity provisions in the bill for any portion of the SWP planning and implementation processes was a major point of contention for many MPPs on the opposite side of the bench.

4.4.2 Financial Capacity in the Debates

The analysis of the debates on Bill 43 revealed that issues related to financial capacity appeared in much of the discussion among MPPs. However, the extent to which these discussions were related

explicitly to financial capacity for the collaborative governance aspect of the legislation appeared to be far less than was the emphasis on the absolute costs of the legislation on those who would be affected by its implementation. For example, the issue of compensation for those who would be involved directly in the collaborative SWP process, which is itself a prominent theme in the collaborative water governance literature in terms of financial capacity, was brought up on only one occasion in the debates on Bill 43. Arguing that source protection committee members should be selected through an open and transparent manner and that any member of the public should be able to apply to sit on the committee in their region, one backbencher MPP proceeded to declare that the chosen committee members must be provided with “some level of remuneration” to support their sustained participation on that committee. This reflects some assertions in the existing scholarship that, for large watersheds in particular, participating stakeholders may face barriers to their continued involvement if they must incur excessive travel time and costs (Leach & Pelkey, 2001).

What appeared to be a more pressing issue with regards to the financial capacity for source protection committees was the intended lifespan of these committees, and specifically their role upon the approval of their plans. While Opposition MPPs argued that Bill 43 clearly outlined the role of the source protection committees in the development of the source protection plans, less clear for some critics of the bill was the role of these committees after the submission and approval of those plans. During the third reading of the legislation, an Opposition MPP stated that the source protection committees, in their proposed form, had an important oversight role that “should not be abandoned” in the implementation, enforcement, and monitoring of the source protection plans. In order for this role to be extended beyond the development of source protection plans, it was expected that additional financial resources would need to be secured to enable that membership base to participate in these subsequent phases.

The ability of source protection committees to remain engaged in these processes over the long term appeared to be contingent on the securing of long-term, sustainable funding. In 2006, the government had committed funding in the amount of 67.5 million dollars over five years for the scientific study component of source protection planning, with 51 million dollars going to technical studies by local communities and the remaining 16.5 million for conservation authorities, to ensure that these entities had the resources and human capacity necessary to carry out their responsibilities under the proposed legislation. In addition to provincial funding that had been allocated in 2005 for the study of drinking water sources, the funding for this phase totalled 120 million dollars over the five-year period at the time of the debates. Members of the majority party consistently referred to this funding as supporting “vital and crucial work” at the local community level, and as constituting an “historic scientific investment on the science of water.”

However, Opposition MPPs expressed concern that the government had only promised funding for the source water protection planning process, and not for the subsequent phases, leading them to question the long-term viability of the legislation in terms meeting its water quality objectives. Prominent was the argument that while the government had committed the 120 million dollars for such activities as watershed research, mapping, and the development of source protection plans, no additional funding had been committed by the government at that time for implementation or monitoring. Speaking directly to this funding, one member asserted that “far more than this” would be needed over the longer term. During the third reading, one MPP of the governing party expressed the further intent of the government to evaluate the eventual costs of implementation after the completion of source protection plans by local communities, to be able to “effectively direct sustainable funding to address those costs” in the future.

Finally, the topic of decentralization and the manner in which Bill 43 allocated responsibilities for source water protection and management was discussed in various capacities. Supporting rhetoric for the bill tended to emphasize its locally-driven nature, as well as its ability to pull together local communities and stakeholders through the conservation authority to plan and implement source water protection measures. In first stating that the protection of water resources was a shared responsibility, one MPP of the governing party also asserted that, “because each watershed is unique, we are convinced that local authorities are in the best position to plan and implement the protection measures that will ensure the safety of our drinking water.” This sentiment implies that, through the legislation’s mandating of local, multi-stakeholder collaboration, and the devolution of responsibility for source water quality to the local level, the decentralization of water resources management for drinking water source protection to local entities was the best method to achieve the intended goals of the legislation.

However, decentralization took on a negative connotation for some MPPs when it was discussed in the context of financial capacity. Opposition MPPs who challenged the full decentralization of source water protection from the provincial government to local implementing parties argued that Bill 43 amounted to provincial downloading to these entities. Frequently coded in the Hansard transcripts, downloading was a prominent issue for members of opposition parties who asserted that the bill represented, as one Opposition MPP specifically stated, a “shell game” of provincial transferring of not only responsibility and liability, but also of the costs, for water quality to the local level.

The proposed legislation placed municipalities with the primary responsibility for the implementation of the policies that would be outlined in source protection plans. In referencing these increased responsibilities, arguments stemming from Opposition MPPs centered on the apparent lack of funding to accompany the enactment of the *Clean Water Act* for municipalities to take them on. For example, one of these MPPs argued that the bill did not deliver on any financial support for municipalities to fulfill these new responsibilities, while another stated that municipalities would be left “holding the

bag” to pay for the legislation. Municipalities were purportedly concerned with being responsible for implementation, on top of being responsible for participating on source protection committees, assisting with the preparation of all source protection documents, participating in public consultation processes, and negotiating amendments when required by the Minister. MPPs asserted that municipalities were primarily concerned with not having the “financial and staff resources required to deliver on these responsibilities.” One MPP noted that conservation authorities already carry a heavy load in terms of watershed responsibilities, and since their operating budgets are funded primarily from the municipal tax base, the extra financial burden perceived for conservation authorities would constitute further downloading to municipal governments. In contrast, MPPs of the governing party argued that the government had undertaken a significant upload of municipal responsibility by providing funding for scientific studies and source protection planning.

Therefore, while MPPs from the governing party frequently framed the legislation as ensuring that the local level was the most appropriate level for undertaking watershed-based source water protection, opposing MPPs appeared to interpret lauds for decentralization as constituting little more than a guise for what was actually the abdication of provincial responsibility for water resources management to municipal entities. Downloading was clearly viewed by many Opposition MPPs as an unfortunate and unacceptable impact of decentralized water resources management that resulted from a lack of financial capacity stemming from the bill for municipalities, conservation authorities, and landowners, which would prevent them from meeting their implementation responsibilities.

4.4.3 Financial Capacity in the Clean Water Act

On the whole, the issues raised by MPPs regarding financial capacity for source water protection did not appear to gain traction in the final *Clean Water Act*. As discussed in the public participation subsection, the Ontario Drinking Water Stewardship Program (ODWSP) was established in the Act to provide financial assistance not only for those who administer incentive and education and outreach programs in relation to the source protection plans, but also to persons whose properties or activities may be affected by the legislation, and to particular groups, organizations, and individuals for activities related to source protection plans (Heeney, 2008). Aside from the establishment of this fund, the legislation did not explicitly provide any additional funding for any aspects of the source protection planning and implementation processes. However, section 40 of O. Reg. 287/07 required source protection committees to, prior to publishing a draft source protection plan for public consultation, prepare an explanatory document that included a summary of the extent to which the policies in the plan considered the anticipated financial implications for those who would either be implementing or affected by the plan. Although it did not ensure additional capacity for those who would implement and monitor the plans, this

provision did require committees to justify their decision-making by evaluating the financial impacts of their source protection plans on local entities, thus maybe proactively lightening their financial burden.

Moreover, it appears as though the Act solidified a number of capacity-related responsibilities as belonging to the source protection authority. Section 5 (b) under Part II of the Act (Preparation, Amendment and Review of Source Protection Plans) established the source protection authorities of each committee as being responsible for providing “scientific, technical, and administrative support and resources” to its SPC. While not tasking source protection authorities with the responsibility to provide financial resources per se to their respective source protection committees, this provision did require source protection authorities to provide capacity in other forms. Rather than addressing the issue of downloading that was presented by many members throughout the course of the debates, the Act made appointed conservation authorities fulfill an undefined level of capacity requirements for the source protection committees, rather than having this capacity stem from the province. Whether or not source protection authorities would be able to request financial assistance from the province in providing this capacity for source protection committees remained unclear.

4.5 Summary

This chapter traced the history of Bill 43 as it was debated in second session of the 38th Parliament before receiving Royal Assent as the *Clean Water Act* in October 2006, and focused on the discussions that occurred in this Legislature with regards to representation, public participation, and financial capacity. It was primarily focused on addressing the first objective of this research, which was to identify the issues and concerns related to the collaborative water governance component of Bill 43 that were raised by MPPs during the legislative debates on the bill, and more specifically related to these three factors, and to assess whether and how these particular debates shaped the final collaborative mandate of the *Clean Water Act*.

In terms of representation, Bill 43 presented somewhat of an inflexible approach to the membership size of source protection committees. However, it was stressed during the debates that a truly local approach to SWP would reflect the fact each watershed is unique and has their own combination of stakeholder interests that should be considered in decision- and policy-making. The regulations that came after the legislation reflected this by establishing the size of source protection committees as a function of the size of the watershed region in which their plans would be developed. The regulations also mandated proportional representation from all impacted sectors in a given watershed. In so doing, the regulations required at the very least that descriptive representation (or “representation on paper,” as explained by Koski et al., 2018) on each committee be achieved.

However, when it comes to substantive representation, or “representation in practice” (Koski et al., 2018), neither the *Clean Water Act* nor its regulations provided a mechanism to ensure that the “right” stakeholders from each watershed region would be represented on the committees. This was a paramount concern among Opposition and backbencher MPPs throughout the debates that apparently remained unaddressed when the committee selection process began. This is partially evidenced by the appointment mechanism that was retained in the Act that enabled source protection authorities to appoint individual SPC members to the committees. In addition to MPPs’ concerns regarding the lack of accountability that these committees would have as a result of their appointment, there were no checks and balances in place to ensure that those who were selected truly represented the full range of interests within each broad stakeholder group of any given watershed region. Moreover, the authority of the Minister in approving final source protection plans and the various steps along the process remained intact; although this was one of Justice O’Connor’s recommendations, many MPPs were worried that stakeholders’ interests would be trumped by those most important to the Minister and that served the purposes of the Centre, rather than the watershed. The fact that this was retained in the Act suggests that committees were never intended to hold ultimate authority over the SWP work they would collaboratively produce from the ground-up.

MPPs were insistent that public participation throughout the SWP planning process was imperative to achieve effective source water protection, as well as for reasons of democracy. This was generally in response to Bill 43’s focus on ensuring that municipalities were consulted in the development of all SWP-related documents prepared by the committees, while effectively excluding the general public from the process until the source protection plan was drafted. In addressing these concerns, the legislation was amended to mandate that committees provide public consultation opportunities on all SWP documents prior to their Ministerial or director approval. The debates therefore strengthened the collaborative mandate of the Act insofar it reflected the importance of public participation and transparency in the process of multi-stakeholder collaboration by providing more opportunities for public input throughout the process. However, neither the legislation nor the regulations prescribed enforceable requirements for these consultation sessions, beyond requiring that committees hold public meetings on the subject and that they have a 30-day comment period. Concerns on the timing of public hearings for the agricultural community in particular therefore were not explicitly addressed, despite their prominence throughout the debates. That said, the regulations required all SPC meetings to be open to the public, thus making many internal discussions of the committees available for public scrutiny. The legislation also provided committees with the opportunity to use public education as a tool for source protection plan implementation, based on comments made by MPPs regarding the importance of education for protecting sources of drinking water and their increased palatability relative to more regulatory implementation tools.

The factor to be most weakly incorporated into the legislation and its regulations was that of financial capacity. The issue of financial compensation for SPC members was not framed so much as a concern, but rather as an expectation of the Ministry, and this expectation was included in the final legislation by granting members per diem and mileage compensation. However, financial capacity was discussed in length by the Opposition through their insistence that long-term, sustainable funding needed to be provided by the province throughout the entirety of the SWP program, including in the implementation phase. Absent this, MPPs were concerned that municipalities, landowners, and conservation authorities would be the victim of provincial downloading in implementing the policy and other tools contained within the source protection plans. These fears were compounded by the perceived abrogation of municipal powers by source protection committees, in the sense that source protection plans would prevail over municipal land use and other planning tools. While the legislation did implement the Ontario Drinking Water Stewardship Program, to provide one-time financial assistance to administer education programs and to persons whose properties or activities may be impacted by the requirements of the SWP program, the long-term nature of this funding remained obsolete. As will be discussed in the following chapter, the concerns that MPPs had in this regard came to fruition as an obstacle that committees faced in planning for the protection of drinking water sources at the watershed level.

Overall, the discussions that were held in the Legislature regarding representation, public participation, and financial capacity appeared to strengthen the collaborative governance components of the *Clean Water Act* in some respects, at least on paper. Particularly with regards to representation, the legislation and its regulations together ensured that descriptive representation across the watershed regions would be achieved and that committee composition could be somewhat flexible to local circumstances. The ambiguity of Bill 43 in terms of public participation and the prominence it gave to municipalities were amended to some extent at some point throughout the legislative process, at the very least ensuring that members of the public had some opportunities to participate in the collaborative SWP process. The Government also promised some funding, albeit minimal, for source water protection planning, which was more than what could be said for the financial assistance mechanisms provided through Bill 43. However, as the author will show in the next chapter, this collaborative mandate within the *Clean Water Act* and its regulations did not necessarily meet expectations for any of these factors when it came to implementing this governance model in practice.

A final and potentially significant finding from the analysis of the legislative debates on Bill 43 is that the MPPs appeared to have impact on government legislation for collaborative SWP planning and implementation. The author contends that this is “potentially” significant because, while it is clear that there were many arguments made by Opposition and Backbencher MPPs in the Legislature in terms of the content and provisions of the legislation, and that the legislation appeared to have been amended to some

extent as a result of these debates, it is not necessarily possible to derive a linear cause and effect relationship in this regard. There is much generalization in the existing scholarship that MPPs do not usually influence government policy or legislation and that the impact of legislative hearings on government bills is typically insignificant (e.g. White, 1989; Blidook, 2012). Despite the fact that the discussions that took place during the debates appeared to be influential on the *Clean Water Act*, the author did not analyze the committee hearings that were undertaken during Bill 43's time in the Legislature, nor does this thesis capture any conversations or debates that occurred informally, behind closed doors or otherwise outside of the official process captured in the Hansard transcripts.

5.0 SPC Meeting Minutes Analysis: Findings and Discussion

This chapter details the findings of the directed content analysis that was undertaken on the meeting minutes and other related documents from the Lake Erie SPC, the Bayfield SPC, and the Trent SPC, as well as an intensive discussion of these findings. The chapter is organized around the factors that have been selected for analysis, and each sub-section begins with an overview of the findings for the particular factor of interest that is immediately followed by a discussion of the findings. The discussion sections incorporate elements from the literature as well as the legislative debates chapter to discuss the relevance of my findings.

5.1 Representation

5.1.1 Findings

5.1.1.1 Stakeholder Representation at SPC Meetings

The *Clean Water Act* and its regulations outlined specific requirements for the attendance of SPC members at official SPC meetings in the SWP planning phase of the program. O. Reg. 288/07 included operational requirements that dictated that quorum be met at every SPC meeting in order for the formal business of the committee to be carried out at these meetings. The quorum was to consist of the Chair (or acting Chair) plus two-thirds of the number of appointed members of the committee. The SPCs were also required to establish at the beginning of the SWP process a rules of procedure document, which would govern the structure and conduct of SPC meetings. These rules of procedure included members' responsibilities with regards to their attendance and participation at SPC meetings, which are summarized below at Figure 5.

	Lake Erie SPC	Bayfield SPC	Trent SPC
Attendance	<p>SPC members have a variety of roles and responsibilities, including their regular attendance at SPC meetings and events of the committee.</p> <p>An SPC member can be removed from the committee if the member has been absent from three consecutive meetings or six meetings of the committee in a year without providing reasonable cause.</p>	<p>The responsibilities of duly appointed voting SPC members includes attending both committee meetings and public meetings.</p> <p>SPC members must demonstrate due diligence and dedication in preparation for an attendance at meetings, special events and all other activities on behalf of the committee.</p>	<p>SPC members must demonstrate their commitment to the committee and to the source protection planning process through high levels of attendance and participation at committee meetings directed toward advancing the mandate of the committee.</p> <p>(SPC members must) regularly attend meetings of the source protection committee (and applicable working groups) throughout the duration of the appointment.</p> <p>(SPC members must) attend and participate in public meetings, information sessions and forums.</p>
Proxies	<p>A member may participate in the meeting by proxy, as per section 17 of O. Reg 288/07.</p> <p>Members participating by proxy count towards meeting quorum.</p> <p>Members participating by proxy are not considered to be present at the meeting for attendance purposes.</p> <p>A member who participates in a meeting by proxy under section 59 of these Rules of Procedure will not be paid the per diem allowance for that meeting.</p>	<p>A voting member may participate by proxy, with the exception of election votes. The proxy will have written confirmation of the member's intents.</p>	<p>A member of the source protection committee may under limited circumstances participate by proxy at a particular meeting for which a written proxy has been provided by another member of the committee and a copy has been provided to the chair before the meeting.</p>
Members' Remote Participation	N/A	Attendance in person at SPC meetings is preferable, but a member may participate by telephone where possible.	SPC members may participate in meetings by telephone or other electronic means.

Figure 5: Source Protection Committees' Rules of Procedure for Attendance, Proxies and Participation

The discussions in the meeting minutes revealed that SPC members viewed members' attendance at meetings to be of critical importance, but not necessarily for reasons relating to ensuring substantive

representation throughout the process. Rather, the committees were concerned with meeting the operational requirements in O. Reg. 288/07, as well as adhering to their own rules of procedure. In particular, members were concerned about attendance for the primary purpose of maintaining quorum, so that official committee business could proceed uninterrupted at these meetings, such as discussing and voting on issues.

There were a few implications of low attendance that were noted by SPC members during their meetings. For instance, in the Bayfield SPC, the repetitive cancellation of meetings due to low attendance in 2008 resulted in the committee scheduling fewer meetings. There was no evidence that the meeting schedule in its entirety was altered for the other two SPCs as a result of low attendance. However, in the Lake Erie SPC and Trent SPC, there were instances in which quorum was lost partway through a meeting, and decisions had to be delayed until subsequent meetings, due to the quorum requirement. Moreover, meetings sometimes had to be rescheduled if it was anticipated that quorum for a given meeting in the future would not be reached.

The minutes revealed that committees often would weigh the benefits of delaying meetings until more representation could be obtained against the consequences of not meeting regulatory requirements related to the timeliness of the SWP program. Under O. Reg. 287/07, SPCs had 14 months following the appointment of the first Chair of their respective committees to submit their terms of reference to the Minister. They then had one year following the Ministerial approval of this document to submit the proposed assessment reports for each of the source protection areas in their region. Following the approval of the assessment reports, SPCs had to submit each of their proposed source protection plans to the Minister no later than the fifth anniversary of the appointment of the first Chair of the committee.

The Lake Erie SPC spoke to the time-criticality of meeting agendas as the assessment reports were being developed, and how achieving quorum during this time period would be important to ensure its timeliness. Moreover, during the development of source protection plans, some attempts by the Lake Erie SPC members to reschedule meetings due to anticipated issues with quorum were denied by the Chair, who asserted that meetings could not be rescheduled without “significantly affecting the timeline.” The Trent SPC also appeared to favour timeliness over having full member representation at meetings. This was apparent through their contention that the first few months of 2012 would be very important to the timely completion of source protection plans, and that attendance would be critical. It was also noted that a meeting could be rescheduled if too many people were unable to attend, but that it would also be difficult to find a meeting date that all members could attend and in keeping with the timelines.

In particular, attendance by voting members was critically important to committees when developing the source protection plans. During these meetings, the committees often had to discuss and vote on proposed policies and other source protection tools in a timely and efficient manner in order to

meet the regulatory timelines for the submission of the plans to the Minister. There was an apparent expectation that SPC members would be the most heavily involved in the SWP process during the source protection plan development phase. Losing quorum during this time-sensitive period was considered to be an issue for the committees. The relatively short timelines in which the committees were operating in order to meet the regulatory deadlines for their submission therefore at times appeared to be in tension with other regulatory requirements for member representation at meetings, with negative implications on the extent of stakeholder representation that could be achieved at these meetings.

The available documentation for the SPC meetings, as well as the provisions of the *Clean Water Act*, permitted the analysis of both the descriptive and substantive representation of SPC members throughout the collaborative SWP process in Ontario. The descriptive representation of stakeholders was prescribed for committees in the *Clean Water Act*. Figure 6 below outlines the initial membership of each of the SPCs in the present sample, which was established upon the implementation of the legislation.

	Municipal Representatives	Economic Representatives	Public Interest Representatives
Lake Erie SPC	Haldimand, Norfolk (1) Waterloo Region (1) Grey, Dufferin, Halton, Wellington (1) Guelph (1) Brant, Brantford, Hamilton (1) Elgin, Middlesex, London (1) Perth, Oxford (1)	Agriculture (3) Business and Industry (3) Aggregate Industry (1)	Grand Valley Water Supply (2) Elgin Area Water Board (1) General public interest (3)
Bayfield SPC	North node (1) South node (1) East node (1) West node (1) Central node (1)	Agriculture (3) Industry (1) Commerce (1)	Environment (2) Property owners (1) Public-at-large (2)
Trent SPC	KHSPA municipalities (2) CVSPA municipalities (1) LTSPA municipalities (1) OPSPA municipalities (2) GRSPA municipalities (1)	Agriculture (3) Aggregate/mining (1) Recreation/tourism (1) Economic development (1) Commercial/industrial (1)	Trent-Severn Waterway (1) Environmental NGO (1) Drinking water expert (2) Public – rural (1) Public – urban (1) Waterfront landowner (1)

Figure 6: Initial Membership Composition of Sample SPCs

To assess the extent to which stakeholders were present at meetings, the number of meeting absences for each member in each sector was calculated. This constitutes the substantive representation of SPC members throughout the SWP planning process. Figures 7 and 8 below outline the results of this analysis.

	Municipal	Economic	Public Interest	Total
Lake Erie SPC	112	77	115	304
Bayfield SPC	42	53	61	156
Trent SPC	46	64	78	188

Figure 7: Total Number of SPC Meeting Absences by Sector

	Municipal	Economic	Public Interest
Lake Erie SPC	36.8%	25.3%	37.8%
Bayfield SPC	26.9%	34.0%	39.1%
Trent SPC	24.5%	34.0%	41.5%

Figure 8: Percentage of Total SPC Meeting Absences by Sector

Figure 7 presents the absolute number of absences by sector over the 11 years, and the total number of absences across all three sectors. Figure 8 presents these absences as percentages of this total. The results indicate that members from the public interest sector had the highest number of recorded absences throughout the SWP process in all committees, albeit by only a marginal amount. In terms of environmental representation in particular, the environmental NGO representatives throughout the SWP process for the Trent SPC were among the highest calculated absenteeism rates for all of the SPC members on that committee. The calculation confirms that the first environmental NGO representative for the committee was absent for 38% of the SPC meetings that occurred before her resignation in early 2010. Although she was replaced by another environmental NGO representative two months following her resignation, the subsequent representative also missed 38% of the meetings that took place during her time on the committee. However, this finding was not consistent in the other two committees.

In the Bayfield and Trent SPCs, the economic sector had the second highest number of reported absences, while municipal sector members were present the most often at official SPC meetings. This was not the case in the Lake Erie SPC, where municipal absences trailed closely behind absences in the public interest sector. The subsection on members' participation by proxy will shed additional light on absenteeism in the Lake Erie SPC, and provide more insight into the value of these members being physically present during SPC meetings throughout their tenure on the committee.

5.1.1.2 Turnover of SPC Members

One finding from the analysis of the meeting minutes was that the SPCs valued the sustained participation of SPC members in the SWP planning process over time, and that the SPCs were generally satisfied with the rate of turnover of their voting members. Low turnover rates on committees throughout the process was perceived by the SPCs as having a positive impact on the process and results of the SWP program.

As a specific example of this importance, the Bayfield SPC had a discussion in 2010 regarding the impacts that an upcoming municipal election would have on municipal representation on the committee. At the time the Bayfield SPC was formed, municipalities appointed sitting council members to the committee. The committee grappled with how they would handle municipal representation when representatives did not return to council or were not re-elected. When the election came, only two of the five municipal representatives on the SPC were re-elected to council. However, the SPC expressed their interest in sustaining municipal membership continuity beyond the election, particularly because the election was occurring in the months prior to the submission of the first source protection plans for the region. For those members who were not re-elected to council, SPC staff decided to work with municipalities to either appoint new municipal members or reappoint the existing members to the committee. In the end, only one municipal representative resigned from the committee, in January 2011. Thus, municipal representation on the Bayfield SPC remained fairly stable throughout the remainder of the source protection plan development process.

In order to calculate the turnover rates among individual SPC members, as well as within the sectors represented on committees, the attendance records were analyzed and instances of the resignation or removal of SPC members were recorded. Voting member resignations were only counted when they occurred before the mandatory turnover provision under O. Reg. 288/07 came into effect for each of the SPCs. This regulation dictated in section 8 that, upon the date of the approval of the source protection plan, one-third of the membership of the SPC in each of the three sectors must expire, and that this process be repeated on the first and second anniversaries of the approval of the source protection plan. Figure 9 below indicates turnover rates for each committee, showing the date of each member's resignation or removal from committee, as well as the sector to which each member belonged.

	Sector of Resignation	Date of Resignation
Lake Erie SPC	Public Interest	September 2010
	Economic	September 2011
	Public Interest	November 2011
	Public Interest	June 2012
	Municipal	December 2012
	Economic	March 2016
Bayfield SPC	Economic	July 2008
	Municipal	January 2011
Trent SPC	Public Interest	July 2009
	Public Interest	March 2010
	Public Interest	September 2010

Figure 9: Turnover Rates by Sector of Source Protection Committees

Overall, across the three committees there were only 11 members that resigned during the SWP planning phase of the drinking water source protection program. This amounts to less than 20 percent turnover in total for the three cases, given that there were 57 members in total on these committees during this time frame. This finding is corroborated by statements made by members of these committees that the level of membership continuity had been satisfactory throughout the process, suggesting that in general, turnover did not appear to present a substantial issue for the committees.

More succinct findings emerge when these findings are viewed in light of the sectors in which this turnover occurred. In the Lake Erie SPC, the public interest sector constituted the majority of the turnover among the voting members, and were the only members to resign from the Trent SPC committee over the SWP planning phase. This was not the case in the Bayfield SPC, in which turnover prior to 2015 was only evident in the economic and municipal sectors. The findings also indicate that the Lake Erie SPC, which had a total voting membership of 21 members, experienced twice as much turnover as did the Trent SPC, which also had 21 members, and three times the turnover as did the smaller Bayfield SPC during this time period.

Another finding of the content analysis with regards to SPC member turnover was related to the mandatory turnover provision of O. Reg. 288/07. Under this provision, the Lake Erie SPC and Trent SPC, who each had 21 voting SPC members, would be required to retire three members from each sector upon the approval of the source protection plans, and two more from each sector in each of the two years thereafter; the Bayfield SPC, only having 15 voting members, was responsible for expiring the membership of two members from each sector upon approval of the plan, and one member from each sector in the years following. Further amendments made to O. Reg. 288/07 in 2015 (known as O. Reg.

310/15) also granted the source protection authority of each committee the ability to reduce the size of the SPCs following the approval of the source protection plans.

What was clear from this analysis was that SPC members were generally opposed to the mandatory turnover provision. The relatively low rates of turnover that each of the committees had experienced throughout the SWP planning process was perceived as a positive aspect of the program by SPC members, as these members were valuable to the process and would continue to hold value as participants in the implementation phase. Members were concerned that a provision mandating that these longstanding participants resign from the committees would eventually lead to entire committees being replaced within a couple of years of the approval of the source protection plans, ultimately resulting in a huge loss of knowledge within the committees and an ultimate detriment to drinking water SWP.

To prevent this, SPC members stated that the turnover provision should be made more flexible in terms of the timing of membership expiration, and provide the opportunity for committees to re-appoint existing members. With regards to timing, some SPC members noted that existing members may not be able to monitor the implementation of the source protection plans they helped to develop before their membership would expire. They thus thought that the provision should allow for some flexibility in terms of the timeline for membership expiration. In terms of member re-appointment, SPC members generally felt as though the regulation should provide committees with the option to re-appoint existing members whose membership would expire under the provision, rather than having to appoint brand new members to the committees. From the perspective of the committees, each of these flexibility measures would arguably reduce the amount of knowledge lost from the planning and development of the SWP plans into the implementation of these plans. In short,

Moreover, members from some SPCs did not agree with the idea to reduce the size of the committees' during the implementation phase. For instance, there was some dispute among members of the Lake Erie SPC whether the size of the SPC should be reduced: while some members believed a smaller committee would be more efficiently able to fulfill its obligations, others asserted that, given the work that still had to be undertaken by the committee in the coming years on water quantity within the watershed, it was not an ideal time to engage in a committee reduction exercise. Lake Erie members also appeared to be concerned about how municipalities would perceive the reduction and reconfiguration of municipal representation on the committee, suggesting that this is not something that would be easily accepted by municipal councils. A motion in the Lake Erie SPC in 2016 to reduce the size of the committee was not seconded and did not proceed. This topic was also discussed in the Bayfield SPC, although general consensus was achieved by the Bayfield SPC members that the membership size should remain the same so as not to reduce the knowledge base of the committee.

One interesting finding that was related to SPC staff turnover was that it was not only the sustained membership of the voting SPC members on the committee that was valuable to the effectiveness of the process. Rather, it was indicated in a discussion held by the Lake Erie SPC that the participation of non-voting liaison SPC members, and particularly the liaison representing the provincial Ministry of the Environment, was also of importance. In 2009, the Chair of the Lake Erie SPC expressed concern regarding this, noting that the inconsistency with the Ministry representation up until that point in the process had not been ideal. A frequency count of the provincial Ministry liaison representatives across all three SPCs revealed interesting findings to this effect. Throughout the SWP process, the Lake Erie SPC and Bayfield SPC had many different Ministry liaison representatives sit in on committee meetings, with 19 and 11 representatives respectively having participated from the first meeting until the most recent meetings in 2018. The Trent SPC appeared to have had a different experience with provincial representation, having only seven different Ministry representatives over the course of the SWP program. Moreover, while the Trent SPC had only four different Ministry liaison representatives from the beginning of the process until the end of 2014, the Lake Erie SPC had 13 different liaisons and the Bayfield SPC had nine different liaisons over this same time period. It therefore appears as though the Lake Erie SPC and the Bayfield SPC experienced more difficulty than did the Trent SPC in securing consistent and long-term representation from the Ministry, although neither one of the SPCs had the same Ministry representative over the course of the entire SWP program, nor for the period in which the first source protection plans were developed and submitted to the Minister.

5.1.1.3 Proxies

One interesting finding from the analysis of the attendance records for the Lake Erie SPC specifically was that members would sometimes delegate their voting power at a committee meeting to another person in their absence. Known as proxies, these individuals were designated by a voting SPC member to represent him or her at the meeting. The use of proxies was permitted by the Ministry under s. 17 of O. Reg. 288/07, and the rules of procedure for all case study SPCs indicated that voting members were allowed to participate in SPC meetings by proxy. Proxy voting is considered to be a hybrid form of democracy, including elements of both direct democracy and representative democracy (Kulyk et al., 2016). The proxy voting principle allows voters the right to decide to which extent they would like to participate directly in democratic processes, such as an election, by giving the voter the right to either vote directly on an issue or delegate this voting right to another person (Kulyk et al., 2016). In the context of the SPC meetings, members who participated in meetings by proxy were still considered to be absent from that meeting for attendance purposes. Therefore, although technically they were being represented

at the meeting by the proxy, the member whose seat the proxy was holding was not actually “present” at that meeting for the purposes of attendance.

Both the Lake Erie SPC and the Bayfield SPC encouraged members to send proxies when they were unable themselves to attend SPC meetings, particularly during the development and finalization of the source protection plans. The rules of procedures for the Trent SPC suggests that proxies were permitted only in limited circumstances. These documents generally revealed that proxies were primarily intended to be used in order to obtain quorum at meetings, so that meeting business such as voting could proceed as scheduled. In both the Bayfield and Lake Erie SPCs, it was discussed that proxy use enabled the committee to keep quorum, and in some instances where it was anticipated that attendance at an upcoming meeting would be low, members in both of these committees were encouraged to send a proxy representative in their place so the meeting could proceed without issue.

There was some indication in the meeting minutes of both the Bayfield and Lake Erie SPCs that some members were hesitant about the use of proxy voting, specifically with regards to the people to whom members may assign their proxy. There were no provisions in O. Reg. 288/07 that dictated to whom proxies may be assigned. There was a general sentiment among the members in these committees that it was the preference of the Minister that a proxy be an existing member of the committee. However, some members of the Lake Erie SPC indicated that since the regulations did not define proxy eligibility, members should be allowed to assign their proxy to a non-member if they so choose. It was eventually decided that the rules of procedure could not override the regulations by dictating specifically who may be proxy representatives, and that non-members were allowed to sit as a proxy. One member suggested that, if this was the case, the rules of procedure should provide specific information regarding proxy use and state the specific items to which the proxy may speak. Despite this, it was again decided that since the rules of procedure could not curtail the proxy participation as set out in the regulation, proxy representatives would be subject to the same provisions as any voting member. In the Bayfield SPC, this notion was also stressed, the Chair stating that the proxy option could not be removed by the committee’s terms of reference.

The Lake Erie SPC was the only committee to indicate in their attendance records when proxy representatives were present at meetings, and which voting members they were replacing. To quantify the use of proxies by this committee, this information was compiled and organized into the three sectors of representation on each committee. Figure 10 below summarizes these results.

Sector	Number of Times a Proxy Was Used by a Member (2007-2018)	Total (Aggregated) Member Absences (2007-2018)	% of Absences for which Proxies Were Used
Municipal	94	112	89.7%
Economic	50	77	64.9%
Public Interest	75	115	65.2%
Total	219	304	69.74%

Figure 10: Use of Proxies by the Lake Erie SPC Members

The results indicate that across all three sectors, members were absent from SPC meetings a total of 304 times from the year 2007 to 2018, and that these members participated by proxy 219 of these times. Altogether, members participated by proxy almost 70 percent of the time that they were unable to attend an SPC meeting in person. This means that almost 30 percent of the time, these absent members were not represented in any capacity at the SPC meeting. The breakdown by sector shows that together, members from the municipal sector participated by proxy the greatest number of times throughout the SWP planning process, delegating their representation to a proxy almost 90 percent of the time that they were unable to attend a meeting. This means that for 10 percent of the recorded absences in the municipal sector, the member(s) did not participate in the meeting by proxy, and was thus not represented in any capacity at the meeting. Conversely, the members of the economic and public interest sectors used proxies approximately 65 percent of the time (64.9 percent and 65.2 percent respectively), meaning that the remaining 35 percent of the time, these members did not participate in the meeting by proxy and was therefore not represented in any capacity.

Figure 11 below presents a further breakdown of these numbers to the individual participant level.

Sector	Member Name	# Times Member Participated by Proxy	Total # Absences	% of Absences for Which Proxy Used
Municipal	Busatto	1	1	100
	Cornwell	7	11	63.6
	Haggart	21	21	100
	Hodgins	2	2	100
	Laird	18	26	69.2
	Murray	8	11	72.7
	Oliver	9	9	100
	Perrin	6	9	66.7
	Rider	1	1	100
	Schmidt	21	21	100
	Total Municipal	94	112	
Economic	Carberry	1	1	100
	Hunsberger	0	5	0
	Krueger	11	15	73.3
	MacDonald	18	20	90
	Parker	1	3	33.3
	Schneider	1	3	33.3
	Seibel	4	6	66.7
	Ungar	7	17	41.2
	Wales	7	7	100
	Total Economic	50	77	
Public Interest	Ceschi-Smith	17	19	89.5
	Dale	2	3	66.7
	Goldberg	9	14	64.3
	Harrison	0	11	0
	Henry	22	28	78.6
	Kirchin	0	2	0
	Nevills	0	0	N/A
	Rae	7	9	77.8
	Strauss	0	0	N/A
	Wilson	11	17	64.7
	Woolcott	7	12	58.3
	Wright-Cascaden	0	0	N/A
	Total Public	75	115	

Figure 11: Proxy Use by Individual Lake Erie SPC Members

The results of this more robust, individual-level analysis provides additional insight into the aggregated results shown in Figure 8. For example, within the municipal sector, six members participated by proxy every time that he or she was unable to attend a meeting in person, compared to one member from the economic sector and zero members from the public interest sector. The remaining municipal representatives used proxies more than 60 percent of the time that he or she was absent from a meeting. In the economic and public interest sectors, some members never participated by proxy, thus resulting in their being completely unrepresented at the meetings they did not attend in person.

Analyzing proxy use at the individual level also permitted for a more detailed understanding of to whom the SPC members assigned their proxies when they chose to participate in this manner. Figure 12 provides the aggregated results of this final analysis on proxy use. The detailed breakdown of these numbers by individual participant is found at Appendix A. Proxies were placed in the Unknown category when there was no indication in the attendance records from where these proxy representatives were selected.

Sector	Proxy Category				
	Existing SPC Member (Same Sector)	Existing SPC Member (Different Sector)	Non-Member (Same Sector)	Non-Member (Different Sector)	Unknown
Municipal	28.7%	17%	51.1%	0	3.2%
Economic	68%	18%	0	0	14%
Public Interest	14.7%	50.1%	25.3%	0	9.9%

Figure 12: Proxy Representatives by Individual Lake Erie SPC Members

The results of this analysis indicate that there were differences across the sectors in terms of the specific individuals to whom their members assigned their proxy. For example, members from the economic sector was far more likely to assign their proxy to an existing member of the SPC who was also from the economic sector, whereas members from the public interest sector were the most likely to assign their proxy to an SPC member who was from a different sector and the least likely to assign their proxy to an SPC member from the same sector. Conversely, members from the municipal sector were the most likely to assign their proxy to an individual who represented their municipality in some capacity, but was not an existing SPC member. The implications of the choice of proxy will be discussed in the following section.

5.1.2 Discussion

The hypothesis posited at the beginning of this thesis regarding representation in the collaborative SWP process in Ontario was that the committees would experience difficulty in achieving substantive

representation throughout the course of the SWP planning process, and that these issues would be more prevalent within the public interest sector through higher absences and higher turnover rates among their members. Some of the results of the analysis support this hypothesis, particularly in the finding that the public interest sector had the highest absenteeism in all three committees and also experienced relatively high turnover when compared to the other two sectors. However, the findings also highlight some elements of the representation literature that were not present in these case studies, as well as reveal some important dimensions of representation that should potentially be examined more closely in future research.

As was expected, members from the public interest sector had the highest number of reported absences, and this finding was consistent across all three SPCs. Despite the assumption that collaborative governance is more inclusive of different interests in the decision-making process, and thus have more procedural and distributive fairness than conventional governing structures by including groups that are typically underrepresented in traditional policy-making venues (Newig et al., 2018), diffuse interests have long asserted that they are not adequately represented in collaborative settings relative to more concentrated economic interests (Gerlak, Heikkila & Lubell, 2013). This finding thus appears to support claims in the literature that certain groups can be underrepresented in collaborative decision-making processes, and that public interest groups or organizations in particular experience barriers to their full participation in collaborative processes (Sabatier et al., 2005; Ansell & Gash, 2007; Gerlak, Heikkila & Lubell, 2013; Dutterer & Margerum, 2015).

The literature asserts that one way to increase the participation of this group of stakeholders in collaborative processes is through the provision of financial capacity, as well as technical and other resources, for actors who would not ordinarily be able to participate in traditional forms of policymaking due to a lack of capacity in these areas (Schuckman, 2001; Bidwell & Ryan, 2006). However, the Ontario SWP program was designed to reimburse SPC members on a per diem basis for their participation in the process, as well as provide them with mileage compensation for their transportation to and from meetings and other mandatory activities. This suggests that the higher level of absenteeism among the public interest sector was not directly tied to a lack of financial capacity to attend meetings or to otherwise participate in the process. Although neither the attendance records nor the minutes themselves do not reveal why members were absent from meetings, the literature suggests that other forms of capacity may be relevant in these instances, such as institutional and organizational capacity, which includes the ability to devote time and effort to collaboration (Kenney, 2000; Baber & Bartlett, 2007; Ansell & Gash, 2007; Gerlak, Heikkila & Lubell, 2013; Brisbois & de Loe, 2016). The findings of this research appear to suggest that, because all members were equally compensated for their participation on the SPC, there

were perhaps other capacity-related barriers, or different barriers altogether, to this participation that are uniquely experienced by members of the public interest sector.

SPC members appeared to place a higher value on low turnover rates within their committees for achieving the goals of collaboration than they did on the physical presence of these members at their meetings. For example, the meeting minutes revealed that members valued the knowledge base that was garnered by the committees, and that they thought low turnover across all of the sectors of participants positively impacted the overall knowledge retention of the committee over time. Moreover, they foresaw that mandatory turnover provisions under the regulations would negatively impact this knowledge base, and would be detrimental to the implementation of SWP, for which the committee would be partially responsible. These sentiments follow claims in the literature that turnover within collaborative organizations can undermine the capacity of the group to complete its mandate by compromising collaborative memory (Margerum, 2011; Dutterer & Margerum, 2015). The proposed turnover provisions were believed to potentially undermine the collaborative memory that had been successfully stored throughout the majority of the SWP process by forcing the resignation and replacement of members who had been part of the process since its inception, and the committees' desires to adapt this requirement to ensure that this knowledge base could be maintained to the greatest extent possible is indicative that they valued the knowledge-building that accrued throughout the process.

However, sentiments regarding absenteeism did not appear to match those surrounding turnover, and committees seemed to be more focused on ensuring that quorum was met at meetings rather than ensuring the substantive representation of stakeholders in the process. This was evidenced through the Chairs' insistence that members send proxy representatives to these meetings if they themselves were unable to participate. This finding is significant in the case of the Lake Erie SPC when considering which members used proxies, and who these proxies actually were. Members from the municipal sector on this committee participated by proxy the most frequently, using them nearly 90 percent of the time to stand in for a municipal member who could not attend a meeting in person. The findings revealed that while the municipal sector closely trailed the public interest sector in terms of total absences over the course of the SWP program in the Lake Erie SPC (112 and 115 absences, respectively), members from the municipal sector participated by proxy to a much larger extent than did members from the public interest sector.

However, the use of proxy voting prompts questions regarding the substantive representation of this sector in the Lake Erie SPC's SWP planning process. Despite being "represented" at the meeting by another sitting individual, absent members who participate by proxy are nevertheless not fully "represented" on the committee, nor in the decisions that were made, these missed meetings. In fact, a member is only represented by a proxy insofar as that proxy shares the same interests and perspectives on issues as that member. Who is selected to sit as the proxy thus matters when it comes to retaining

substantive representation on the committees thus arguably matters when considering substantive representation and its purpose for collaborative governance.

In the case of municipal proxy use, municipal members overwhelmingly assigned their proxy to non-SPC members who came from the same municipality that they represented. In that sense, the individual interests of missing municipal members may have been retained to a higher extent than those from the public interest sector, who primarily relied on SPC members from a different sector to represent their interests as proxy. In theory, the municipal sector was more highly “represented” at SPC meetings because of this, even when considering their relatively high rate of absenteeism, insofar as municipal proxy representatives shared the interests and goals of the members they replaced.

This was even truer for the economic sector, who used existing SPC members from the economic sector as their proxy representatives the vast majority of the time. Conversely, members from the public interest sector, in assigning their proxy to a representative from another sector on the committee, may not have had as much substantive representation during their absences from committee meetings. The low rate of proxy use by members of the public interest sector, combined with their assigning their proxy to individuals belonging to other sectors, potentially indicates that members from this sector had difficulty in securing proxies that could represent their specific interests. This may have been due to capacity-related issues that tend to present barriers to the participation of public interest stakeholders in collaboration.

On the other hand, there is also something to be said about using existing members to stand in as proxies, regardless of the sector they represent, particularly in terms of enhancing collaborative memory and improving trust-building and social learning. Using existing SPC members as proxies arguably does more to ensure the collaborative memory of the group stays intact when decisions have to be made and voting undertaken on issues of importance. Existing members would likely have had a more robust understanding of the SWP process and of the prevalent drinking water-related issues in the watershed than would non-SPC members, having been directly involved in the process. Moreover, although municipal members relied heavily on external proxy representatives from the municipal sector, the participation of these non-members in the already-established collaborative process could have had implications on the level of trust-building and social learning that was possible in the Lake Erie SPC. As both trust-building and social learning are long-term processes, disruptions in the continuity of stakeholder representation and membership through proxy voting, combined with absenteeism and turnover, may have weakened the Ontario SWP process in practice for these elements more generally, and in terms of the validity and other benefits that truly substantive representation would otherwise bring to the process.

However, the bottom line with the institutionalization of proxy voting through the legislation is that, while this mechanism allowed committees to meet quorum and move through the SWP process in a

timely manner, the fact remains that members who participate by proxy are not really “present” at that meeting, and thus are not actively participating in the process. This has implications for the actual levels of representation that was achieved by the committees at any given time, despite quorum being met. The overuse of proxy voting in practice thus may run contrary to the goals of substantive representation, any may not actually enable the committees to get the “right,” or even consistently the same, people around the table.

Moreover, it is worth questioning whether or not absenteeism rates would have been the same if there was no proxy mechanism in place. Would more members have been more dedicated to regularly attending meetings if there was no alternative for their participation? Conversely, without the proxy mechanism, would the SWP processes have met the regulatory timelines set out by the *Clean Water Act* for the completion of the program? The detailed analysis on proxy use in the Lake Erie SPC revealed nuanced findings that are currently not present in the literature, that yet provide an additional dimension to representation that is worth considering in larger debates on the design of collaborative processes.

In general, the absenteeism and turnover rates that were experienced during the Ontario SWP process raise other questions regarding the extent to which the committees were able to achieve other goals of collaboration. For example, although social learning was not a factor that was analyzed or measured in the current analysis, the repeated absence of members over time throughout the process challenges the extent to which social learning was achieved during the process. This question is particularly salient, given that one of the prominently identified factors to enhance social learning in collaborative settings is that the participants are able to have extended engagement with one another (Koontz, 2014). Scholars assert that true social learning, when enabled through collaboration, can also allow the transfer of knowledge among participants who begin the process with their own epistemologies and skillset towards the issue at hand (Siddiki, Kim & Leach, 2017). A common claim in the literature is that development interests tend to dominate in collaborative settings, and that their worldviews can prevail over other, less dominant interests, such as environmental or justice groups (Schuckman, 2001; Ansell & Gash, 2007; Gerlak, Heikkila & Lubell, 2013). This domination may become exacerbated in cases in which development and other economic interests are physically around the decision-making table more frequently than other interest groups.

Moreover, repeated absenteeism and turnover rates among particular groups can have implications for trust-building throughout the process. Although the long-term nature of many collaborative watershed initiatives is said to provide participants in these initiatives with increased opportunities for trust-building to occur (Siddiki, Kim & Leach, 2017), this is arguably only effective insofar as members are present and actively engaged in the activities of the collaborative group. Although successful collaborative processes begin with a certain degree of trust, authors also suggest that

it can take several years for collaborations to truly develop this trust to a level that allows the group to carry out their activities effectively (Huxham & Vangen, 2005; Ansell & Gash, 2007; Margerum, 2007). Therefore, although this research does not analyze the extent to which interests were represented in the actual discussions and decision-making of the committees, the higher frequency of absenteeism and turnover among the public interest sector suggests that there could have been additional implications on social learning and trust-building throughout the process.

With respect to member turnover, one unanticipated was the relative importance of maintaining the membership of provincial Ministry of the Environment liaisons on the committees, and the difficulties that appeared to be experienced by the SPCs in securing consistent Ministry representation for the duration of the SWP planning process. Interestingly, members seemed more concerned about having consistent provincial liaisons present at SPC meetings than they were about having consistent representation among voting members. This also departed from the concerns of some MPPs during the debates on Bill 43, which were largely centered on whether the right stakeholders from across the watershed region would be enabled to participate in the process and whether this representation would be equal across the various sectors. Rather, some of the committees encouraged members to participate in meetings by proxy, so as not to lose quorum at meetings and ensure that regulatory deadlines were met.

There are some insights from the literature that may explain some of the SPCs' concerns with Ministry representation. For example, McNamara (2015) suggests that in mandated collaboration, communication channels within and across organizational boundaries are often formalized under the mandate that governs the collaborative process, and are used by participants to identify the specialized skills and resources that are required to achieve certain goals. Furthermore, Minnes's (2017) research on the Ontario SWP process lends some support to this idea. In her in-depth analysis of the experiences of the Cataraqui and North Bay-Mattawa source protection committees, she revealed that Ministry liaisons were perceived by SPC members as being important to the process by providing technical capacity to the committees and creating links to other provincial ministries such as the Ministry of Natural Resources and Forestry and the Ministry of Transportation (Minnes, 2017). The provincial liaisons in the Ontario SWP program likely played distinct roles on the committees by providing formal channels of communication between committees, and between the committees and the convening authority. Members therefore may have perceived consistency in this role to be necessary for maintaining an effective and efficient communication network across the province for the duration of the SWP program. Still, the relative importance of the consistent participation of the provincial liaison compared to interested parties in the watershed raises the question of whether representation from across the watershed was important, both to the participants in the process and for the effectiveness of the collaborative process itself.

This question is relevant in the context of an emergent finding from the analysis, which was that committees were consistently concerned about meeting regulatory timelines at the expense of voting member participation. This was observed in discussions regarding the time-sensitive nature of meetings that were held near the end of the SWP planning process, when final details regarding the source protection plans and their policies needed to be worked out by the committees in order to meet their regulatory deadlines. At times, the procedural requirements for the committees appeared to outweigh the implicit benefits of ensuring that all SPC members could participate in important decisions, including the content of source protection plans and how its policies would address drinking water threats. This also raises questions regarding the effectiveness of the SWP program that operated within these timelines. The literature provides some claims in this regard, noting that decisions that are made “expeditiously,” owing to statutory or regulatory deadlines, might represent symbolic decisions rather than those that were made based on the true collaborative principles of inclusion, deliberation, knowledge sharing, learning, and consensus-building (Lubell, Leach & Sabatier, 2014; Brisbois and de Loe, 2016).

Overall, the findings from the analysis on representation in the Ontario SWP program suggests that while the legislation in theory enabled and enforced the full representation of all sectoral interests in the watershed regions, this representation was not necessarily achieved in practice, particularly with regards to the public interest sector. This reinforces some claims in the literature that discrepancy often exists between this representation on paper and the representation that is achieved in practice in collaborative settings (Kim & Siddiki, 2018; Koski et al., 2018). The findings related to the importance of attaining meeting quorum through proxy voting as well as the requirement to meet regulatory timelines at the expense of substantive representation further beg the questions: if members are not around the table to make the decisions that inform the policy outputs of collaboration, to what extent were these decisions really made on the basis of representative collaboration? Conversely, to what extent were decisions made simply to fulfill other priorities, such as those related to political timeliness? Although beyond the scope of these analyses to answer, these questions should be considered in future research on collaboration, particularly in the cases that this process is mandated.

5.2 Public Participation

5.2.1 Findings

The content analysis of the SPC meeting minutes revealed that numerous factors related to public participation appeared to be sources of ineffectiveness throughout the SWP planning process. As previously discussed, numerous provisions in the *Clean Water Act* and its regulations mandated particular public participation activities that each of the committees were required to undertake.

The SPCs each appeared to confront a common set of barriers to effective public participation in their respective SWP planning at various points throughout the process, albeit to varying degrees. Although certain public participation activities were mandated under the *Clean Water Act*, as described in length in Chapter 5 of this research, the committees experienced limitations with regards to these requirements which presented barriers to achieving effective public participation in this process. This section will detail the findings from this leg of the analysis.

5.2.1.1 Public Consultation

One of the provisions under the regulations related to public participation were the requirements for public meetings to be held by the SPCs in the development of their locally-construed, watershed-based source protection plans. Section 4 of O. Reg 287/07 required that SPCs hold at least one public meeting for each of the drafts of the terms of reference, assessment reports, and source protection plans that were prepared by the committee. The purpose of these meetings was to provide the public with the opportunity to be presented the drafts by those involved in preparing the documents, and also to provide their comments directly to the SPCs. The regulation also required the committees to consider all of the comments made at these public meetings when finalizing each of these documents for the official submission to the Minister.

However, the mere fact that public meetings were a mandatory component of the collaborative SWP processes did not necessarily appear to result in greater public involvement. The meeting minutes revealed that low turnout at public meetings and open houses was a common occurrence across all three committees. Low turnout in the early phases of the program, particularly for consultation on the draft terms of reference, was a common finding in the minutes of each of the three committees. In the Bayfield SPC, three open houses were held during the spring of 2008, and only 23 members of the public were present across the three meetings. In the Lake Erie SPC, it was also noted that its two meetings held in spring 2008 were not well-attended, with only forty members of the public attending between the two, despite the committee's efforts to distribute flyers and advertise the meetings in the local newspapers. In June of that same year, this issue was raised again; one member of the Lake Erie SPC expressed concern regarding low turnout at public open houses, and that municipalities and conservation authorities had been spending "considerable time and effort" with minimal attendance at these meetings. In the Trent SPC, during discussions on the public meetings that would be held in the summer of 2008 on the draft terms of reference, one committee member noted that these types of meetings "are not usually well-attended" by members of the public. In the SPC meetings following the completion of these summer consultation sessions, another member questioned whether the turnout at these meetings made them worthwhile to hold, in terms of their costs in terms of advertising, SPC staff resources to prepare for and

attend these meetings, and the time of SPC members who also attended. Therefore, while there were no specific numbers with regards to turnout that was indicated by the Trent SPC, interpretation of the discussions that did occur suggest that turnout at these meetings might have also been on the lower side.

Some committee members suggested that low turnout so early in the process might have been due to the fact that SWP was a relatively new concept at the time, and that people were not yet aware of its processes and how it might impact them, as citizens of the watershed. The Chair of the Lake Erie SPC mentioned specifically that, until people become aware that they are personally affected by the SWP process, the committee should not expect there to be considerable turnout at public meetings. In response to the initially low turnouts, discussions that occurred at the higher level among all SPC Chairs and the Ministry discussed the provision of additional advertising methods to increase the public's awareness of the process and opportunities for their involvement. However, reports from those meetings indicated that the focus of the province at that stage in the process was for SPCs to use existing channels for public communication, despite the relatively low turnouts these methods appeared to garner.

Interestingly, the Lake Erie SPC reported that public meetings held to consult on the actual draft source protection plans, which plans contained the proposed policy tools that the committee was planning to implement in each of the source protection areas in the region, also had relatively turnouts. Despite earlier discussion that had occurred among committee members suggesting that having proposed policy tools would better entice the engagement of the public at meetings, it appears as though that at least for the Lake Erie SPC, turnout was an issue regardless of the status of the various documents. However, in this instance, low attendance was not viewed in such a negative light as it had been previously. Rather, the Chair suggested that the low turnouts for meetings on the draft plans was indicative of "a positive trend of increased public understanding" and that SPC staff and members had successfully answered the majority of the public's questions and concerns regarding SWP.

One specific finding of the analysis was that the timing of these meetings was crucial, particularly if the involvement from the agricultural communities was one of the goals of the public participation activities. For example, early on in the process for the Bayfield SPC, it was noted that the proposed consultation sessions on the draft terms of reference would be held during the summer months would be held during a busy time for the agricultural community, and that the SPC would likely not receive many comments from that sector on the document as a result of this "poor timing." However, despite this concern, the dates for the public consultation were not altered. It was instead decided that since there were a limited number of questions for the public to answer on the Terms of Reference at those meetings, and that increased engagement was expected for the project during subsequent phases of the SWP process, the summer dates should remain. At a later date, following the public consultation on the draft source protection plan policies, it was indicated that landowners had been unable to attend the public

meetings, and that they requested that the document be mailed directly to them so that they may be involved in the process to determine if policies would affect their property rights.

The Bayfield SPC also reported difficulties in garnering participation from the agricultural communities in the watershed, even for meetings that were held specifically for that sector. In 2012, the committee held meetings for the sole purpose of engaging with landowners who may be affected by specific policies in the source protection plans, in order to inform them what these plans might include and how they might be impacted by its various tools. The committee held three public meetings specifically for this purpose, and noted that in addition to “extensive” advertising on the radio and in local newspapers, direct mail invitations were sent to all impacted landowners. However, despite these efforts, the committee reported that two of the three workshops were poorly attended. In an attempt to increase landowner turnout at the third meeting, SPC staff directly called potentially impacted landowners prior to the meeting, which efforts paid off and resulted in higher attendance at this meeting.

The issue of coordinating public consultation sessions to align with the availability of the agricultural sector also appeared as an issue for the Trent SPC. For this committee, delays in the schedule for the technical work for the assessment reports had resulted in a delay in the finalizing of these reports, which pushed public consultations into mid-June. This was raised as an issue by an agricultural representative of the committee, who asserted that holding public consultation meetings during the summer would be “poor timing for the agricultural community.” At the following meeting, that same representative suggested that meetings in areas of the source protection region that have a higher number of threats resulting from agricultural activities should be scheduled to be on the later dates.

An emergent finding from the content analysis was that certain elements of the mandated collaborative water governance process through the *Clean Water Act* appeared to impact the effectiveness of the consultation activities that were carried out by the committees. The regulatory timelines imposed by the Ministry through the *Clean Water Act* for the completion of the various stages of the SWP program did not reflect the scope and extent of work that was required for the committee to undertake for public consultation. What was evident in the content analysis of the meeting minutes was that these various regulatory timelines appeared to impact the public consultation activities of the SPCs, particularly in terms of scheduling and coordinating public consultation in a manner that would enable the committees to meet their regulatory requirements, but also to conduct public consultation in a manner that would garner meaningful public engagement.

For example, in the Lake Erie SPC, the minutes of the January 2010 meeting revealed that there was an apparent tension between the regulatory need to submit final SWP documents to the Ministry by the deadline, and the simultaneous desire of the committee to ensure the technical studies were well-researched and reviewed and that public consultation was effectively carried out. This was evident in a

discussion that was held among committee members, during which some expressed concerns that the process of completing the technical studies was being rushed in favour of meeting the deadline, while others argued that if the timelines for the completion of the studies were not met, not only would this impact the committee's ability to meet regulated deadlines, but would also push public consultation into the summer months. While the member agreed that this timing was not ideal, he did also reiterate that he did not want the process to be rushed. In the end, the committee voted by majority to adhere to the timeline and hold the public consultation sessions prior to the summer months, thus requiring the technical studies to be completed in less time to accommodate this.

The Trent SPC also appeared to confront the question of whether to adhere to regulatory timelines at the expense of the quality of the committee's work, with particular reference to public consultation. Specifically, the committee noted that the Ministry's delay in approving and implementing the Assessment Report regulations and the Technical Rules for the completion of the assessment reports had put the committee behind schedule for completing its technical studies and for their subsequent development of the assessment reports. The committee was poised to choose between two options: request an extension of the deadline for submitting the assessment reports from the Ministry, or submit partially complete assessment reports. The committee decided firmly against the latter option, and stated that they were not comfortable with submitting partially complete reports, in terms of making them available for public consultation.

5.2.1.2 Direct Engagement with Landowners and Residents

In addition to consultation with the general public on the various SWP documents, O. Reg. 287/07 set out specific requirements for SPCs to notify particular members of the public of the SWP process and of the activities that the committee was undertaking in the pursuit of its mandate. The regulation required that SPCs send notices to every person who the committee believes is engaging in one or more significant drinking water threats within the source protection area, according to the information contained in the assessment reports.

There were some aspects associated with the landowner contact efforts that appeared to be problematic for the committees. For example, the provision of information and communication letters to landowners appeared to be somewhat of a significant undertaking. The Lake Erie SPC noted that there would be upwards of 5,000 potential significant drinking water threats that had been identified across the Region, which would require letters to be sent to each landowner who has property on or was engaging in activities that might potentially result in this threat. Moreover, one member asserted that letters sent to landowners could not be a "shotgun approach," and that the identification of the activities or threats needed to be differentiated in each landowner contact letter. The amount of custom information required

for this notification was deemed to be somewhat of a burden for the committee, one member noting that this undertaking was simply “not practical”. The Trent SPC, in contrast, did not appear to view the customization of each of these notification letters as necessary; for the approximately 1000 landowners identified as having significant drinking water threats on their property in the region, one generic letter was sent on behalf of the committee.

For the Bayfield SPC, the requirement to contact landowners was perceived to be somewhat of a burden, and this appeared to impact the actual enumeration of threats to a certain extent by the committee. When discussing the implications of including certain dense non-aqueous phase liquids, which are chemicals that are denser than water (DNAPLs) in the enumeration of significant drinking water threats in the source protection plans, it was also discussed that, if the committee were to include residential DNAPLs in the enumeration in addition to the commercial DNAPLs, an additional 400 notification letters would need to be sent. In the end, it was decided that residential drinking water threats would be removed from the enumeration of threats, except where they may be of commercial sale, in order to reduce the number of notification letters that the committee was required to send.

Moreover, there were also issues experienced by the SPCs in terms of landowners’ provision of information about their properties when requested to do so by the SPC. The SPC noted that data gaps in both the assessment reports and source protection plans appeared to be due to uncertainty pertaining to conditions and activities on landowners’ properties. As the sharing of property-specific information was at the landowners’ discretion, it was noted that some individuals were more cooperative than others in sharing this information, as some were afraid to do so due to fear of liability. Other members also raised the issue regarding the reliability and accuracy of the information being provided by landowners, and wondered if there was any regulatory responsibility for people to provide accurate information to the committee to populate the assessment reports, which would subsequently inform the policies developed in the source protection plans, as the approach of the committee had been to accept all information received as accurate, regardless of sector, and to verify the information at a later date. One member inferred that the process was a self-regulating system, as all public feedback acquired through the SWP process was part of the public record. It was also indicated by the committee that “dealing with landowners...has proven to be a challenge” during the assessment report stage for certain areas of the source protection region, and the committee was concerned that this might impact the policy implementation process in the LER.

The Bayfield SPC also reported issues of a similar vein in their efforts to gather information from landowners and residents. A fundamental component of the assessment reports was the enumeration of threats in each source protection area within the region. Although threats had been identified remotely by consultants, verification of the number of threats had to be achieved through surveys and field

verification, undertaken by the SPC. Specifically, the SPC required that residential property owners who were located in highly vulnerable areas and within a two-year time-of-travel zone, disclose any activities or other threats that could potentially be a risk to drinking water, so that threats could be identified and policies to address those threats could be developed in the source protection plans. However, the Bayfield SPC reported relatively low response rates for each of these survey efforts: of 2000 surveys mailed out to owners living in the two-year time-of-travel zone, only 1000 had been returned, and only 40 percent of residential surveys for property owners in vulnerable areas had been returned. This prompted the SPC to have to devise other mechanisms to determine whether or not there were threats on those residential properties, which slightly delayed the completion of the assessment reports by the committee.

In the Trent SPC, approximately 8000 notification flyers were sent to properties in May 2012 where it had been determined that there was the potential for significant threats to drinking water to exist. The committee noted that there had been “very little response” from the circulation of these flyers and from additional outreach activities. In 2013, the committee noted that there was a need to increase the buy-in from landowners for SWP by providing them with specific information related to their properties, as well as the opportunity to speak to someone in person about the identified threats. One member on the Trent SPC who represented an agricultural interest in the watershed noted that, in general, farmers are better contacted in person and with another agricultural representative, rather than by telephone or through other less personal means.

Finally, in notifying landowners, the committees noted that the type of language that would be used in these communications was critical. In particular, it was made clear that notification letters should identify that it was not the owner or the property that was the threat, but rather the activity; in addition, the language used was not to be “alarming” so as not to cause concern or panic among the recipients of the letters. On a positive note, the Trent SPC stated that one co-benefit of the threat verification process was the opportunity to reach out directly to landowners and educate them on the process, and to make them aware of the opportunities available to them to facilitate their work for drinking water source protection, such as the Ontario Drinking Water Stewardship Program.

5.2.1.3 Public Perception

One theme that emerged from the analysis that was tied to the public and transparent nature of the collaborative SWP process was the importance of the public’s perception of the process and its outputs, and the efforts made by the committees to ensure that this perception remained favourable. The analysis revealed three primary elements of public perception that appeared to be of pivotal importance for the committees: first, that any messaging stemming from the committee to the public with regards to the SWP process and its outputs were consistent with the discussions and decisions of the committee as a whole;

second, that public misinterpretation of and misconception over the technical documents prepared by the committees was minimized; and third, that official SPC meetings were made accessible to members of the public across the watershed, and that members of the public were given the opportunity to speak at these meetings when appropriate.

The SPCs emphasized in the outset of the SWP process that it was imperative that the committee speak with “one voice” when addressing the public outside of the official proceedings of the SPC, in order to maintain the optics of the committee. Specifically, in the Lake Erie SPC, individual committee members were directed not to respond to comments and concerns from the public on behalf of the SPC, but rather to address these concerns through the committee. This notion was formalized in the official rules of procedure for the Lake Erie SPC, which indicates that upon a two-thirds majority vote of the committee, the committee may formulate a united response or statement to be made public on behalf of the committee. Generic questions received by the SPCs were submitted through the source protection authority of the committee, while more sector-specific questions were directed to the sectoral representatives. Another interesting example arose from the Bayfield SPC. A particular instance occurred, in which some engineers at a public meeting proclaimed the SPC had the authority to shut down cottages in the region due to improperly working septic systems. The committee thus had to rectify this messaging and ensure that accurate information was presented and available to the public in order to dispel any incorrect messages stemming from outside parties to the process. In the Trent SPC, it was established at the first meeting of the committee that the Chair and the Project Manager be the point of contact for public inquiries into the process, emphasizing the importance of maintaining a unified voice throughout the SWP process.

A final example of the efforts made by SPCs to increase the public’s positive perception of the SWP process was that they strived to make their meetings accessible to the public, and attempted to increase the public’s direct involvement in the proceedings of the committee meetings by providing the opportunity for hearings of delegations. O. Reg. 288/07 required that all official meetings of the SPCs across the province be open to the public, and that all or part of SPC meetings may only be closed when the committee discussed issues that were personal or financial in nature and in regards to an identifiable individual. An analysis of both the meeting minutes and the location of the SPC meetings over the course of the SWP process indicates that all three committees made a purported effort to ensure that their meetings were accessible to various members of the public throughout the SWP development process.

The committees intentionally scheduled their meetings in various locations across the watershed, albeit to different extents. Discussions held in these meetings indicated that it was important that the meeting location vary to accommodate the attendance of members from different areas of the watershed. In the Trent SPC, it was noted that while winter meetings would generally be held in the most central

location for committee members in order to accommodate the seasonal difficulties, it was agreed by consensus that meetings during the rest of the year needed to change location to permit participation from members of the public from other areas of the watershed. The Lake Erie SPC also indicated early in the SWP process that the purpose of having off-site meetings from time to time was to encourage members of the public across different locations in the region to attend the meetings; they also indicated that local advertising options would be investigated to further facilitate public attendance at meetings. The Bayfield SPC noted that visitors were welcome at all SPC meetings. It appears as though the SPCs went beyond the requirements in the legislation by proactively facilitating greater participation and attempting to ensure equal access to meetings for all members of the public.

Finally, each of the SPCs in this research provided the opportunity in their formal proceedings for members of the public and of third-party organizations to make presentations to the committee as official delegations. Each of the committees included in their rules of procedure for the committee proceedings the provision to allow delegations to make presentations, and the procedure that must be followed by delegations in doing so. Throughout the SWP process, numerous delegations were heard by each of the SPCs, thus appearing to increase the public's and other organizations' access to the proceedings of the meetings and allowing the incorporation of additional sources of knowledge into the discussions held by the committees. In theory, delegations could also discuss their concerns with the SWP process, thereby creating a direct line of communication and dialogue between the SPC and the public for these matters.

5.2.2 Discussion

The hypothesis posited at the outset of this research was that the institutionalized nature of public participation through the *Clean Water Act* would mitigate some barriers to public participation that are identified in the literature, such as the sidelining of public participation and consultation for other activities by the collaborative group and issues associated with a lack of access to information about the process by members of the public. The analysis revealed that the committees appeared to value the benefits of public participation to the collaborative process and were committed to meeting their mandated public participation activities. However, contrary to the initial hypothesis, while the institutionalized nature of public participation may have ensured that some formal public consultation took place and that the general public was informed of the process to a certain extent, the committees faced a number of issues relating to public participation that appeared to stem from this very institutionalization.

Specifically, the findings revealed that some of the specific procedural elements of the *Clean Water Act* that prescribed the processes of collaboration for the SPCs may have been an explanatory factor for some of the inefficiencies experienced by the committees. One of these elements was the

timeliness of the SWP program that was mandated through the *Clean Water Act*, which appeared to have an impact on the committees' ability to appropriately schedule public meetings in a manner that would result in high public turnout from the general public, as well as members of the agricultural community who had more restrictions on their availability for that type of engagement. Although the literature notes that collaborative water governance endeavours are typically time-consuming and thus can pose problems for the sustained interest of the public to participate in the process, existing scholarship is less vocal about how constrained timelines for collaboration can impact the effectiveness of public consultation efforts. However, this appeared to present a challenge for committees, who had to schedule public consultation meetings at a time that would garner adequate turnout from landowners, as well as the general public, and also that would enable them to meet the regulatory timelines established in O. Reg. 287/07. The perceived rigidity and political deadlines attached to what was also touted as a rigorous, science-based, and ultimately collaborative undertaking at the watershed level limited the extent to which committees were willing or able to consult with the public.

This observation also leads to larger questions regarding the spirit of the *Clean Water Act* when it was written and subsequently enacted into law. As Bidwell & Ryan (2006) suggest, while intentionally-designed collaborative processes containing particular targets (such as timelines) may encourage desired behaviors among those involved in the collaboration, this may also have the "unintended effect" of "overshadowing the desired ends of the collaborative process itself" and replacing them with bureaucratic processes that the collaborative organization itself was designed to mediate (p. 840). The committees often expressed that the public consultation efforts were not as effective as they could have been, partially owing to other regulatory requirements. These requirements were at odds with the true goals of public participation in collaborative contexts, and likely undermined this element of the SWP processes as a result.

Low participation in locally-based watershed initiatives is also attributed to poor communication efforts (Minnes, 2015). In this sense, when citizens are not provided with enough information in a timely manner about the process and opportunities for feedback, low participation levels can result (Minnes, 2015). The fact that the committees appeared to have difficulty in generating adequate turnout at some of their public consultation meetings reflects existing claims that concerted efforts must be undertaken by a given collaborative partnership to involve the public in the process, if public participation in that process is voluntary (Bidwell & Ryan, 2006). Although there were attempts by some of the SPCs to increase their communication efforts to the public in advance of public meetings, requests of same from the committees to the province were denied and increased communication efforts were therefore not uniformly nor systematically enabled across the watershed regions. Instances of low turnout calls into question the intent and effectiveness of the legislation and its regulations for achieving the goals of public

participation, if this was truly one of the objectives behind the provinces' "locally-driven" drinking water source protection program. The reluctance of the Ministry to provide additional channels of communication for the SPCs to inform and educate the public on the program also raises a red flag in terms of the true intentions of the program, and whether effective management stemming from the local level was really its overarching goal.

In terms of direct contact with landowners, the meeting minutes revealed that the SPCs viewed this engagement to be pivotal to the success of the SWP process. This is reflective of claims in the literature that this engagement is necessary not only for collaborative decision-making to enact meaningful change among this group of people, but also to avoid resistance to the decisions arrived at through the collaborative process (Bidwell & Ryan, 2006; Kaplowitz & Witter, 2008; Margerum, 2011; Carr, Blösch & Loucks, 2012; Patterson, Smith & Bellamy, 2013). Evidence from the discussions that occurred during the meeting minutes underscored the importance of this engagement for the SPCs, not only by virtue of their requirement to do so under the regulations but also due to its perceived impact on the accuracy and effectiveness of the source protection plans.

Some scholars have suggested that landowners might view SWP processes in an adversarial light and be prompted to disengage from the process if they believe it will encroach on their land use practices (Rawlyk & Patrick, 2013). However, the committees appeared cognizant of this notion, and wanted to ensure that communication to landowners did not accuse the landowners themselves as a threat to drinking water quality, but rather that particular activities could potentially constitute this threat. Despite this, a lack of engagement was still perceived as an issue for the SPCs, given low response rates and low turnout at meetings. One potentially explanatory factor for this was the sheer volume of notification letters that had to be sent by the committees to landowners who were identified as potentially contributing to drinking water safety issues: while a "shotgun" approach was clearly unfavourable in notifying these landowners, the committees also noted that the amount of custom information that would be required in the sometimes thousands of notification letters that needed to be sent out was also not practical. It is possible that this impacted the quality and personability of the messaging that was sent to landowners in this regard, potentially hampering their willingness to engage by enabling their apathy towards the SWP process and their role in it. Such apathy has been alluded to by Minnes (2017) as a problem that groups may face in engaging with the landowner community. Again, this appears to be an ill-sighted feature of the collaborative process that was designed as a theoretical good practice under the legislation that nevertheless did not account for the pragmatic issues that would be experienced by committees on the ground, and how it would potentially impede the collaborative process from moving forward efficiently.

Moreover, the apparently convoluted process through which the committees were mandated to notify landowners may have made this process less efficient and effective for engaging landowner

commitment to the SWP process. While there is an identified need to engage landowners and other stakeholders early in the collaborative process, there is also a need to ensure that information is disseminated accurately to meaningfully engage and have an effective partnership and dialogue with these groups. This process thus appeared to complicate matters for the committees not only because it required them to send updated communications to landowners if their activities were no longer considered a threat, but also because the effectiveness of that process was also partially dependent upon receiving property-specific information from landowners. This task proved to be more difficult than was perhaps envisioned when the process was designed, as response rates to these requests among landowners tended to be low.

Again, these difficulties speak to the particular design features of the process that were mandated through the *Clean Water Act*, and also suggest that the mode of engagement, at least for this subgroup of the general public, appeared to matter, a notion confirmed by one members' recognition that farmers tended to respond better to in-person engagement, rather than through impersonal means. The experiences extrapolated from the meeting minutes therefore raise the question about how to meaningfully involve implicated members of the public that are deemed crucial for certain elements of a given collaborative planning and decision-making process. Although the committees appeared to make efforts to ensure their communication was non-alarmist and facilitated two-way engagement with landowners to assist them in identifying threats, the convoluted and onerous nature of the process of threats identification and landowner notification that was mandated through the legislation appeared to confront them with some barriers to having this process reach its full effectiveness.

The efforts by the SPCs to enhance the readability of the technical documents that were subject to public consultation suggests that the committees wanted to ensure that citizens of the watershed could meaningfully participate in the public consultation process and that their input was facilitated by a greater understanding of this technical material. The literature asserts that public consultation on policy issues can be ineffective if participants have limited knowledge on the policy issues at hand, and that this can undermine the "practical value" of their input (Culver & Howe, 2004, p. 55). Moreover, Arnstein's (1969) ladder of participation analogy argues that public consultation ventures, such as public meetings, can be tokenistic rather than meaningful, if information is presented in a highly technical manner that is not within the realm of general public knowledge.

The SPCs' efforts to simplify portions of the technical documents by providing rationales and explanations, while still also providing the full range of scientific explanation to support their conclusions, suggests that the committees were interested in facilitating meaningful public consultation on these documents. This attention given by the SPCs to determining the information needs of watershed citizens, and framing the information on which they will consult in order for it to be useful in terms of garnering public input, is viewed as a positive contribution to public consultation efforts (Culver & Howe,

2004). These efforts not only support sentiments in the literature that public consultation is not effective in and of itself if there are barriers to the public's understanding of the issues at hand, but also that the SPCs wanted to be proactive in avoiding misinterpretation and the potential public apathy towards the program that this could generate (Arnstein, 1969; Culver & Howe, 2004; Cornwell, 2008). However, it also shows that SPCs had to be innovative on their own and adapt to the issues they faced on the ground in this regard, in light of the process-heavy and technical requirements for the outputs of the SWP process as mandated through the legislation.

One final theme that emerged was related to public perception. Findings related to this theme suggested that the public's perception of both the collaborative process, and of its outputs, was important to the integrity of the process. The extent to which this was prevalent in the findings does not match its prevalence in the collaborative governance literature, although it does reflect some claims that favourable public opinion of a collaborative process will increase the substantive legitimacy of the process and its outcomes, which opinion can be facilitated through a process that is open and transparent (Trachtenburg & Focht, 2005). The committees exerted extensive effort to ensure that messaging that stemmed from the committee was consistent and reflective of the discussions and decisions of the committee, and that official SPC meetings were accessible to the public and allowed for their direct participation in these meetings. The decisions made by the SPCs in this regard seem to reflect their commitment to ensuring that public misconceptions or concerns about the process were being addressed by the committee as a whole and with a unified response. The committees also increased the involvement of the public in the intimate undertakings of the SPCs beyond what was required by the legislation through enabling greater participation at their meetings, thus increasing the transparency of the process, which is fundamental for decisions made by these bodies to be seen as legitimate (Carr, Bloschl & Loucks, 2012). The committees intentionally scheduled meetings at locations across the watersheds, and by allowing members of the public to participate directly in the SWP process by presenting at SPC meetings. Arguably, in doing so, the committees could demonstrate to the public the transparent nature of the process, and invite comments beyond the opportunities already provided through public meetings.

Overall, the findings related to public participation depart from the literature in some very basic respects. While the literature largely suggests that the institutionalization of public participation in collaborative processes is necessary, and that mandates should prescribe the participatory planning processes that should be used in these settings, the experience of the committees analyzed in this research suggest that the Ontario mandate was inflexible, process-heavy, and too wrought with other regulatory requirements to be truly effective in meeting the goals of public participation. As was the case in representation, the necessity of meeting the timelines set out in the regulations appeared to trump the necessity and importance of meaningfully engaging the public in the SWP planning processes. This was

reflected in the Ministry's reluctance to provide additional channels for communication with the public and increased opportunities for their involvement. Rather, any additional efforts in this regard had to stem from the committees themselves and therefore were not necessarily widespread across the watershed. Although it is not possible to determine a direct cause and effect relationship between public participation and the mandate through the analysis presented here, the issues that committees experienced with low turnout and landowner contact in particular appeared to be non-rectifiable in the face of other regulatory requirements.

5.3 Financial Capacity

5.3.1 Findings

Funding for the Ontario SWP program was largely undertaken by the provincial government. Specifically, the Ministry of the Environment and the Ministry of Natural Resources jointly funded the program until 2011, at which time the Ministry of the Environment assumed full funding responsibility for the program (Auditor General of Ontario, 2014). In each SPC, the lead source protection authority has responsibility over all of the financial needs of the committee, as the Ministry provides funding to each SPC through the source protection authority (Minnes, 2017). The source protection authority allocates this funding accordingly to the various activities of the SPCs, including the hiring of consultants to complete technical studies, and the compensation of per diem payments for SPC members, among other costs (Minnes, 2017). Since the beginning of the SWP process in 2007, over \$250 million in provincial funding has been allocated to the program (Minnes, 2017). A separate stream of provincial funding for SWP activities has also been made available throughout the program for stewardship-related activities.

Although the province has invested what appears to be a substantial amount of money in the SWP program, the meeting minutes of the SPCs analyzed in this research indicate that the committee members found particular elements of the provincial funding structure to be problematic. In this section, the committees' experiences with these various elements will be explored in detail, organized by the two major findings, which were financial capacity for SWP planning and financial capacity for the implementation of the source protection plans.

5.3.1.1 Financial Capacity for SWP Planning

One finding from the content analysis was that there were some points during the planning phase in which there was a disconnect between the provincial allocation of funding and the capacity needed by the SPCs to achieve their mandate under the *Clean Water Act*. The planning phase of the SWP program required the committees to undertake numerous activities that would eventually culminate in the development of watershed-based source protection plans. Observations across all three sets of meeting

minutes indicated that there were times that the committees felt as though the extent of the work that needed to be undertaken in order to meet the objectives of the SWP program exceeded the amount of funding that the province was willing or able to provide. This disconnect was interpreted to be a source of ineffectiveness of the SWP process by committee members.

The fundamental inefficiency that SPCs appeared to face related to their financial capital to undertake the work required of them under the *Clean Water Act* was that the funding for these activities stemmed exclusively from the Ministry of the Environment (and the Ministry of Natural Resources, until 2011), and that this funding was not always sufficient for the extent of work that the committees believed was required to address all of the drinking water threats in their watershed regions. This sometimes resulted in the committees having to re-scope, or abandon completely, some elements of their work in order to fit within their allocated budgets, which budgets appeared to vary from region to region and were “based on a formula that was not shared with the conservation authorities or municipal staff.” For example, during one of the meetings of the Bayfield SPC, the committee discussed a recommendation made by one of their hydrologists that a third Intake Protection Zone (IPZ-3) be developed and included in one of the assessment reports within their region. The inclusion of this IPZ-3 would expand the amount of that source water that would be subject to protection mechanisms through the source protection plan. However, the costs associated with modeling an IPZ-3 would be quite high, and the committee asserted that performing this modeling in the region would take “a considerable amount of time and money” and in light of this, decided not to delineate an IPZ-3 at that time. While the committee noted that there did not appear to be drinking water issues of concern outside of the existing IPZ-2s, they did suggest that the idea could be re-visited in the future should new threats to drinking water arise.

In the Trent SPC, the SPC members had what appeared to be an intensive discussion regarding the identification of “other” drinking water systems in the delineated vulnerable areas of the source protection areas within the region, which would include private wells, small and large non-residential drinking water systems, and seasonal residential drinking water systems. However, because the chemical information that was available for these other systems was incomplete at that time, conducting the necessary studies to delineate whether or not there were activities stemming from these systems were caused wholly or partly by anthropogenic activities would require funding that the committee acknowledged was not available. Despite the fact that the SPC acknowledged that these systems had “tremendous importance” in the Trent region, the completion of these technical assessments that would be required to inform source protection policies on these systems would be difficult to achieve without MOECC funding; as a result, the Trent SPC decided to not pursue this work altogether.

In the Lake Erie SPC, the development of the terms of reference appeared to reveal to the committee that there was some discrepancy between the funding that had been allocated to them in their

budget for technical work and the extent of the work that would actually be required to address the full range of drinking water threats in the region. It was noted by the committee that the cost for the municipal technical work exceeded the amount of funding that would be provided by the MOECC for the lead source protection authority for such activities. The committee noted that it would be optimal in this circumstance to plan tasks in a manner that would enable their modification in the future, based on the actual provision of funds. In the following months, it was noted that should the province not provide the necessary funds to complete the tasks set out by the SPC in the terms of reference or subsequent documents, the work would have to be re-scoped to fit within the allocated budget. While the committee acknowledged that there were “simpler and less complex ways” to do this work, it was not what the SPC’s technical staff felt were adequate to fully address the risks to drinking water within the Lake Erie region.

One member expressed concern that if the Lake Erie SPC was “required to provide less quality, depth, and documentation” in response to funding shortfalls, that they would not be fulfilling their requirements under the *Clean Water Act*. In response, one of the staff members of the SPC noted that,

“...there is enough money to meet minimum basic requirements as laid out by the Ministry. The difficulty is that the technical professionals need to put together a product that they feel will be publicly defensible which may go beyond the Ministry’s minimum requirements. The Lake Erie Region is unique and this situation will need to be discussed with the Ministry separately from the other regions.” (Lake Erie SPC, November 6, 2008 meeting minutes, p. 6-7).

The Lake Erie SPC spoke specifically to this point, some members noting that the Lake Erie Region is very complex relative to other regions. While the SPC felt as though there was sufficient funding for most of the regions in the province to perform their required tasks, the Lake Erie Region had many issues in the watershed that required deeper investigation than might be the case in other source protection regions. It also housed a “wide cross-section of competing interests, activities, and values, which other SPRs do not necessarily encounter,” rendering the SPC unable to take a “simplistic view” on the ways it addresses certain drinking water threats. These issues associated with the complexity of the region and the allocation of funding appeared to be unique to the Lake Erie SPC.

What also emerged from the analysis of the meeting minutes is that the process of requesting additional funding from the Ministry for SWP planning was a source of frustration for the SPCs. As the primary enabler of financial capacity for the SWP process, the Ministry was the ultimate authority for how funds would be allocated, both at the outset of the SWP program and as the program progressed. The meeting minutes revealed that there were many instances in which SPCs found themselves passing

motions to request that the Ministry set aside funding in their budget for particular activities, and having to justify the need for this money in their requests.

One of the fundamental problems that appeared to be faced by the committees in this regard was that, while the SPCs could ask the province to provide funds for “whatever they (the SPCs) want,” it does not necessarily mean that the province will provide that funding. The question of whether or not certain funding requests would advance the work of the committee any further appeared to be a factor that committees considered in making these requests. For example, during the development of the various source protection plans for the Lake Erie Region, the committee noted that there were new drinking water threats discovered in the vicinity of the in the Kettle Creek source protection area that justified the extension of the source protection area, which would require extensive amendments to the Kettle Creek assessment report, on which the source protection plan for that area would be based. However, the committee noted that the Ministry’s priority at that stage in the SWP process was the completion of the larger Grand River assessment report, and that amending the KC assessment report would take resources away from completing that prioritized work. The committee also felt as though amending the KC assessment report absent the (financial) support from the Ministry would not only be time consuming and costly, but would also be largely unproductive. The committee voted on this matter and it was decided by majority to continue to develop the Kettle Creek source protection plan without making amendments to the assessment report, thus producing work in accordance with the funding priorities of the Ministry.

The design of the Ontario SWP program included a mandate for the SPCs to review and amend the terms of reference, assessment reports, and source protection plans on a regular basis in order to ensure they remained an accurate reflection of the drinking water threats in their respective watershed regions. In the more recent years of the SWP program, the discussions surrounding financial capacity for SWP planning activities appeared to center more on the lack of certainty of provincial funding for future SWP planning activities, and how this uncertainty impacted the type and scope of work that the committees would be able to undertake. For example, although the MOECC had issued a call for submissions by the committees for funding requests for the years 2015-2016, the committees noted that, while the Ministry was asking for these requests, there was no guarantee that they would be approved. As such, the work of the SPCs was proceeding on a draft basis until they received confirmation of funding. For the Trent SPC, this uncertainty progressed into the Ministry’s eventual denial of their funding requests for certain activities in the year 2015-2016. The meeting minutes indicate that work related to the extension of a local pipeline threat into the Lower Trent source protection authority, although not approved for provincial funding, needed to be undertaken regardless in the event of an emergency at the intake protection zone for that area.

Trent SPC members expressed frustration that the Ministry was operating on the basis of year-to-year budgeting. One member noted that the SWP program was “a permanent program that can’t get permanent funding.” At the end of 2015, it was indicated that the conservation authorities had begun a process to try to establish a multi-year funding program to support the ongoing financial capacity needs of the SWP program. However, it appears as though such a funding regime has not yet been established, as problems associated with annual budgeting for the SWP program have continued to be discussed by the SPCs. One member indicated that the SWP program was not expanding fast enough in terms of ensuring there were adequate financial resources available to address “hot spot” issues that have arisen in the watershed regions. There have also continued to be concerns regarding financial capacity to undertake an increased scope of work under the *Clean Water Act* following the approval of source protection plans.

5.3.1.2 Financial Capacity for Municipalities

Findings from the analysis of the meeting minutes suggest that the sample of SPCs did not think that municipalities were being provided with sufficient financial capacity to be able to participate equally in some components of the SWP program. For the planning component of the program, the committees noted that while conservation authority staff members on SPCs were eligible for funding for the technical work that was required to develop the various SWP documents, municipal staff on the committees were not. It was revealed that the capacity to support the committee and watershed planning component of the program had been built specifically under the conservation authorities, and that while provincial grants were provided to municipalities for consultant fees and the time spent to complete the technical studies, municipal staff time spent to manage these projects were not eligible for such funding. In light of this, the Lake Erie SPC committee felt as though municipalities should not be responsible for providing monetary incentives for landowners to comply with the policies that would emanate from the SWP process, as they had received minimal provincial funding for their involvement in the SWP program.

Moreover, capacity needs appeared to be far greater for smaller municipalities than larger ones in the watershed regions. For example, in the Trent SPC, some municipalities were able to take on the technical work that was originally delineated by the conservation authorities; these municipalities tended to be larger and therefore had the technical staff available who were capable of completing the work without the provision of provincial funding. However, SPC staff noted that it would be difficult to ask that all municipalities be responsible for undertaking certain work for the purposes of SWP without providing them with the adequate funds to do so. The findings from both the Lake Erie SPC and Trent SPC point to what appears to have been a shortfall in provincial funding for the SWP planning portion of the program for municipalities, specifically to increase their capacity to carry out some of the technical

work and logistics behind the foundational documents that were part of the mandate under the *Clean Water Act*.

In terms of the implementation phase of the SWP program, SPC members appeared to be particularly concerned about the potential costs that municipalities would have to bear in the absence of guaranteed and sustained provincial funding for the implementation of the policies in the source protection plans. Throughout the SWP planning phase, discussions indicated that committees were developing their watershed-based source protection plans without the guarantee that the province would fund municipalities to implement these plans. However, there was a clear desire across the SPCs that the province fund the hard costs of implementation, rather than having these costs fall to the municipalities. The committees appeared to be of the general opinion that the costs for implementation should remain at the provincial level as much as possible. Absent this, the concern was raised that many costs could be placed onto local municipalities for implementing policies that would benefit a wider group and be for the greater benefit of the province. This argument appeared to be based on the notion that ultimately, drinking water was a provincial responsibility, not a burden that should be downloaded to municipalities. These concerns also appeared to arise beyond the walls of this sample of SPCs: it was indicated that, across the province, members of the public and municipal representatives raised questions regarding who would pay for the implementation of the source protection plans upon their approval by the Ministry.

The SPCs made a number of recommendations to the Ministry about how the funding structure could be improved for the remaining duration of the SWP program. Among these recommendations was the suggestion that a provincial fund be established to assist municipalities with the start-up costs associated with their implementation of the source protection plans. What the committees felt was needed was a sustained partnership between municipalities and the Ministry to support the financial costs associated with implementation, and that this would be more productive than downloading these costs to the municipalities. Another was that the Ministry should establish a permanent provincial fund to support the ongoing implementation of the source protection plans in certain cases. For instance, funds should be allocated for implementation based on the severity of the threat being addressed, the number of water users that could be affected by the threat, the overall operating cost of the water system per user, and if the municipality does not have a drinking water system. These recommendations were reflective of the general sentiment that long-term, sustainable funding was required to ensure the effectiveness and longevity of the SWP program throughout its implementation and ongoing monitoring.

Despite these recommendations from the committees to the Ministry, funding for implementation appeared to proceed on a yearly basis for the implementation of source protection plans. It was clear that municipalities have been very dependent on this capacity for their own budgetary reasons, one member stating that “the sooner municipalities can get funding support from the Ministry, the sooner they can

work out their own funding.” The Lake Erie SPC also expressed frustration that the committee was unable to assist their municipalities to help them understand the bigger picture of long-term costs of the SWP program. As of 2018, the SPCs indicated that while the SWP program initially was funded almost entirely by the provincial government, that source of funding was ultimately being shifted to the municipalities.

An emergent theme that was prevalent in the findings surrounded cross-boundary coordination for implementation funding. Specifically, in the Lake Erie SPC, the issue was raised that some municipalities shared their water supply with outside communities, and that it should not be the sole responsibility of the municipality in which that water system is located to bear the entire brunt of the implementation costs for that system. The committee was adamant that this would require some level of coordination and partnerships between adjacent municipalities and communities, as well as between municipalities and the Ministry, in order to ensure that costs were shared fairly and in a manner that reflected the composition of the users of the water systems in question. However, as of 2013, details regarding the potential for municipal collaboration for cost-sharing of the implementation of the source protection plan policies had not been received by the committee. Moreover, the issue of consistency across municipalities in terms of the new policies that would be developed for municipalities arose, specifically with regards to financial capacity; it was suggested that, although there may be common policies that should be implemented across municipalities to address significant drinking water threats, municipalities have varying capacities in terms of budgets and resources to implement these policies, and that what works for one municipality may be quite different for another.

The issue of disparity in terms of capacity of larger and smaller municipalities was brought up also in the case of implementation. Specifically, the committees raised concerns regarding the ability, or lack thereof, of smaller municipalities to implement the source protection plan policies without financial assistance from the province. It was indicated that some smaller municipalities, which tended to be rural in nature, in the source protection regions were stretched financially and already struggling with their budgets prior to the enactment of the *Clean Water Act*, and would not have the ability to support the implementation phase of the SWP program on their own. The Bayfield SPC conveyed specifically to the Ministry through a letter sent in 2011 that these smaller municipalities would necessarily have to rely on partnerships with other municipalities and with the government to fund plan implementation.

In response to these concerns from the SPCs, the Ministry implemented the Source Protection Municipal Implementation Fund in 2013, which was intended to help build capacity in small, rural municipalities to implement source protection plans and to support local actions to protect drinking water. This was a one-time source of funding of 13.5 million dollars, which provided financial assistance to a total of 189 municipalities across the province that were deemed eligible by the Ministry (Auditor

General of Ontario, 2014). The funding ranged from \$18,000 to as high as \$100,000 per municipality; moreover, an additional \$2.8 million had been set aside by the government as an incentive for municipalities to partner and collaborate with one another in implementing the source protection policies (Auditor General of Ontario, 2014). According to the SPCs, the funds were allocated to municipalities based on individual agreements, and municipalities had the ability to pool and transfer funds between or among other municipalities, subject to certain criteria.

However, SPCs took issue with the fact that this Municipal Implementation Fund was short-term in nature, and that it did not provide financial assistance to all municipalities within a given source protection region who would benefit from such funding. Moreover, the committees were adamant that the \$13.5 million that had been devolved through this fund was not nearly enough to ensure the successful implementation of the source protection plans, and also did not address all of the needs of municipalities in this regard. While the Municipal Implementation Fund was viewed by the committees as constituting additional financial assistance from the province for the purposes of SWP implementation, it was not considered to be sufficient to enable smaller municipalities to implement the source protection program effectively. Upon the completion of that funding program, the SPCs remained insistent that the provincial government must provide funding for implementation on a long-term and sustainable basis to all municipalities with implementation responsibilities. This was viewed as imperative for not only protecting existing sources of drinking water, but also in protecting new water sources that become identified by the SPCs in the future.

5.3.2 Discussion

The hypothesis posited with regards to financial capacity was that, despite the fact that the collaborative SWP process in Ontario was mandated through legislation, the top-down funding mechanism would prove to be problematic for the SPCs at both the organizational and participant levels. This hypothesis was advanced based primarily on the claims in the literature that funding allocation in mandated collaborative situations can be done narrowly and the devolution of authority for certain management issues in collaborative settings can occur without a simultaneous downloading of financial capacity (Dunn, Harris & Bakker, 2014; Margerum, 2011; Jetoo et al., 2015). The findings from the analysis generally support this hypothesis, in the sense that the committees at times experienced difficulty in securing Ministry funding for some SWP planning-related technical work. Moreover, the committees were concerned that municipalities, who were devolved specific implementation responsibilities under the *Clean Water Act*, faced uncertainty in terms of the funding that the Ministry would be providing over the long term for plan implementation. However, the findings also departed from some prevalent aspects of this literature. Specifically, while the literature highlights participant-level funding as being important for

sustaining the collaborative process, the committees did not appear to face issues at this level. Rather, participants on the source protection committees appeared to be adequately compensated for their efforts in the process, and their participation appeared to be well enabled through this capacity. Moreover, at the organizational level, the literature asserts that a lack of long-term funding can inhibit the ability of a collaborative group to move forward and that it may hinder the actual process of collaboration in this regard. However, the findings from this analysis suggest that the financial-capacity related issues experienced at this level were mostly centered on the scientific and technical work of the committees, as well as the implementation of the outputs of collaboration by other entities, rather than funding for the actual process itself. On implementation specifically, the experiences of the SPCs do support the literature because they highlight the need to build capacity at the local level to meet their implementation requirements.

With regards to participant-level financial capacity, there were no issues raised by committee members throughout the SWP planning process about a lack of capacity for members to participate in the process of collaboration. Discussed earlier, the source protection authority was responsible for allocating funding for various activities of the committees, including the compensation of per diem payments and mileage compensation for SPC members. This capacity appeared to be stable and guaranteed throughout the process, and did not appear to preclude members from participating in the activities of the committee. For example, as discussed in the representation section, absenteeism did not appear to be tied to a lack of financial capacity to participate.

In terms of financial capacity at the organizational level, the findings again depart slightly from the literature. While the literature suggests that collaborative groups that are unable to secure adequate funding throughout the course of their mandate can be hindered in their capacity to move forward, this was not necessarily the case among the SPCs studied here. In fact, the committees appeared to be well-resourced to undertake the majority of their committee-related work that was directly related to the process of collaboration, including funding for members and funding for the actual meetings themselves and resourcing these meetings with other SWP staff. However, the committees sometimes had to re-scope or abandon the work they had initially planned to undertake in order to address drinking water threats in their watershed regions due to inadequate Ministry funding. The committees felt that the province was funding to address only the baseline requirements under the *Clean Water Act* for SWP, and that the Ministry was generally unsupportive in instances in which the committees wanted to protect further than these minimum requirements would allow. Moreover, the structure of the provincial funding program, allocated on a yearly basis through what appeared to be a closed-door process, was deemed to be inadequate to support the actual needs of the committees that would enable them to meet their mandate.

These issues raise questions about the effectiveness of top-down funding structures for technical, watershed-based work that take place largely from the ground-up. While the literature recognizes that organizations in mandated collaboration are “pseudo-autonomous,” it is less clear on how much autonomy should be granted to collaborative organizations in these situations to produce the most effective outcomes (McNamara, 2006). The role of the state in mandated collaboration is often viewed as one of facilitation, in the sense that they facilitate collective action to address problems rather than dictating solutions (Minnes, 2015). The legislated nature of the Ontario SWP program meant that the source protection committees were not completely autonomous entities. Rather, while the responsibility for the planning work associated with the drinking water source protection was devolved to the multi-stakeholder SPCs, the capacity required for these committees to undertake this work remained in the centralized authority of the Minister. This authority was demonstrated in instances in which committees would request additional funding for various activities, but proceeded on the basis that it might not be granted by the Minister.

The broader literature on decentralization asserts that the devolution of responsibility from the state to local entities in collaborative water governance regimes often occurs without the simultaneous devolution of financial capacity, which can undermine water governance at the watershed level (Dunn, Harris & Bakker, 2014; Jetoo et al., 2015). While some scholars suggest that mandated collaborative processes typically enjoy a stable flow of financial resources to ensure the operational and technical needs of the group are met (McNamara, 2016), the experiences of the SPCs in this research suggest that the committees did not always receive a stable flow of resources for all of the technical and other planning-related activities that were necessary to undertake for the protection of drinking water sources. The case studies in this research appear to support other claims in the literature that funding allocation in mandated processes can sometimes be done inadequately, thus not fully supporting the full range of activities required for the collaboration to meet their objectives (Margerum, 2011). Thus, although the entire collaborative process did not appear to be undermined by a lack of funding, certain elements of the outputs of this collaboration may have been weakened as a result.

The funding provided by the Ministry also appeared to be insufficient for municipalities, who participated in the SWP process in numerous capacities and were largely responsible for its implementation. The *Clean Water Act* was clear that the designation of responsibility for the implementation of source protection plans, and their associated policy and other tools, fell to the municipalities; however, the legislation did not include the provision of any sort of capacity, financial or otherwise, to assist municipalities in this regard. The meeting minutes revealed that the Ministry did not establish an effective mechanism for the long-term allocation of funding for municipalities to implement the policies and other tools in the source protection plans, which was deemed to be a critical weakness of

the process overall. This reflects claims in the literature that the success and effectiveness of collaborative governance is partially dependent on long-term and sustainable funding (e.g. Leach & Pelkey, 2001; Durley, 2007; Biddle, 2017). Committees expressed frustration that they could not inform the municipalities in their region about the provision of financial assistance, as it was ultimately out of their control.

The analysis also revealed that there was a disparity across municipalities in terms of their existing capacities to participate in the Ontario SWP program. For example, while some municipalities were able to undertake the technical work required to complete the assessment reports and source protection plans, other municipalities did not have the resources to do so on their own without financial assistance. Smaller communities in the watersheds were deemed to have existing budgetary issues, and would not be able to support the implementation of the SWP program without provincial assistance. These findings reflect general notions in the literature that there are capacity gaps between smaller (typically rural) and larger (typically urban) communities in their ability to implement drinking water protection measures, and that smaller communities tend to face issues in participating in collaborative watershed initiatives due to this (Hardy & Koontz, 2010; Cliche & Freeman, 2017; Ibrahim & Patrick, 2017). While the province implemented the Source Protection Municipal Implementation Fund in an apparent attempt to address the capacity needs of smaller municipalities, this one-time fund appeared to fall short of what was actually required by municipalities to meet their newly devolved implementation responsibilities under the *Clean Water Act*. Therefore, while the implementation of this fund suggests there was some adaptability of the top-down funding scheme to local circumstances that arose throughout the process, it appeared to nonetheless miss the mark in addressing the true needs of the communities on the ground.

Together, these findings ultimately call into question the effectiveness of a centralized, top-down approach to providing capacity for a process that occurs largely from the bottom-up, in terms of how well it can support the specific and often-changing capacity needs for watershed-based planning on the ground. Although the province invested substantial financial resources into the SWP program itself, various elements of this funding were misaligned with the real needs of these entities in practice for SWP planning purposes. The funding component of the Ontario SWP program could have benefited from increased flexibility to adapt to the technical and scientific requirements that were necessary to address a fuller range of risks to drinking water contamination. Ministry funding also was inadequate to support the implementation needs of municipalities in particular, as committees struggled to garner the ongoing support of municipalities in the process in light of a lack of guaranteed funding for their involvement. This perhaps indicates that the legislation was drafted with too short-term a vision for source water protection planning in the province, rather than ensuring that the program would be supported in the many

years after its first phase was completed. This calls into question the effectiveness of the legislation for the purposes of source water protection, and whether or not it enabled the better protection of drinking water supplies across the province.

These findings also question the extent to which the source protection plans truly reflect local priorities for source water protection, and the extent to which they reflect the priorities of the convening Ministry. This is also related to the concept of autonomy (expand on this). Some authors also suggest that the convening authority possessing overall authority over the products of collaboration is indicative of inherent power imbalances between this entity and the actual participants of collaboration. For instance, Brisbois et al. (2018) in their analysis of the Thames-Sydenham source protection committee argue that provincial government inaction on certain issues directly impacted decisions that were made on the ground during the collaborative process. Although it is beyond the scope of this research to speculate about the specific power relationships among actors involved in the collaborative SWP processes, government inaction is another angle of financial capacity that could benefit from additional research in the future, particularly in the context of watershed-based planning.

Conclusion

The purpose of this research was to provide insight into the lived experiences of actors involved in collaborative water governance processes, and in particular their experiences with certain factors that are perceived to be imperative for successful collaboration at the watershed level. Specifically, this research set out to answer the question, “How do some of the theorized factors that are claimed to contribute to successful collaboration appear to emerge in practice in collaborative source water protection planning processes across different source protection committees in the Province of Ontario?”. The Ontario SWP program, mandated through the *Clean Water Act, 2006* resulted in the creation of committees that operated on the general principles of collaboration to develop watershed-based source protection plans for each of the source protection areas delineated by the Act. It therefore provided a golden opportunity to empirically explore the complexities of collaborative water governance in order to better understand how these processes work in practice. This research was further guided by the use of a theoretical framework through which representation, public participation, and financial capacity were analyzed within the collaborative source water protection planning processes of three multi-stakeholder source protection committees in the province of Ontario.

Overall, this research contributes to the current scholarship on collaborative water governance in numerous veins. By first analyzing the legislative debates on Bill 43, a dataset not widely used in existing research on water policy and governance, the thesis highlighted the ways in which elected officials appeared to view collaborative water governance and the issues they saw as being potentially problematic for the integrity and usefulness of this process for drinking water protection. This analysis also offered an insight into the political nuances behind such a program. It thus elevates the use of this dataset for providing insightful context that can “set the stage” for subsequent analyses of legislation and policies. Moreover, the second analysis provided a nuanced look into the inner operational workings of multi-stakeholder committees through a careful examination of their proceedings and decision-making. While missing the richness that could be provided through qualitative, semi-structured interviews with participants of these processes, the intricacies and associated inferences that could be drawn from the meeting minutes revealed particular elements of collaborative SWP in practice, as they happened and were experienced in real time.

The findings from this analysis revealed that MPPs were generally supportive of the fundamental notion of collaborative, watershed-based source water protection that was proposed in Bill 43. However, opposition and backbencher MPPs also had specific concerns related to the factors of representation, public participation, and financial capacity. In terms of representation, MPPs wanted a flexible approach to SPC membership composition that would also ensure that the “right” stakeholders would be around the

table for the collaborative SWP planning. They were also concerned about the accountability of these committees to the public, and whether certain interests would be adequately represented in the process. The regulations responded to the first of these concerns, ensuring on paper that representation from multiple sectors on the committees would be guaranteed, but did not provide a system of checks and balances in terms of who from these sectors would be selected to sit on these committees, leaving this decision to the source protection authority rather than establish an open process for this selection. With regards to public participation, MPPs were insistent that public participation and consultation throughout the SWP process should be a mandatory component of the legislation, which was absent in the original bill. Amendments made in the legislation responded to these concerns by mandating public consultation on all SWP-related documents. However, while the legislation prescribed the general requirements for consultations, it did not include specific components of these processes that must be undertaken by the committees, leaving this largely to their interpretation. Finally, financial capacity for SWP was discussed extensively by MPPs in the debates on Bill 43. MPPs were concerned that implementing bodies would be left to bear the brunt of the implementation costs, absent the guarantee of this funding from the Ministry, and were also concerned that the lack of long-term and sustainable funding for the various elements of the program would ultimately weaken its effectiveness for drinking water protection. In the end, the legislation provided some funding for various SWP-related activities through the Ontario Drinking Water Stewardship Fund, but still did not guarantee provincial funding for every element of the program. Overall, the debates that were held in the Legislature regarding representation, public participation, and financial capacity appeared to strengthen the collaborative governance components of the *Clean Water Act*, at least on paper, with the exception of financial capacity, which was not addressed to a large extent in the legislation.

However, the collaborative mandate that was pushed under this legislation and its regulations did not necessarily live up to expectations when the collaborative SWP process was put into practice. This was shown through the second analysis, which was a directed content analysis on the meeting minutes from the Lake Erie Region SPC, the Ausable Bayfield Maitland Valley SPC, and the Trent Conservation Coalition SPC. The content analysis was guided by the theoretical framework established in Chapter 4 as well as the hypotheses that were developed for each of the three factors that were selected. The findings generally revealed that representation, public participation, and financial capacity as prescribed through the legislation were a source of inefficiency, difficulty, and problems for the committees at various points in their respective collaborative SWP planning processes.

In terms of representation, the findings generally supported the initial hypothesis that members from the public interest sector would have the highest rate of absenteeism and turnover compared to members from other sectors, and that this would thus constitute a lower rate of substantive representation

of these interests in the process and outputs of the collaborative SWP program. The public interest sector had the highest rate of member absenteeism among the sectoral interests across all three SPCs, and also had the most turnover relative to members from the municipal and economic sectors in two of the three committees. Moreover, when these members were absent, they were less likely than other members to participate in meetings by proxy. These findings suggest that members from the public interest sector may have faced unique barriers to their full and sustained participation. However, unlike what the literature suggests, these barriers were likely not related to financial capacity as all SPC members were provided with equal compensation for their time and effort on the committee. Thus, other barriers, such as those related to technical or organizational capacity, may have played a larger role in this group's participation.

However, the findings also told a more detailed story than what is suggested in the literature and provided a more nuanced look into the difficulties in translating representation on paper into representation in practice. Although the public interest sector had the highest rate of absenteeism, the other sectors also had absent members throughout the SWP process to a decently large extent. Moreover, SPC members did not seem concerned about absenteeism for reasons tied to representation in and of itself, but rather because low attendance could cause the group to lose quorum and prevent the committee from meeting other regulatory requirements under the Act, such as those related to timeliness. This may have weakened how representative the committees were of the interests across the watersheds that they were seeking to protect through their collaborative processes. SPC member also appeared to be more concerned about the turnover of provincial liaison members than they did their own voting SPC members, which is indicative of the large role that the Ministry continued to play in these otherwise locally-led collaborative processes. This also challenges prevailing presumptions in the literature that substantive representation is inherently important to participants of collaborative governance. The Ontario case study revealed that representation was important because it was a mandated feature of the legislation, and that given the choice to achieve substantive representation over meeting other regulatory requirements, the latter would prevail.

This notion is reinforced by the analysis on proxy use by the Lake Erie SPC. Many members on this committee took full advantage of this opportunity, primarily for the purposes of maintaining quorum and meeting regulatory requirements for the program. Participation by proxy calls into question the true representativeness of meetings, as committee members were not bound to select proxies from within their own sector or even existing members of the SPC. While some members used proxies from within the committee, many municipal members did not, instead selecting non-member municipal representatives to sit as their proxy. The use of outside members by this sector in particular leads us to wonder about the collaborative memory of the committee over time, and how a disruption in representativeness among

members could result in less knowledge being stored and utilized in decision-making, especially as proxy representatives were primarily present for the purpose of voting. This also may have had an impact on the trust-building and social learning among members of the collaborative group. Perhaps fundamentally, the frequent use of proxies among Lake Erie SPC members should be seen through a cautionary lens in terms of representation, as the fact remains that members who do not participate in person at the meetings are still absent from those meetings, regardless of who sits in their place. Although this tool was enforced and thus made mandatory through the legislation, its overuse in practice may run contrary to the goals of substantive representation. Moreover, these issues do reflect what was discussed in the debates on Bill 43, in that getting the “right,” or even consistently the same, people around the table did not appear to be a fundamental goal of the legislation after all.

The findings on public participation also departed from the literature in some respects, particularly as they revealed that the institutionalized nature of the public participation processes in the *Clean Water Act*, combined with some of its other regulatory requirements, appeared to weaken the public participation and public consultation efforts of the committees. As was the case with findings for representation, the necessity of meeting the timelines set out in the regulations appeared to trump the necessity and importance of meaningfully engaging the public in the SWP planning processes on the part of the committees. These requirements appeared to hinder the public consultation activities that the committees could reasonably undertake, even in instances where the committees wished they could do more in this area. Moreover, the processes through which the committees had to contact landowners to inform them of potential threats and to gain their participation in addressing these threats appeared to be convoluted and inefficient for the committees to navigate effectively, often resulting in poor involvement from this part of the community. Any additional efforts to inform or consult with the public had to stem from the committees themselves, as requests to the Minister to do so seemed to fall on deaf ears.

The analysis also revealed somewhat surprisingly that the committees placed emphasis on the public’s perception of the SWP process and its outputs as being of importance in terms of the way the committees were to communicate with members of the public, and how they presented their findings. While not currently a prevalent feature of the collaborative governance literature, the notion of public perception is likely to continue to play a key role in collaborative forums that are mandated through legislation, as these processes are likely to be more transparent and open to the public by design. This also echoed some sentiments in the debate that democracies must have public participation and openness to the public in order to thrive, as the same can be said for collaborative arrangements that operate in a democratic system of governance, particularly if those involved in the collaboration are not necessarily accountable to the public on their own.

Finally, in terms of financial capacity, the findings indicated that the committees in general experienced issues associated with insufficient provincial funding for some of their activities, and that the municipalities within these source protection regions appeared to also experience capacity gaps in terms of their ability to participate in the SWP planning portion, as well as to implement the source protection plans emanating from the process. As was the case in the debates on Bill 43, the issue of compensation for those who would be involved directly in the collaborative SWP process, which is itself a prominent theme in the collaborative water governance literature in terms of financial capacity, was not perceived to be prevalent in the experiences of the members of the SPCs that were studied here. Rather, the issues faced by the committees appeared to be primarily related to adequate funding for the technical aspects of the SWP planning process. Specifically, the SPCs at times had to re-scope their work in light of funding shortfalls from the government, which sometimes appeared to result in less preventative measures for the protection of drinking water sources within their respective regions.

Issues were also experienced by the committees in terms of the financial capacity required to implement the SWP program. The committees largely operated on the assumption that the Ministry would be providing financial assistance for municipalities and other local entities to implement the mandated SWP program, rather than on the guarantee that this funding would be coming down the pipe. As the effectiveness of the plans being developed by the committees was arguably predicated on the long-term implementation of its policies, this finding is particularly troublesome in evaluating the effectiveness of the legislation to produce a better system for drinking water protection. Further, the Ministry was largely unresponsive to committees' requests to provide a different funding structure that reflected the work cycles of the committees as well as the needs of municipalities on the ground. The Small Municipalities Implementation Fund that was established by the government served only short-term needs for the regions' smallest municipalities. While this reflects empirical evidence in the existing literature that smaller, often urban, municipalities face greater capacity issues than do larger communities in implementing watershed-based SWP, the funding mechanism that was implemented to address these needs arguably fell short of the mark, with no promise of additional funding to fill the gap.

These findings also allow the author to draw some fundamental conclusions about the apparent effectiveness of, and perhaps also about the true intentions behind the *Clean Water Act* and the specific mandate for collaborative SWP it prescribed. The *Clean Water Act* appeared to be effective in terms of its ability to convene sets of stakeholders from across large and small watershed regions in a forum for the purpose of watershed-based SWP. Absent this legislation, it is unlikely that these committees would have formed on their own, particularly as they were relatively well-resourced to conduct their daily operations and compensate participants directly for their time and effort. Moreover, the legislation on paper provided provisions for representative collaboration to occur within these committees, in order to produce

watershed plans that reflected the interest of a wide variety of stakeholders who use and depend on the watershed for various elements of their livelihood, and who also have other stakes in drinking water protection more broadly. The legislation also enforced a certain degree of public consultation on these plans, providing an enforceable opportunity for members of the public to impart their watershed knowledge in the identification and verification of threats, as well as in devising the best policy tools to address them.

However, the findings also indicate that the Act may have been less effective for some other elements of the collaborative SWP process. For example, what appeared to be at least partially the source of some of the difficulties faced was the design of some of the institutionalized or mandated nature of the various components of these processes through the *Clean Water Act* and its regulations. The regulatory requirement to meet various deadlines set out in the legislation for the completion of the various SWP documents, which were the fundamental outputs of the collaborative process that would provide the tools for SWP protection efforts across the watershed regions, had implications for the extent of representation that the committees were able to achieve during decision-making periods, as well as the extent and type of public consultation activities the committees were able to pursue, which were also required under the legislation. The discussions held among SPC members in this regard suggest that these requirements were at times in tension with one another and that timeliness often prevailed as the more important one to meet. Moreover, the overall authority of the Ministry over the process, while important for coordination and maybe also accountability purposes, appeared to also prevent committees from fully meeting the objectives of the *Clean Water Act* in protecting sources of municipal drinking water supplies. For example, the Ministry was the exclusive provider of financial capacity for committees to undertake the work that was required to identify and plan to address all threats to drinking water in the region, and at times this funding fell short, causing the committees to re-scope their work and effectively address less threats as a result. The Ministry also did not provide adequate funding for the implementation of the various source protection plans to implementing bodies such as municipalities and landowners, which obviously may undermine the work that went into the planning phase by presenting barriers to implementation. This overriding authority also seemed to undermine the benefits of collaboration to some extent, by providing a sense of rigidity and at times a process-heavy system through which the committees had to navigate to complete the most basic work for SWP planning.

More generally, this thesis contributes to existing scholarship by highlighting the drawbacks associated with mandated collaboration, and that the design of collaborative processes and the mandates that govern them absolutely matters when it comes to implementing these processes in practice. This suggests that greater attention should be paid in future research to the potential implications of particular design features of mandated forms of collaboration for the capacity of collaborative organizations to meet

the objectives of the mandate. The case study SPCs in this study indicated that conflicting regulatory requirements was often a source of inefficiency for the committees, which had apparent implications for both the process of collaboration as well as some of its outputs for SWP. These mandates should be made with greater flexibility to adapt to changing circumstances that occur on the ground throughout the process of collaboration. Moreover, the unbridled and overriding authority of a centralized body over locally-based, collaborative initiatives should not be taken at face value by scholars. The Ontario case demonstrated that, particularly for the provision of financial resources, there should be more of a direct connection between the needs of the collaborative organization itself and the manner in which these funds are allocated. This would also result in a more transparent funding mechanism that could promote greater synergies between the intents of the mandate and the results of the process.

On the topic of Ministerial authority, the findings also lead the author to question the true autonomy and authority of the source protection committees in undertaking their respective SWP planning processes. In particular, because the final authority for seemingly all matters, from the timelines to the financial capacity for technical work and implementation, to the actual policies that would be enforced upon landowners and industries and other citizens of the watershed regions, rested with the Ministry and not with the committees, it begs the question how much authority was actually delegated by the government in this decentralized management scheme. It also raises a red flag in terms of the true intention of those responsible for drafting the legislation in the first place: while the debates revealed that the Ministry appeared to be focused on ensuring the bottom-up management of drinking water sources through collaboration, the experiences of committees in dealing with that same Ministry to meet their needs on the ground suggest that, though authority was formally delegated to these committees, the government was hesitant to hand over full control to these groups. These findings thus perhaps highlight the retained prominence of institutions of authority, even in a decentralized context, and questions whether subsidiarity to local entities, and indeed to citizen communities at large, is something that governments are willing to fully support when it comes to the governance and management of common-pool resources, and water in particular.

Moreover, the wide generalizations made in the literature is that decentralized and collaborative water governance is more democratic, more responsive to the local conditions and needs of a given watershed, more incorporative of local interests, and overall more beneficial to the watershed itself are fundamentally challenged by the findings of this research. For instance, while the Ontario program was espoused by the very government that developed it as incorporating the principles of collaboration and as embodying a truly representative and bottom-up approach, in practice it appeared as though the committees were not autonomous entities that were isolated from broader political objectives and influence. In this respect, the extent to which one can claim that collaborative governance is a “better”

approach to governing common-pool resources is perhaps diminished, insofar as this particular case study revealed that the overriding authority of the government prevailed to dictate the policies that would restrict and monitor the activities of various industries and economic interests across the province. Moreover, researchers in this field would be well-suited to evaluate how far removed collaborative governance processes are from top-down forms of governance when the processes themselves are mandated from the top-down. While the technical, science-based work to protect sources of drinking water from contamination were carried out from the bottom-up, arguably incorporating local knowledge and expertise at least to some extent, the ultimate authority to approve this work and subsequent measures to limit potentially threatening activities stemmed from an institution far removed from the watershed locales.

Finally, as drinking source water protection continues to be advocated as one of the fundamental components of the multi-barrier approach to safe drinking water, the findings of this research provide critical insights that might be useful in the application of SWP in other contexts outside of the province of Ontario. The findings revealed that, although collaborative water governance is widely viewed as the preferred mode of governance for watershed management, and for achieving the goals associated with source water protection, there are nonetheless some components of mandated processes of collaboration in particular that appear to make the processes of collaboration more difficult to undertake. Although these findings may in some ways be particular to the Ontario context, it more generally speaks to the different perceptions and experiences among actors involved in actual processes of collaboration with regards to achieving meaningful substantive representation throughout the process, engaging in effective public participation and consultation activities, and the importance of having sufficient financial capacity throughout the duration of the collaborative process. These findings may therefore be applicable more generally to those designing collaborative processes, particularly those that are mandatory in nature, including legislators. The program in Ontario has set the stage for a comprehensive SWP regime at the watershed level, and could thus be informative to those designing processes in other provinces of Canada or states of other countries.

These findings could be particularly important for the implementation of a SWP regime on Indigenous reserves across the country, who continue to suffer from a lack of access to safe drinking water. The issues experienced by SPCs with regards to the mandated nature of the collaborative processes of which they were apart might be exacerbated in the reserve setting, where power imbalances are arguably more pronounced and components such as representation and the incorporation of local knowledge, as well as the provision of financial capacity, become even more paramount to Indigenous empowerment over their own supplies of drinking water. The collaborative water governance experience that has unfolded across watershed regions in Ontario serves as an important stepping block to a better

understanding and anticipating the issues and inefficiencies that might result when such a regime is transplanted to different contexts with far direr and more pressing realities.

References

- Agranoff, R. & McGuire, M. (2003). *Collaborative Public Management: New Strategies for Local Governments*. Washington: Georgetown University Press.
- Andersson, K.P. & Ostrom, E. (2008). Analyzing decentralized regimes from a polycentric perspective. *Policy Sciences*, 41, no. 1, 71-93.
- Ansell, C. & Gash, A. (2007). Collaborative Governance in Theory and Practice. *Journal of Public Administration Research and Theory*, 18, no. 4, 543-571.
- Armat, M.R., Assarroudi, A., Rad, M., Sharifi, H. & Heydari, A. (2018). Inductive and Deductive: Ambiguous Labels in Qualitative Content Analysis. *The Qualitative Report*, 23, no. 1.
- Arnstein, S.R. (1969). A Ladder of Citizen Participation. *Journal of the American Institute of Planners*, 35, no. 4, 216-224.
- Baber, W.F. & Bartlett, R.V. (2007). Problematic Participants in Deliberative Democracy: Experts, Social Movements, and Environmental Justice. *International Journal of Public Administration*, 30, 5-22.
- Baird, J., Velaniskis, J., Plummer, R. & Fitzgibbon, J. (2014). Political Legitimacy and Collaborative Water Governance: An Exploratory Case Study. *International Journal of Water Governance*, 2, 61-84.
- Bakker, K. (2007). *Eau Canada: The Future of Canada's Water*. Vancouver: UBC Press, University of British Columbia.
- Bakker, K. & Nowlan, L. (2010). "Practising Shared Water Governance in Canada: A Primer." Vancouver: Program on Water Governance, University of British Columbia. Retrieved from http://watergovernance.sites.olt.ubc.ca/files/2010/08/PractisingSharedWaterGovernancePrimer_final1.pdf
- Bakker, K. & Cook, C. (2011). Water Governance in Canada: Innovation and Fragmentation. *Water Resources Development*, 27, no. 2, 275-289.
- Baldin, E., Deadman, P. & Eagles, P.F.J. (2003). *Visitor Statistics for Conservation Authorities in Ontario: Current Status and Methods*. Ontario, Canada: University of Waterloo, Waterloo.
- Baldwin, E., McCord, P., Dell'Angelo, J. & Evans, T. (2018). Collective action in a polycentric water governance system. *Wiley Environmental Policy and Governance*, 28, 212-222, doi: 10.1002/eet.1810
- Benidickson, J. (2009). *Environmental Law, Third Edition*. Toronto, ON: Irwin Law.
- Benidickson, J. (2018). The Evolution of Canadian Water Law and Policy: Securing Safe and Sustainable Abundance. *McGill Journal of Sustainable Development*, 13, no. 1, 59-105.
- Biddle, J. (2017). Improving the Effectiveness of Collaborative Governance Regimes: Lessons from Watershed Partnerships. *Journal of Water Resources Planning and Management*, 143, no. 9.

- Bidwell, R.D. & Ryan, C.M. (2006). Collaborative Partnership Design: The Implications of Organizational Affiliation for Watershed Partnerships. *Society & Natural Resources*, 19, no. 9, 827-843.
- Beierle, C. & Cayford, J. (2002). *Democracy in Practice: Public Participation in Environmental Decisions*. Washington, DC: Resources for the Future.
- Bingham, L.B., O’Leary, R. & Carlson, C. (2015). Frameshifting: Lateral Thinking for Collaborative Public Management. In “Big Ideas in Collaborative Public Management,” (e.d. Bingham, L.B. & O’Leary), New York, NY: Routledge.
- Blidook, K. (2012). *Constituency Influence in Parliament: Countering the Centre*. Vancouver: UBC Press.
- Bohnet, I.C. (2015). Lessons Learned from Public Participation in Water Quality Improvement Planning: A Study from Australia. *Society and Natural Resources*, 28, 180-196.
- Borrini-Feyerabend, G., Farvar, M.T., Renard, Y., Michel P. Pimbert, M.P. & Kothari, A. (2013). *Sharing power: A global guide to collaborative management of natural resources*. Routledge.
- Bressers, J.T.A., Richardson, N.N. & O’Toole, L.J. (Eds.) (1995). *Networks for Water Policy: A Comparative Perspective*. Oregon: Frank Cass.
- Brians, C.L., Willnat, L., Manheim, J.B. & Rich, R.C. (2011). *Empirical Political Analysis: Quantitative and Qualitative Research Methods*. Pearson Education, Inc.
- Brisbois, M.C. & de Loe, R.C. (2016). Power in Collaborative Approaches to Governance for Water: A Systematic Review. *Society & Natural Resources*, 29, no. 7, 775-790.
- Brisbois, M.C., Morris, M. & de Loe, R. (2018). Augmenting the IAD framework to reveal power in collaborative governance - An illustrative application to resource industry dominated processes. *World Development*. <https://doi.org/10.1016/j.worlddev.2018.02.017>
- Brosseau, E., Dedeurwaerdere, T., Jouvét, P. & Willinger, M. (2012). *Global Environmental Commons: Analytical and Political Challenges in Building Governance Mechanisms*. Oxford University Press.
- Brower, A.L. (2016). Is collaboration good for the environment? Or, what’s wrong with the Land and Water Forum? *New Zealand Journal of Ecology*, 40, no. 3, 390-397.
- Brown, J. (2008). Evaluating Participatory Initiatives in South Africa: Not Just Processes But Outcomes Too. *SAGE Open*, 4, no. 2, 1-16.
- Bryson, J.M., Crosby, B.C. & Stone, M.M. (2006). The Design and Implementation of Cross-Sector Collaborations: Propositions from the Literature. *Public Administration Review*, “Articles on Collaborative Public Management” (Special Issue).
- Carr, G., Blöschl, G., & Loucks, D.P. (2012). Evaluating participation in water resource management: A review. *Water Resources Research*, 48, doi:10.1029/2011WR011662
- Carter, N., Kreutzweiser, R.D. & de Loe, R.C. (2005). Closing the circle: Linking Land Use Planning and Water Management at the Local Level. *Land Use Policy*, 22, 115-127.

- Choi, T. & Robertson, P.J. (2014). Caucuses in Collaborative Governance: Modeling the Effects of Structure, Power, and Problem Complexity. *International Public Management Journal*, 17, 224-254, doi:10.1080/10967494.2014.905398
- Clancy, P. (2014). *Freshwater Politics in Canada*. Toronto, ON: University of Toronto Press, Higher Education Division.
- Clement, F. (2010). Analysing decentralized natural resource governance: proposition for a “politicized” institutional analysis and development framework. *Policy Sciences*, 43, 129-156.
- Cliche, L. & Freeman, L. (2017). Applying Integrated Watershed Management in Nova Scotia: A Community-Based Perspective from the Clean Annapolis River Project. *International Journal of Water Resources Development*, 33, no. 3, 441-457.
- Cook, C. (2014). Governing jurisdictional fragmentation: Tracing patterns of water governance in Ontario, Canada. *Geoforum*, 56, 192-200, doi:0.1016/j.geoforum.2014.07.012
- Cook, C. (2015a). Implementing drinking water security: the limits of source protection. *Water*, 3, 5-12, doi: 10.1002/wat2.1117
- Copeland, C.W. (2006). Negotiated Rulemaking. U.S. Congressional Documents.
- Cotruvo, J. (2018). *Drinking Water Quality and Contaminants Guidebook*. Boca Raton, FL: CRC Press.
- Culver, K. & Howe, P. (2004). Calling all citizens: The challenges of public consultation. *Canadian Public Administration*, 47, no. 1, 52-75.
- Dandy, N., Fiorini, S. & Davies, A.L. (2014). Agenda-setting and power in collaborative natural resource management. *Environmental Conservation*, 41, no. 4, 311-320, doi:10.1017/S0376892913000441
- Davies, J-M & Mazmuder, A. (2003). Health and environmental policy issues in Canada: the role of watershed management in sustaining clean drinking water quality at surface sources. *Journal of Environmental Management*, 68, 273-286.
- Davison, A., Howard, G., Stevens, M., Callan, P., Fewtrell, L., Deere, D. & Bartram, J. (2005). *Water Safety Plans: Managing drinking-water quality from catchment to consumer*. Retrieved from https://www.who.int/water_sanitation_health/dwq/wsp170805.pdf
- de Loe, R. C., Kreutzwiser, R.D. & Neufeld, D. (2005). Local Groundwater Source Protection in Ontario and the Provincial Water Protection Fund. *Canadian Water Resources Journal*, 30, no. 2, 129-144.
- de Loe, R. & Murray, D. (2012). *Governance for Source Water Protection in Canada: Synthesis Report*. Waterloo: Water Policy and Governance Group.
- de Loe, R.C., Murray, D., Michaels, S. & Plummer, R. (2016). Policy Transfer Among Regional-Level Organizations: Insights from Source Water Protection in Ontario. *Environmental Management*, 58, no. 1.

- Drew, J. & Grant, B. (2011). Subsidiarity: More Than a Principle of Decentralization – a View from Local Government. *Publius: The Journal of Federalism*, 47, no. 4, 522-545.
- Dunn, G., Bakker, K. & Harris, L. (2014). Drinking Water Quality Guidelines across Canadian Provinces and Territories: Jurisdictional Variation in the Context of Decentralized Water Governance. *International Journal of Environmental Research and Public Health*, 11, 4634-4651, doi:10.3390/ijerph110504634
- Dunn, G., Harris, L. & Bakker, K. (2014). Microbial risk governance: challenges and opportunities in fresh water management in Canada. *Canadian Water Resources Journal*, 40, no. 3, 237-249.
- Durley, J.L. (2007). Linking Integrated Community Sustainability Planning and Watershed Planning in Ontario, Canada. *Environments Journal*, 35, no. 1.
- Dutterer, A.D. & Margerum, R.D. (2015). The Limitations of Policy-Level Collaboration: A Meta-Analysis of CALFED. *Society and Natural Resources*, 28, 21-37.
- Dyck, T., Plummer, R. & Armitage, D. (2015). Examining First Nations' approach to protection water resources using a multi-barrier approach to safe drinking water in Southern Ontario, Canada. *Canadian Water Resources Journal*, 40, no. 2, 204-223, doi:1080/07011784.2015.1033759
- Ecbkurg, P.B., Bik, E.M., Bernstein, C.N., Purdom, E., Dethlefsen, L., Sargent, M., Gill, S.R., Nelson, K.E. & Relman, D.A. (2005). Diversity of the Human Intestinal Microbial Flora. *Science*, 308, no. 10, 1635-1638.
- Edwards, P.J., Williard, K.W.J. & Schoonover, J.E. (2015). Fundamentals of Watershed Hydrology. *Journal of Contemporary Water Research & Education*, no. 154, 3-20.
- Emerson, K., Nabatchi, T. & Balogh, S. (2012). An Integrative Framework for Collaborative Governance. *Journal of Public Administration Research and Theory*, 22, 1-29.
- Emerson, K. & Nabatchi, T. (2015). Collaborative Governance Regimes. Washington: Georgetown University Press.
- Fegan, N. & Gobius, K.S. (2012). Pathogenic *Escherichia coli* and One Health Implications. In "One Health: The Human-Animal-Environment Interfaces in Emerging Infectious Diseases" (e.d. Mackenzie, J., Jeggo, M., Daszak, P. & Richt, J.), pg. 49-62. Springer, Berlin, Heidelberg.
- Ferreira, C., de Loe, R.C. & Kreutzwiser, R.D. (2008). Imagined communities, contested watersheds: Challenges to integrated water resources management in agricultural areas. *Journal of Rural Studies*, 24, no. 3, pp 304-321.
- Fish, R.D., Ioris, A.A.R. & Watson, N.M. (2010). Integrating water and agricultural management: Collaborative governance for a wicked policy problem. *Science of the Total Environment*, 408, 5623-5630, doi:10.1016/j.scitotenv.2009.10.010
- Floress, K., Mangun, J.C., Davenport, M.A. & Williard, K.W.J. (2009). Constraints to Watershed Planning: Group Structure and Process. *Journal of American Water Resources Association*, 45, no. 9, 1352-1360.

- Fraser Institute. (2018). "Evaluating the State of Fresh Water in Canada." Retrieved from <https://www.fraserinstitute.org/studies/evaluating-the-state-of-fresh-water-in-canad>
- Freeman, J. (1997). Collaborative Governance in the Administrative State. *UCLA Law Review*, 45, no. 1.
- Gallego-Ayala, J. (2013). Trends in integrated water resources management research: a literature review. *Water Policy*, 15, 628-647, doi:10.2166/wp.2013.14
- Gerlak, A.K. & Heikkila, T. (2011). Building a Theory of Learning in Collaboratives: Evidence from the Everglades Restoration Program. *Journal of Public Administration and Research and Theory*, 21, 619-644.
- Gerlak, A.K., Heikkila, T. & Lubell, M. (2013). The promise and performance of collaborative governance. In "The Oxford Handbook of U.S. Environmental Policy" (e.d. Kamieniecki, S. & Kraft, M.,E). Oxford: Oxford University Press.
- Getha-Taylor, H., Grayer, M.J., Kempf, R.J. & O'Leary, R. (2019). Collaborating in the Absence of Trust? What Collaborative Governance Theory and Practice Can Learn From the Literatures of Conflict Resolution, Psychology, and Law. *American Review of Public Administration*, 49, no. 1, 51-64.
- Gibbons, V. (2001). *Managing the Environment: A Review of Best Practices (Executive Summary)*. Retrieved from <http://www.ontla.on.ca/library/repository/mon/1000/10292716.pdf>
- Grant, J.K. (2008). "Canada's Water-Export Debate" in *Canadian Water Politics: Conflicts and Institutions* (e.d. Heinmiller, Johns & Sproule-Jones).
- Grassini, L. (2017). Participatory water governance between theories and practices: learning from a community-based initiative in India. *International Journal of Water Resources Development*, 1-26.
- Grey Bruce Public Health Unit. (2018). "Walkerton Outbreak – May 2000." Retrieved from <https://www.publichealthgreybruce.on.ca/About-Us/Publications/Walkerton-Outbreak>
- Gruber, J.S. (2010). Key principles of community-based natural resource management: A synthesis and interpretation of identified effective approaches for managing the commons. *Environmental Management*, 45, 52-66, doi: 10.1007/s00267-008-9235-y
- Hanrahan, M. (2017). Water (in)security in Canada: National Identity and the Exclusion of Indigenous Peoples. *British Journal of Canadian Studies*, 30, no. 1, 69-89.
- Hardin, G. (1968). The Tragedy of the Commons. *Science*, 162, no. 3859, 1243-1248.
- Hardy, K. & Koontz, T. (2009). Rules for Collaboration: Institutional Analysis of Group Membership and Levels of Action in Watershed Partnerships. *The Policy Studies Journal*, 37, doi:10.1111/j.1541-0072.2009.00320.x
- Hardy, S.D. & Koontz, T. (2010). Collaborative watershed partnerships in urban and rural areas: Different pathways to success? *Landscape and Urban Planning*, 95, no. 3, 79-90.

- Harmel, R.D., Hathaway, J.M., Wolfe, J.E., Karthikeyan, R., Francesconi, W. & McCarthy, D.T. (2016). Uncertainty in monitoring E. coli concentrations in streams and stormwater runoff. *Journal of Hydrology*, 534, 524-533.
- Harrington, C. (2017). The political ontology of collaborative water governance. *Water International*, 42, no. 3, 254-270, doi:10.1080/02508060.2017.1309507
- Head, B.W. (2018). Forty Years of Wicked Problems Literature: Forging Closer Links to Policy Studies. *Policy and Society*, 7, 1-18.
- Hill, Margot. (2013). A Starting Point: Understanding Governance, Good Governance and Water Governance. *Climate Change and Water Governance*, 54.
- Hill, C., Furlong, K., Bakker, K. & Cohen, A. (2008). Harmonization Versus Subsidiarity in Water Governance: A Review of Water Governance and Legislation in the Canadian Provinces and Territories. *Canadian Water Resources Journal*, 33, no. 4, 315-322.
- Hipel, K.W., Zhao, N.Z. & Kilgour, D. M. (2003). Risk Analysis of the Walkerton Drinking Water Crisis. *Canadian Water Resources Journal*, 28, no. 3.
- Holum, M.L. (2016). Governance of a public sector joint venture: The control challenges of dominated owners. *Local Government Studies*, 42, no. 6.
- Hrudey, S.E. & Hrudey, E. J. (2002). Walkerton and North Battleford: Key Lessons for Public Health Professionals. *Canadian Journal of Public Health*, 93, no. 5, 332-333.
- Hrudey, S.E. (2011). *Safe Drinking Water for Canada: Turning Hindsight into Foresight*. Toronto: C.D. Howe Institute.
- Hsieh, H. & Shannon, S.E. (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research*, 15, no. 9, 1277-1288.
- Hui, I., Ulibarri, N. & Cain, B. (2018). Patterns of Participation and Representation in a Regional Water Collaboration. *Policy Studies Journal*.
- Huxham, C. & Vangen, S. (2005). *Managing to Collaborate: The Theory and Practice of Collaborative Advantage*. London, UK and New York, NY: Routledge Taylor & Francis Group.
- Idrissou, L., van Paassen, A., Aarts, N., Vodouhe, S. & Leeuwis, C. (2012). Trust and Hidden Conflict in Participatory Natural Resources Management: The Case of the Pendjari National Park in Benin. *Forest Policy and Economics*.
- Ibrahim, A.A. & Patrick, R.J. (2017). Source Water Protection Planning and Management in Metropolitan Canada: A Preliminary Assessment. *Water*, 9, no. 497.
- Imperial, M.T. & Kauneckis, D. (2003). Moving from Conflict to Collaboration: Watershed Governance in Lake Tahoe. *Natural Resources Journal*, 43, no. 4, 1009-1055.
- Jetoo, S., Thorn, A., Friedman, K., Gosman, S. & Krantzberg, G. (2015). Governance and geopolitics as drivers of change in the Great Lakes-St. Lawrence basin. *Journal of Great Lakes Research*, 41, 108-118.

- Johns, C. (2008). Non-point Source Pollution Institutions in Ontario Before and After Walkerton. In "Canadian Water Politics: Conflicts and Institutions." (e.d. Sproule-Jones, M., Johns, C., & Heinmiller, T.B.) Montreal, QC: McGill-Queen's University Press.
- Johns, C. & Rasmussen, K. (2008). Institutions, Instruments, and Property Rights for Water Resources Management in Canada. In "Canadian Water Politics: Conflicts and Institutions" (e.d. Sproule-Jones, M., Johns, C., & Heinmiller, T.B.) Montreal, QC: McGill-Queen's University Press.
- Johns, C., Sproule-Jones, M. & Heinmiller, B.T. (2008). Water as a Multiple-Use Resource and Source of Political Conflict. In "Canadian Water Politics: Conflicts and Institutions" (e.d. Sproule-Jones, M., Johns, C., & Heinmiller, T.B.) Montreal, QC: McGill-Queen's University Press.
- Jollymore, A., McFarlane, K. & Harris, L.M. (2018). Whose input counts? Evaluating the process and outcomes of public consultation through the BC Water Act Modernization. *Critical Policy Studies*, 12, no. 4, 381-405.
- Jonsson, A. (2005). Public Participation in Water Resources Management: Stakeholder Voices on Degree, Scale, Potential, and Methods in Future Water Management. *Ambio*, 34, no. 7, 495-500.
- Kadirbeyoglu, Z. & Özertan, G. (2015). Power in the Governance of Common-Pool Resources: A comparative analysis of irrigation management decentralization in Turkey. *Environmental Policy and Governance*, 25, 157-171, doi:10.1002/eet.1673
- Kallis, G., Kiparsky, M. & Norgaard, R. (2009). Collaborative governance and adaptive management: Lessons from California's CALFED Water Program.
- Kaplowitz, M.D. & Witter, S.G. (2008). Agricultural and residential stakeholder input for watershed management in a mid-Michigan watershed. *Landscape and Urban Planning*, 84, 20-27.
- Kenney, D.S. (2000). Arguing About Consensus: Examining the Case Against Watershed Initiatives and Other Collaborative Groups Active in Natural Resources Management. *Natural Res. Law Ctr., Univ. of Colo. Sch. of Law*.
- Kim, J. & Siddiki, S. (2018). Linking Diversity of Collaborative Policymaking Venues with Procedural Justice Perceptions: A Study of U.S. Marine Aquaculture Partnerships. *The American Review of Public Administration*, 48, no. 2, 159-174.
- Konisky, D.M. & Beierle, T.C. (2001). Innovations in Public Participation and Environmental Decision-Making: Examples from the Great Lakes Region. *Society and Natural Resources*, 14, 815-826.
- Koontz, Tomas M. & Thomas, Craig W. (2006). What Do We Know and Need to Know About the Environmental Outcomes of Collaborative Management? *Public Administration Review*, 66, 111-121. <https://doi.org/10.1111/j.1540-6210.2006.00671.x>
- Koontz, T.M. (2014). Social Learning in Collaborative Watershed Planning: The Importance of Process Control and Efficacy. *Journal of Environmental Planning and Management*, 57, no. 10, 1572-1593.
- Koontz, T.M. & Newig, J. (2014). From Planning to Implementation: Top-Down and Bottom-Up Approaches for Collaborative Watershed Management. *The Policy Studies Journal*, 42, no. 3.

- Koski, C., Siddiki, S., Sadiq, A., & Carboni, J. (2018). Representation in Collaborative Governance: A Case Study of a Food Policy Council. *American Review of Public Administration*, 48, no. 4, 359-373.
- Kulyk, O., Marky, K., Neumann, S. & Volkamer, M. (2016). Introducing Proxy Voting to Helios. *11th International Conference on Availability, Reliability and Security*.
- Lach, D., Rayner, S. & Ingram, H. (2005). Taming the Waters: Strategies to Domesticate the Wicked Problems of Water Resource Management. *International Journal of Water*, 3, no. 1, 1-17.
- Ladner, K.L. (2009). Colonialism Isn't the Only Obstacle: Indigenous Peoples & Multilevel Governance in Canada. In "Federalism, Feminism and Multilevel Governance" (e.d. Haussman, M. Sawyer, M. & Vickers, J.). Ashgate Press.
- Leach, W.D. & Pelkey, N.W. (2001). Making Watershed Partnerships Work: A Review of the Empirical Literature. *Journal of Water Resources Planning and Management*, 127, no. 6, doi: 10.1061/(ASCE)0733-9496(2001)127:6(378)
- Leach, W. (2006). Collaborative Public Management and Democracy: Evidence from Western Watershed Partnerships. *Public Administration Review, Special Issue*, 100-110.
- Leahy, J.E., Anderson, D.H. (2008). Trust factors in community-water resource management agency relationships. *Landscape Urban Plan*, 87, no. 2, 100–107
- Levi, M. (1981). The predatory theory of rule. *Politics and Society* 10, no. 4, 431–466.
- Lisnyj, K.T. & Dickson-Anderson, S.E. (2018). Community resilience in Walkerton, Canada: Sixteen years post-outbreak. *International Journal of Disaster Risk Reduction*, 31, 196-202.
- Lubell, M. (2004). Collaborative Environmental Institutions: All Talk and No Action? *Journal of Policy Analysis and Management*, 23, no. 3, 549-573.
- Lubell, M., Leach, W.D. & Sabatier, P.A. (2014). Collaborative Watershed Partnerships in the Epoch of Sustainability. In *Toward Sustainable Communities: Transition and Transformations in Environmental Policy* (ed. Daniel, M. A. & Kraft, M.E.). MIT Press.
- MacDonald, A., Clarke, A. & Huang, L. (2018). Multi-Stakeholder Partnerships for Sustainability: Designing Decision-Making Processes for Partnership Capacity. *Journal of Business Ethics*, 1-18.
- MacKay, W. (2005). Canadian Federalism and the Environment: The Literature. In *Georgetown International Environmental Law Review, Volume 17, Issue 1, 2004-2005*.
- Mann, S. & Gennaio, M-P. (2010). The central role of centralisation in environmental policy initialisation. *Journal of Environmental Planning and Management*, 53, no. 3, 283-295, doi:10.1080/09640561003612858
- Margerum, R.D. (2007). Overcoming Locally Based Collaboration Constraints. *Society & Natural Resources*, 20, 135-152, doi:10.1080/08941920601052404

- Margerum, R.D. (2011). *Beyond Consensus: Improving Collaborative Planning and Management*. Massachusetts: MIT Press.
- Margerum, R.D. & Born, S.M. (1995). Integrated Environmental Management: Moving from Theory to Practice. *Journal of Environmental Policy and Management*, 38, no. 3, 371-391
- Margerum, R.D. & Robinson, C.J. (2015). Collaborative partnerships and the challenges for sustainable water management. *Current Opinion on Environmental Sustainability*, 12, 53-58.
- May, P.J. (1995). Can Cooperation be Mandated? Implementing Intergovernmental Environmental Management in New South Wales and New Zealand. *The Journal of Federalism*, 25, no. 1.
- McGuire, M. (2006). Collaborative Public Management: Assessing What We Know and How We Know It. *Public Administration Review*, "Articles on Collaborative Public Management" (Special Issue).
- McNamara, M.W. (2016). Unraveling the Characteristics of Mandated Collaboration. In "Advancing Collaboration Theory: Models, Typologies, and Evidence." (e.d. Miller-Stevens, K. & Morris, J.C.) New York, NY: Routledge.
- Merriam, S.B. (2015). Qualitative Research: Designing, Implementing, and Publishing a Study. In "Handbook of Research on Scholarly Publishing and Research Methods" (ed. Victor Wang). Hershey, PA: Information Science Reference.
- Ministry of Municipal Affairs and Housing. (2018). "2. Official Plans." Retrieved from <http://www.mah.gov.on.ca/Page1759.aspx>
- Minnes, S. (2015). "Potentials for Public Engagement in Source Water Protection in Newfoundland and Labrador: A Literature Review." The Harris Centre, Memorial University. Retrieved from <https://www.mun.ca/harriscentre/reports/arf/2014/14-15-SRF-Final-Minnes.pdf>
- Minnes, S. (2017). Ontario's Clean Water Act and Capacity Building: Implications for Serviced Rural Municipalities. *Water*, 9, no. 538, 1-24.
- Molle, F. (2008). Nirvana concepts, narratives and policy models: Insights from the water sector. *Water Alternatives*, 1, 131-156.
- Moore, E.A. & Koontz, T.M. (2003). A typology of collaborative watershed groups: Citizen-based, agency-based, and mixed partnerships. *Society and Natural Resources*, 16, no. 5, 451-460.
- Moore, S.A., Severn, R.C. & Millar, R. (2006). A Conceptual Model of Community Capacity for Biodiversity Conservation Outcomes. *Geographical Research*, 44, no. 4, 361-371.
- Morris, J.C., Gibson, W.A., Leavitt, W.M., & Jones, S.C. (2014). Collaborative Federalism and the Emerging Role of Local Nonprofits in Water Quality Implementation. *The Journal of Federalism*, 44, 499-518, doi:10.1093/publius/pju019
- Mountjoy, N.J., Seekamp, E., Davenport, M.A. & Whiles, M.R. (2012). Identifying capacity indicators for community-based natural resource management initiatives: focus group results from conservation practitioners across Illinois. *Journal of Environmental Planning and Management*, 57, no. 3.

- Newig, J., Challies, E., Jager, N.W., Kochskaemper, E. & Adzersen, A. (2018). The Environmental Performance of Participatory Collaborative Governance: A Framework of Causal Mechanisms. *Policy Studies Journal*, 46, no. 2.
- Newman, J., Barnes, M., Sullivan, H. & Knops, A. (2004). Public Participation and Collaborative Governance. *Journal of Science and Policy*, 33, no. 2, 203-223.
- Norman, E.S., Bakker, K. & Dunn, Gemma. (2011). Recent Developments in Canadian Water Policy: An Emerging Security Paradigm. *Canadian Water Resources Journal*, 36, no. 1, 53-66.
- Oates, W.E. (1999). An Essay on Fiscal Federalism. *Journal of Economic Literature*, 37, no. 3, 1120-1149
- Olfert, R. (2016). Regional Inequality and Decentralized Governance: Canada's Provinces. *The Review of Regional Studies*, 46, 201-222.
- Olivier, P. (2016). Paradise lost? The difficulties in defining and monitoring Integrated Water Resources Management indicators. *Current Opinion in Environmental Sustainability*, 21, 58-64.
- Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press. Retrieved from https://wtf.tw/ref/ostrom_1990.pdf
- Ostrom, E. (2005). *Understanding Institutional Diversity*. Princeton, NJ: Princeton University Press.
- Patrick, R.J. (2011). Uneven access to safe drinking water for First Nations in Canada: Connecting health and place through source water protection. *Health and Place*, 17, no. 1, 386-389.
- Patterson, J.J., Smith, C., & Bellamy, J. (2013). Understanding enabling capacities for managing the “wicked problem” of nonpoint source water pollution in catchments: A conceptual framework. *Journal of Environmental Management*, 128, 441-452, doi:10.1016/j.jenvman.2013.05.033
- Patterson, J.J., Bellamy, J. & Smith, C. (2014). Tackling the “How” Question: Enabling and Enacting Practical Action for Managing the Wicked Problem of Nonpoint Source Pollution in Catchments. In “The Global Water System in the Anthropocene” (ed. Bhaduri, A., Bogardi, J., Leentvaar, J., & Marx, S.) Switzerland: Springer International.
- Plummer, R., Velaniskis, J., Grosbois, D., Kreutzwiser, R.D. & de Loe, R. (2010). The development of new environmental policies and processes in response to a crisis: the case of the multiple barrier approach for safe drinking water. *Environmental Science & Policy*, 13, 535-548.
- Prudham, S. (2004). Poisoning the well: neoliberalism and the contamination of municipal water in Walkerton, Ontario. *Geoforum*, 403. <http://geography.utoronto.ca/wp-content/uploads/2013/10/Poisoningthewellproofs.pdf>
- Raik, D.B., Wilson, A.L., & Decker, D.J. (2008). Power in Natural Resources Management: An Application of Theory. *Society & Natural Resources*, 21, 729-739, doi:10.1080/08941920801905195
- Rawlyk, F.X. & Patrick, R.J. (2013). Capacity needs for source water protection plan implementation: Lessons from the South Saskatchewan River. *Canadian Journal of Urban Research*, 22, 20-45.

- Rittel, H. & Webber, M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, 4, no. 2, 155-169.
- Robins, L. (2007). Nation-wide decentralized governance arrangements and capacities for integrated watershed management: Issues and insights from Canada. *Environments Journal*, 35, no. 2.
- Roth, A. & de Loe, R.C. (2017). Incorporating outcomes from collaborative governance into government decision-making: A case study from low water response planning in Ontario, Canada. *Ecological Economics*, 132, 169-178.
- Sabatier, P.A., Leach, W. D., Lubell, M. & Pelkey, N.W. (2005). Theoretical Frameworks Explaining Partnership Success. In “Swimming Upstream: Collaborative Approaches to Watershed Management” (ed. Sabatier, Focht, Lubell, Trachtenberg, Vedlitz & Maltock). Cambridge, MA: The MIT Press.
- Salamon, L.M. (2001). The New Governance and the Tools of Public Action: An Introduction. *Fordham Urban Law Journal*, 28, no. 4.
- Samuelson, C.D., Velditz, A., Whitten, G.D., Matlock, M., Alston, L.T., Peterson, T.R., & Gilbertz, S.J. (2005). Citizen Participation and Representation in Collaborative Engagement Processes. In “Swimming Upstream: Collaborative Approaches to Watershed Management” (ed. Sabatier, Focht, Lubell, Trachtenberg, Vedlitz & Maltock). Cambridge, MA: The MIT Press.
- Saunders, J.O. & Wenig, M.M. (2007). “Whose Water? Canadian Water Management and the Challenges of Jurisdictional Fragmentation.” In *Eau Canada: The Future of Canada’s Water* (e.d. Bakker, K.J.). Vancouver: UBC Press.
- Schreiber, (2008). “Descriptive Statistics.” In the SAGE Encyclopedia of Qualitative Research Methods, Volumes 1 & 2 (e.d. Given, L.M.) Thousand Oaks: SAGE Publications, Inc.
- Schuckman, M. (2001). Making the hard choices: A collaborative governance model for the biodiversity context. *Washington University Law Quarterly*, 79, no. 1, 343-365.
- Scott, T.A. & Thomas, C.W. (2017). Unpacking the Collaborative Toolbox: Why and When Do Public Managers Choose Collaborative Governance Strategies? *Policy Studies Journal*, 45, 191-214, doi:10.1111/psj.12162
- Shaffer-O’Connell, M. (2017). Interest Groups, Federalism, and Water Quality in the Great Lakes: Chasing a Moving Target. *American Review of Canadian Studies*, 47, no. 1, 89-100.
- Shilling, F.M., London, J.K. & Liévanos, R.S. (2009). Marginalization by collaboration: Environmental Justice as a third party in and beyond CALFED. *Environmental Science and Policy*, 12, 694-709.
- Shrubsole, D. (1996). Ontario Conservation Authorities: Principles, Practice and Challenges 50 Years Later. *Applied Geography*, 16, no. 4, 319-335.
- Siddiki, S., Kim, J. & Leach, P. (2017). Diversity, Trust, and Social Learning in Collaborative Governance. *Public Administration Review*, 77, no. 6, 863-874.
- Smith, J.L. (2008). A critical appreciation of the “bottom-up” approach to sustainable water management: embracing complexity rather than desirability. *Local Environment*, 13, no. 4, 353-366.

- Sproule-Jones, M., Johns, C., & Heinmiller, T.B. (2008). *Canadian Water Politics: Conflicts and Institutions*. Montreal, QC: McGill-Queen's University Press.
- Stanridge, J. (2008). "E. coli" as a public health indicator of drinking water quality. *American Water Works Association*, 100, no. 2, 65-75.
- Swallow, B., Johnson, N., Meinzen-Dick, R. & Knox, A. (2006). The Challenges of Inclusive Cross-Scale Collective Action in Watersheds. *International Water Resources Association*, 31, no. 3, 361-375.
- Taylor, B., de Loe, R.C. & Bjornlund, H. (2012). Evaluating Knowledge Production in Collaborative Water Governance. *Water Alternatives*, 6, no. 1, 42-66.
- Trachtenberg, Z. & Focht, W. (2005). Legitimacy and Watershed Collaborations: The Role of Public Participation. In "Swimming Upstream: Collaborative Approaches to Watershed Management" (ed. Sabatier, Focht, Lubell, Trachtenberg, Vedlitz & Maltock). Cambridge, MA: The MIT Press.
- Van Buuren, A., Klijn, E-H. & Edelenbos, J. (2012). Democratic Legitimacy of New Forms of Water Management in the Netherlands. *International Journal of Water Resources Development*, 28, no. 4, 629-645.
- Vieira, V.R. (2016). When Procedural Legitimacy Equals Nothing: Civil Society and Foreign Trade Policy in Brazil and Mexico. *Contexto Internacional*, 38, no. 1.
- Vinke-de Kruif, J., Bressers, H. & Augustijn, D.C.M. (2014). How Social Learning Influences Further Collaboration: Experiences from an International Collaborative Water Project. *Ecology & Society*, 19, no. 2.
- Young, S., Plummer, R., Fitzgibbon, J. (2009). What Can we Learn from Exemplary Groundwater Protection Programs? *Canadian Water Resources Journal*, 34, no. 1, 61-78.
- Walker, P.A. & Hurley, P.T. (2004). Collaboration Derailed: The Politics of "Community-Based" Resource Management in Nevada County. *Society and Natural Resources*, 17, p 735-751.
- Walters, D., Spence, N., Kuikman, K., & Singh, B. (2012). Multi-Barrier Protection of Drinking Water Systems in Ontario: A Comparison of First Nation and Non-First Nation Communities. *International Indigenous Policy Journal*, 3, no. 3.
- Wang, G., Mang, S., Cai, H., Liu, S., Zhang, Z., Wang, L. & Innes, J.L. (2016). Integrated watershed management: evolution, development and emerging trends. *Journal of Forestry Research*, 27, 967-994, doi: 10.1007/s11676-016-0293-3
- Warriner, G.K., Madden, J.J., McSpurren, K. & Lukasik, L. (1996). Public Participation in Watershed Management: A Comparative Analysis. *Canadian Water Resources Journal*, 21, no. 3, 253-273.
- Williams, A.P. (2016). The Development of Collaboration Theory: Typologies and Systems Approaches. In "Advancing Collaboration Theory: Models, Typologies, and Evidence." (e.d. Miller-Stevens, K. & Morris, J.C.) New York, NY: Routledge.
- White, G. (1989). The Ontario legislature: A political analysis. Toronto: University of Toronto Press.

- Yin, Robert. (2009). Case Study Research: Designs and Methods, Second Edition. *Applied Social Research Methods Series*, 5. SAGE Publications.
- Yin, R.K. (2011). *Qualitative Research from Start to Finish*. New York, NY: The Guildford Press.
- Yin, R.K. 2015. Case Studies. *International Encyclopedia of the Social & Behavioral Sciences, Second edition*, 3, doi.org/10.1016/B978-0-08-097086-8.10507-0.

Government and Other Documents

- Auditor General of Ontario. (2014). Annual Report: Source Water Protection. Retrieved from <http://www.auditor.on.ca/en/content/annualreports/arreports/en14/312en14.pdf>
- Canadian Environmental Law Association. (2002). Ontario Passes the Safe Drinking Water Act. *Intervenor*, 27, no. 3-4. Retrieved from <https://www.cela.ca/article/safe-drinking-water-act/ontario-passes-safe-drinking-water-act>
- Conservation Ontario. (2001). *The Importance of Watershed Management in Protecting Ontario's Drinking Water Supplies*. Retrieved from [http://conservationontario.ca/fileadmin/pdf/conservation_ authorities_ section/SWPCORecoWalke rton.pdf](http://conservationontario.ca/fileadmin/pdf/conservation_authorities_section/SWPCORecoWalke rton.pdf)
- Environment and Climate Change Canada. (2017). "Water Governance & Legislation: Federal Policy and Legislation." Retrieved from <https://ec.gc.ca/eau-water/default.asp?lang=En&n=E05A7F81-1&pedisable=true>
- Environmental Registry of Ontario. (2015). "Decision on Regulation: Amendments to Ontario Regulation 288/07 'Source Protection Committees' under the Clean Water Act, 2006." Retrieved from <http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTIIMTEw&statusId=MTkwNjEw&language=en>
- Government of Canada. (2006). "Federal-Provincial-Territorial Committee on Drinking Water (CDW) – Health Canada." Retrieved from <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/water-quality/drinking-water/federal-provincial-territorial-committee-drinking-water-health-canada.html>
- Government of Canada. (2018). "Canadian Drinking Water Guidelines." Retrieved from <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/water-quality/drinking-water/canadian-drinking-water-guidelines.html>
- Government of Canada. (2018). "Water: Frequently Asked Questions." Retrieved from <https://www.canada.ca/en/environment-climate-change/services/water-overview/frequently-asked-questions.html>
- Heeney, P. (2008). "Clean Water Act Drinking Water Stewardship Program: Outcomes and New Directions of Drinking Water Stewardship Projects." Retrieved from http://www.latornell.ca/wp-content/uploads/files/presentations/2008/2008_W2B_Paul_Heeney.pdf
- O'Connor, D.R. (2002). "Report of the Walkerton Inquiry: The Events of May 2000 and Related Issues: Part One." Retrieved from http://www.archives.gov.on.ca/en/e_records/walkerton/index.html

O'Connor, D.R. (2002). "Report of the Walkerton Inquiry: The Events of May 2000 and Related Issues: Part Two." Retrieved from http://www.archives.gov.on.ca/en/e_records/walkerton/index.html

United Nations. (2014). "International Decade for Action 'Water for Life' 2005-2015." Retrieved from https://www.un.org/waterforlifedecade/human_right_to_water.shtml

United States Environmental Protection Agency. (2018). "Polluted Runoff: Nonpoint Source (NPS) Pollution." Retrieved from <https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution>

Watershed Committee of the Ozarks. (2018). "Non-Point Source Pollution." Retrieved from <https://watershedcommittee.org/watershed-101/non-point-source-pollution/>

Figures

Figure 1

Greenbelt Ontario. (2014). "CEO Blog: Thank You to the Leaders at Our Conservation Authorities." Retrieved from https://www.greenbelt.ca/thank_you_to_the_leaders_at_our_conservation_authorities2014

Figure 2

Canadian Environmental Law Association. (2009). "Map – Ontario Source Protection Areas and Regions." Retrieved from <http://www.cela.ca/publications/map-ontario-source-protection-areas-and-regions>

Figure 3

Ontario Regulation 288/07, s. 1.

Figure 4

Ontario Regulation 310/15, s. 1.

Hansard Transcripts

Legislative Assembly of Ontario. "Bill 43, Clean Water Act, 2006." Retrieved from <https://www.ola.org/en/legislative-business/bills/parliament-38/session-2/bill-43/debates>

Legislation, Statutes, and Regulations

Bill 43, *An Act to protect future and existing sources of drinking water and to make complementary amendments to other Acts*

Clean Water Act, R.S.O. 2006, c.22

Ontario Regulation 287/07 *Source Protection Committees*

Ontario Regulation 288/07 *General*

Ontario Regulation 315/10

Constitution Act, 1867

Conservations Authorities Act, R.S.O. 1990, c. C.27

Planning Act, R.S.O. 1990, c. P.1.

Meeting Minutes

Ausable Bayfield Maitland Valley Source Protection Committee:
<https://www.sourcewaterinfo.on.ca/portfolio/spc-committee-minutes/>

Lake Erie Source Protection Committee:
<https://calendar.sourcewater.ca/default/Index?StartDate=10/10/2007&EndDate=05/31/2020>

Trent Conservation Coalition Source Protection Committee: <http://trentsourceprotection.on.ca/source-protection-committee/meetings-minutes>

Source Protection Committee Documents

Ausable Bayfield Maitland Valley Source Protection Committee. (2007). "Governing Rules of Procedure, Code of Conduct and Conflict of Interest." Retrieved from <https://www.sourcewaterinfo.on.ca/wp-content/uploads/2015/12/SPC-Rules-of-Procedure-Code-of-Conduct-Policy-Conflict-of-Interest-Policy.pdf>

Lake Erie Source Protection Committee. (2011). "Rules of Procedure, Code of Conduct and Conflict of Interest Policy." Retrieved from https://www.sourcewater.ca/en/who-we-are/resources/Documents/SPC_Rules.pdf

Trent Conservation Coalition Source Protection Committee. (2008). "Committee Members' Handbook." Retrieved from http://trentsourceprotection.on.ca/images/SPC_Orientation_Manual_Update_2016/Section_8_SPASPC_Specific_Committee_Operation/DOC_20161219_SPR_TCC_Committee_Handbook_update2016.pdf

Appendix A: Proxy Representation by Individual Lake Erie SPC Members

Sector	Member	Same Sector SPC Member	Different Sector SPC Member	Same Sector Non-Member	Different Sector Non-Member	Unknown
Municipal	Busatto	1	0	0	0	0
	Cornwell	0	2	5	0	0
	Haggart	0	8	13	0	0
	Hodgins	1	0	0	0	1
	Laird	0	0	18	0	0
	Murray	7	1	0	0	0
	Oliver	0	2	6	0	1
	Perrin	4	2	0	0	0
	Rider	0	0	0	0	1
	Schmidt	14	1	6	0	0
	Total	27	16	48	0	3
Economic	Carberry	1	0	0	0	0
	Hunsberger	N/A	N/A	N/A	N/A	N/A
	Krueger	10	1	0	0	0
	MacDonald	7	8	0	0	3
	Parker	1	0	0	0	0
	Schneider	0	0	0	0	1
	Seibel	1	0	0	0	3
	Ungar	7	0	0	0	0
	Wales	7	0	0	0	0
	Total	34	9	0	0	7
Public Interest	Ceschi-Smith	0	1	16	0	0
	Dale	0	2	0	0	0
	Goldberg	0	2	2	0	5
	Harrison	N/A	0	0	0	0
	Henry	0	21	0	0	1
	Kirchin	N/A	N/A	N/A	N/A	N/A
	Nevills	N/A	N/A	N/A	N/A	N/A
	Rae	5	2	0	0	0
	Strauss	0	0	0	0	0
	Wilson	0	10	1	0	0
	Woolcott	6	0	0	0	1
Wright-Cascaden	N/A	N/A	N/A	N/A	N/A	
Total	11	38	19	0	7	