

Ontario Source Water Protection Planning

An Analysis of Theory, Policy and Practice

Sarah Minnes

Rural Planning and Development

University of Guelph

December 13, 2012

Table of Contents

Abstract.....	1
List of Acronyms	2
Introduction.....	3
Literature Review.....	6
Network Governance	6
New Regionalism.....	9
Watershed Management Collaborations	13
Themes Explored for Best Practices in Watershed Management and Governance	17
Clear Mission & Objectives	18
Legislated Process/Organized Structure	19
Right Actors at the Table	20
Adequate Capacity	21
Open Flows of Communication & Mutual Learning	23
Fairness	24
Common Benefit Evident.....	26
Shared Ownership & Accountability	27
Legislation Review	28
Roles and Responsibilities	28
Benefits of the Clean Water Act	33
Challenges of the Clean Water Act.....	34
Other Legislation	36
Case Study	38
Methods	40
Themes Explored	40
Key Informant Interviews	45
Literature and document review	46
Analysis	46
Results.....	46
Clear Missions & Objectives	47
Legislated Process/Organized Structure	49
Right Actors at the Table	50
Adequate Capacity	52

Open Flows of Communication & Mutual Learning	54
Fairness	56
Common Benefit Evident	58
Shared Ownership & Accountability	60
Discussion	61
Successes	63
Challenges	65
Conclusion	67
Recommendations and Issues to Be Addressed	71
References	73

Abstract

This research uses theories of regional watershed governance and collaboration to evaluate if source protection planning under the Clean Water Act in Ontario provides an effective opportunity in which separate jurisdictions and stakeholders within the same watershed were enabled to work together and negotiate a source protection plan. This research adds to the literature and understanding of the feasibility of a regional watershed governance approach for watershed management. The results of this research project will aid planners and policy makers in improving the design of watershed management programs. More broadly, this research outlines the challenges related to inter-jurisdictional regional planning in relation to watershed management and source water protection, and provides recommended next steps in source protection planning policy and research in Ontario.

List of Acronyms

CA	Conservation Authority
CRCA	Cataraqui Region Conservation Authority
CSPA	Cataraqui Source Protection Area
CSPC	Cataraqui Source Protection Committee
CWA	Clean Water Act (2006)
MOE	Ontario Ministry of Environment
SPA	Source Protection Authority
SPC	Source Protection Committee
SPP	Source Protection Plan
SWP	Source water protection

Introduction

One of the most complex environmental governance issues is watershed management. The issue of protecting the quality and supply of water is an international issue, brought to the world's agenda in 1992 at the Earth Summit (Shrubsole, 1996). It has been stated by the OECD that the crisis with water is in fact a management problem, rather than a scarcity problem (OECD, 2011). Watershed management is inherently complex and crosses political jurisdictional boundaries. To ensure sustainability, watershed planning requires place specific plans that integrate a systematic approach to not only water policies but also other impacting environmental, social, cultural and economic policies. This integration involves a multilevel governance approach and inter-jurisdictional decision making, consensus, implementation and enforcement (OECD, 2011).

In Ontario, the Clean Water Act (2006) (CWA) was created to generate a more integrated science based approach to protecting drinking water sources. The CWA was a response to the Walkerton Inquiry, which took place after the Walkerton contamination in 2000, where a contaminated water source resulted in 7 deaths and many seriously ill. The Province of Ontario decided to approach source water protection with a "multi-barrier" method, which included not only stricter water treatment but stricter management of water at the source (de Loë & Kreutzwiser, 2005). The Clean Water Act (CWA) mandates integrated, multi-level governance where representatives from industry, agriculture, the public and the related municipalities join together to make Source Protection Plan's (SPP) on a watershed basis. In Southern Ontario these Source Protection Committee's (SPC) have been facilitated by the related conservation authorities or the Source Protection Authority (SPA). The CWA is now in its fifth year; most

source water protection plans have been made. Implementation and enforcement of these plans is the next step (MOE, 2006b).

This research aims to evaluate if Ontario's CWA provided an opportunity in which separate jurisdictions and levels of governance within the same watershed were enabled to work together and negotiate SPP's in a regional governance network. This project focuses on the SWP planning process thus far and excludes meaningful assessments of what is to come in the implementation stage of the SPP's. It can be seen that the planning efforts so far are a significant first step in the management process. The implementation measures already taken are also discussed. This research evaluates the presence of best practices according to theories of network governance, new regionalism and other academic literature concerning watershed collaborations, in SWP planning in Ontario. These theories have provided a framework to understand the challenges and successes faced during the SWP planning process. The case study of the Cataraqui watershed, located in Eastern Ontario, was used to further delve into the inner dynamics of the SWP planning process.

Clean water is critical for the health and sustainability of every community around the world. Proper water management can prevent community debilitating disasters such as what occurred in Walkerton, Ontario. This research adds to the literature and understanding of the feasibility of a regional watershed based approach to SWP planning. The results of this research project will aid planners and policy makers in improving the design of watershed management and SWP programs. More broadly, this research outlines the challenges related to inter-jurisdictional regional planning in relation to watershed management and the implementation of effective environmental management policies.

This paper will first discuss the main theories surrounding regional governance and watershed collaborations, with a focus on various themes that were outlined in the literature review conducted at the early stages of the research. The themes that were determined as key factors in successful inter-jurisdictional and multi-stakeholder planning across watersheds include: clear missions and objectives; a legislated process/organized structure; the right actors at the table; adequate capacity; open flows of communication and mutual learning; fairness; a common benefit being evident; and shared ownership and accountability. These themes are discussed in the literature review section as well as in the “methods” section. Following the literature review a full legislation review of the CWA is provided discussing the roles and responsibilities of the actors involved in SWP planning and highlighting the benefits and challenges of the CWA, as well as the interaction of the CWA with other prominent legislation.

The next section of the paper will describe the Cataraqui Source Protection Area (CSPA) where the research was conducted and will give context to the Cataraqui Source Protection Committee (CSPC). The methods section will then explain the methods used in this research, including further explanation on the themes explored and research methods used. The results and discussions portion will evaluate if the best practices outlined by the literature review conducted and explored in the key informant interviews is taking place in practice with SWP planning in the CSPA. Furthermore, this section will use the theories explored in the literature to help explain why or why not the best practices outlined were present and how the presence or absence of these factors contributed to the successes and challenges in the SWP planning process. This section will also speak to the validity of the themes chosen and how the researched regional and watershed collaboration theories actually work in practice.

The conclusions portion of this paper will give a brief summary of the research and consider if the outcomes of the SWP planning process have been successful, according to the themes outlined in the methods section and the theories explored in the literature review. This will critically assess SWP planning under the CWA and provide final findings on the effectiveness of the CWA for providing a venue in which separate jurisdictions and levels of governance were able to work together to create one SPP that will be consistent throughout the watershed region. The remaining section of the paper will give a concluding summary of the research and findings and will provide recommendations and issues to be addressed for further research on regional watershed collaboration best practices and watershed planning under the CWA.

Literature Review

This section aims to explain the current literature and Ontario legislation surrounding watershed management and source water protection, as well as give a rationale to the themes explored in this research. The literature review is divided into three sections: the main theories used; the themes explored based on the theories and literature reviewed; and a full background of the CWA. A significant amount of this research relies on the assumption that the planning process so far, and the expected management process laid out by the CWA, is in fact watershed management at the beginning stages.

Network Governance

Integrated watershed management approaches were first brought to the global agenda following the Dublin Conference on Water and the Environment in 1992 and the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992. The integration

required for the approaches discussed at these world summits require the coordination and alignment of social, economic, and environmental interests to sustainably manage and conserve water resources (Medd & Marvin, 2008). Many argue that this approach to watershed management requires a “network governance” structure.

Network governance is defined by Bogason and Zolner (2007) as, “...negotiated interaction between a plurality of public and private actors, that takes place within relatively stable frameworks in a particular policy field” (Bogason & Zolner, 2007, p. 5). Network governance is different than just government or even multi-level government, as it involves forming interrelationships and co-action between different levels of government (municipal, provincial and federal level), as well as the private and public sector through negotiations. The involvement of actors who are not part of traditional government in the decision making process makes this governance rather than government (Bogason & Zolner, 2007). Networks of governance are described by Medd and Marvin (2008) as creating a more holistic watershed management approach that bridges the gap between regional and local plans. Networks are designed to be collaborative governance arrangements that include provincial actors, non-governmental organizations, business interests and scientists. The idea behind networks of governance is that they are non-exclusive, non-hierarchical structures that are determined by the “problem” or “eco-region” boundaries rather than politically defined jurisdictional boundaries (Bulkeley, 2005). It has been seen globally in countries such as Denmark, England and France that network governance is more prevalent on the local level (Bogason & Zolner, 2007).

As described by Ferreyra, de Loë and Kreutzwiser (2008), watershed management is based on the, “...interplay of multiple legitimate perspectives and problem definitions, and grounded in the wide range of stakeholder values, world views and histories found in

increasingly pluralistic and fragmented societies” (Ferreyra et al., 2008, p. 304). When concerning issues related to water it has been found no one controls watersheds absolutely, yet everyone has the power to impact watersheds both positively and negatively, which is why water policies and values associated to watershed can often be fragmented (FitzGibbon, n.d.). It is important that various stakeholders with diverse backgrounds and voices have a chance to coordinate collective action, multi-level networks of public, private and civil society that is able to influence various policy fields (Ferreyra et al., 2008). Networks of governance gives stakeholders more influence over policy and the management of resources.

It can be seen in the fisheries sector how network governance is addressing a shifting attitude toward resource management. For example Gibbs (2009) explains, “All of a sudden, the traditional players in fisheries management are exposed to a much greater and a more legitimate array of stakeholders who will not accept simply being consulted on management decisions. They want to be engaged and empowered and influence management decisions. This is network governance” (Gibbs, 2008, p.118). It was argued that in the fisheries sector changing conditions such as the increased accessibility to internet registries of government documents and technical reports has created new stakeholders that include non-governmental organizations, local informal institutions, collectives of processors and support industries , the general voting community, local residents in fishing communities, recreational fishers, and global communities who influence fisheries through mechanisms such as market forces (Gibbs, 2008).

A network within a region is not meant to be a clear horizontal or vertical management structure. Medd and Marvin (2008) explain networks of governance being represented by the metaphor of the body which symbolizes the region, the veins as the network, and the blood as the fluid space within the networks. This metaphor reflects the fact that networks should not be just a

horizontal process, and will sometimes involve a complex hybridized style of networked governance comprised of vertical and cross wise interactions of actors (Morrison, 2007). Furthermore, it can be seen, sometimes, a solely bottom up network, initiated by local issue based groups can lack the adequate resources and capacity to properly manage an issue. However, the plethora of actors involved in networks can provide a venue where issues based groups can share information and problem solving techniques (Norman & Bakker, 2009).

Rathwell and Peterson (2012) discuss the importance of connecting social networks with ecosystem services for watershed governance. This involves a coordination of governance efforts such as the regulation of the impact of tourism on shared water sources. Networks represent an investment in social capital, which when key players are aligned together, can be a catalyst to collective action within a decentralized multi-actor system of governance. Furthermore, networks can be a response to problems in governance, as they can encourage a process of social learning. This can create effective multi-level governance led policy and planning as well as innovations in actions for management decisions (Robins, Bates & Pattison, 2011).

New Regionalism

New Regionalism has emerged as a result of the restructuring that has occurred following the recession of the 1980s. Wheeler (2002) explains that New Regionalism is a holistic planning approach that recognizes the interconnectedness of economic, environmental and social systems. Opposed to “old regionalism” (circa 1950s-1980s) which was mainly concerned with boundary changes and top down government structures, New Regionalism focuses on governance rather than government, cross-sectoral governing, collaboration versus top down power, building trust and empowering communities (Tindal & Tindal, 2009). Even though New Regionalism has historically been concerned with economic matters, the principles behind the theory remain

relevant to watershed management. A New Regionalistic approach to watershed management allows for regional forms of governance that can respond to regional problems that overlap with different issue areas (Hettne, 2005). The fact is a watershed knows neither political jurisdictional boundaries nor do watersheds live in a silo of one policy planning sector. All human activities, whether environmental, recreational, cultural, economic or social, impact the health of the watershed, so this is why all levels society need to be part of watershed management actions (Mitchell, 2005).

Gibbs and Jonas (2001), discuss in their paper on rescaling regional governance, the importance of greater democratic involvement in decision making and the integration of environmental, economic and social decision making. They go on to emphasize that sustainable development can only be achieved by a regional approach where there is a strong regional jurisdiction, strong environmental sectoral planning, the involvement of the economic governmental actors in environmental management, a balance of power between the private and public sectors and the coordination between regional, sub-regional and local policies (Gibbs & Jonas, 2001). New Regionalism is highly concerned with the integration of different sector policies, meaning the approach suggests balancing economic policies such as pro-growth regimes with considerations of local and regional environmental policies and governance structures (Gibbs, Jonas & While, 2002).

Peterson, McAlpine, Ward and Rayner (2007) claim that New Regionalism in regard to environmental management implies "...a focus on specific geographic regions and place making; an active approach based on improved governance arrangements; the adoption of more holistic and integrated frameworks that incorporate environmental concerns; inclusion of normative approaches; acknowledgement of the importance of regional design and physical planning"

(Peterson et al., 2007, p. 132). It is thought that a New Regionalistic approach is required for balancing various conflicting development issues. Peterson et al., like Gibbs & Jonas (2001), believe that the only way to truly plan for sustainable development is with the cooperation of management institutions in matters such as economic growth, regional competitiveness, environmental issues, and building networks.

The OECD released a report in 2011 entitled, *Water Governance in OECD Countries: A Multi-level Approach, OECD Studies on Water*. In this study they state that, “There is no one-size-fits-all answer, magic blueprint or panacea to respond to governance challenges in the water sector, but rather a plea for home-grown and place-based policies integrating territorial specifications and concern” (OECD, 2011, p.3). This statement reflects the changing realities in watershed management from a more top-down, government oriented approach to a more bottom-up, ecosystem based, governance approach. This requires the acknowledgement of systems thinking in water policy making, including the integration of environmental, cultural, economic and social factors (OECD, 2011).

SWP planning is not only being approached on a regional level but it is being approached as something requiring public buy in, local place-based knowledge, the interaction of rural and urban residents as well as a significant amount of sharing of knowledge through all levels of governance (Ferreyra et al., 2008; Norris, 2001). Water governance can be described as processes or institutions in which decisions are made about water, incorporating a wide range of key industry, political, regulatory and public actors needed to properly implement decisions. This differs from water management which is simply the on the ground activity that regulates conditions of use. Good water governance should allow for a more localized planning process, promotes better-informed, place-based decisions and facilitates the involvement of a wider range

of stakeholders (NRTEE, 2011). Relations of trust, mutual respect and responsibility and transparency are crucial for these types of decision making bodies (Lockwood, Davidson, Curtis, Stratford & Griffith, 2009).

It was stated by Savitch and Vogel (2000), in regards to the concept of New Regionalism that, "...this approach is closest to the ideal of governance without government. It advocates envisioned large numbers of independent governments (voluntarily) cooperating through multiple, overlapping webs of interlocal agreements. A large number of horizontal connections among localities are emphasized" (Savitch & Vogel, 2000, p.164). It has been recognized by most Canadian provinces and the Canadian federal government that the watershed model is the superior watershed planning technique (Christensen, 2011). Therefore, a New Regionalistic approach like described by Savitch and Vogel (2000) is needed.

Morrison (2007) explains that regional perspectives shed light on the conflicts among a region's interconnected economic, social and ecological networks. In Australia it was found, "Good multi-level governance demands effective multi-lateral engagement that involves organizations at each level actively participating in the design, development and delivery of the governance system" (Lockwood et al., 2009, p. 182). In 2010, Lockwood & Davidson (2010) stated you need the hybrid between environmental governance and government. This contains co-management, public-private partnerships and social private partnerships that bridge state-market community divisions in water governance regimes. An understanding of New Regionalism can help mitigate problems or conflicts faced by these regional watershed management arrangements and the sometimes complicated interactions of these varying actors. Ultimately it is argued by that, "the litmus test of an effective watershed governance system is the creation of public accountability, the integration of various problem-solving techniques, and

the capacity to see things from a regional perspective” (Savitch & Vogel, 2000, p. 167). The theory of New Regionalism provides a way to understand the relationships of these new horizontal and inter-jurisdictional relationships created through watershed planning.

Watershed Management Collaborations

Watershed management is one of the oldest and most common examples of collaborative governance in North America (Vodden, 2009). As previously discussed regional collaborations surrounding watershed management are very complex, as they require an inter-jurisdictional, multi-level governance approach. This complexity is summarized in the following quote from McKinney & Johnson’s book, *Working across boundaries: People, nature, and regions*:

“Given that most watersheds cut across multiple local, state, national, and even international boundaries, it is not surprising that there has been a long history of experiments in how to share and govern this vital resource. Eventually, consistent with John Wesley Powell’s vision of watershed commonwealths, we may arrive at the point where we govern land, water, and the built environment on the basis of common regions”
(McKinney & Johnson , 2009, p.140)

Collaborating on the watershed level often makes a lot of sense, maybe not from a political perspective, but definitely from an environmental and social perspective. Hardy and Koontz (2009) argue that partnerships are appropriate at the watershed level, as benefits of the collaborations often outweigh transaction costs. It is stressed in their article entitled, *Rules for collaboration: Institutional analysis of group membership and levels of action in watershed partnerships*, that collaborative watershed partnerships opposed to solely command and control management mechanisms can provide environmental and economic benefits to watershed stakeholders. These benefits are achieved by the incorporation of local knowledge and institutions in decision making structures (Hardy & Koontz, 2009).

Furthermore, due to globalization there has been a decline in the autonomy of the nation-state and an increased rise in power of the market and civil society. This has created, “partnerships and collaboration between state and non-government actors that have blurred traditional roles, so that legitimacy can no longer be understood solely in terms of democratically elected governments” (Lockwood et al., 2009, p.173). Many researchers believe integrated watershed collaborations help find solutions to fragmentation and lack of cooperation that occurs when regional decisions encompass multiple political and administrative boundaries and multi-levels of governance (Lubell & Lippert, 2011).

Shamir and Howard (2012) explain that, “...the greatest obstacle to rational management of water stems from failures of governance and lack of coordination among political jurisdictions” (Shamir & Howard, 2012, p. 39). Watershed collaborations are often the balancing of joint values, scope, flexibility in problem solving options, current organizational and political relations and choosing the appropriate structure of the collaboration given the local context (de Boer & Bressers, 2011). To adequately address regional problems, McKinney and Johnson (2009) explain that regional partnerships should constantly be going through the cycle of diagnosing the issues, designing plans, taking action, evaluating and then returning to the issues identification stage (McKinney & Johnson, 2009).

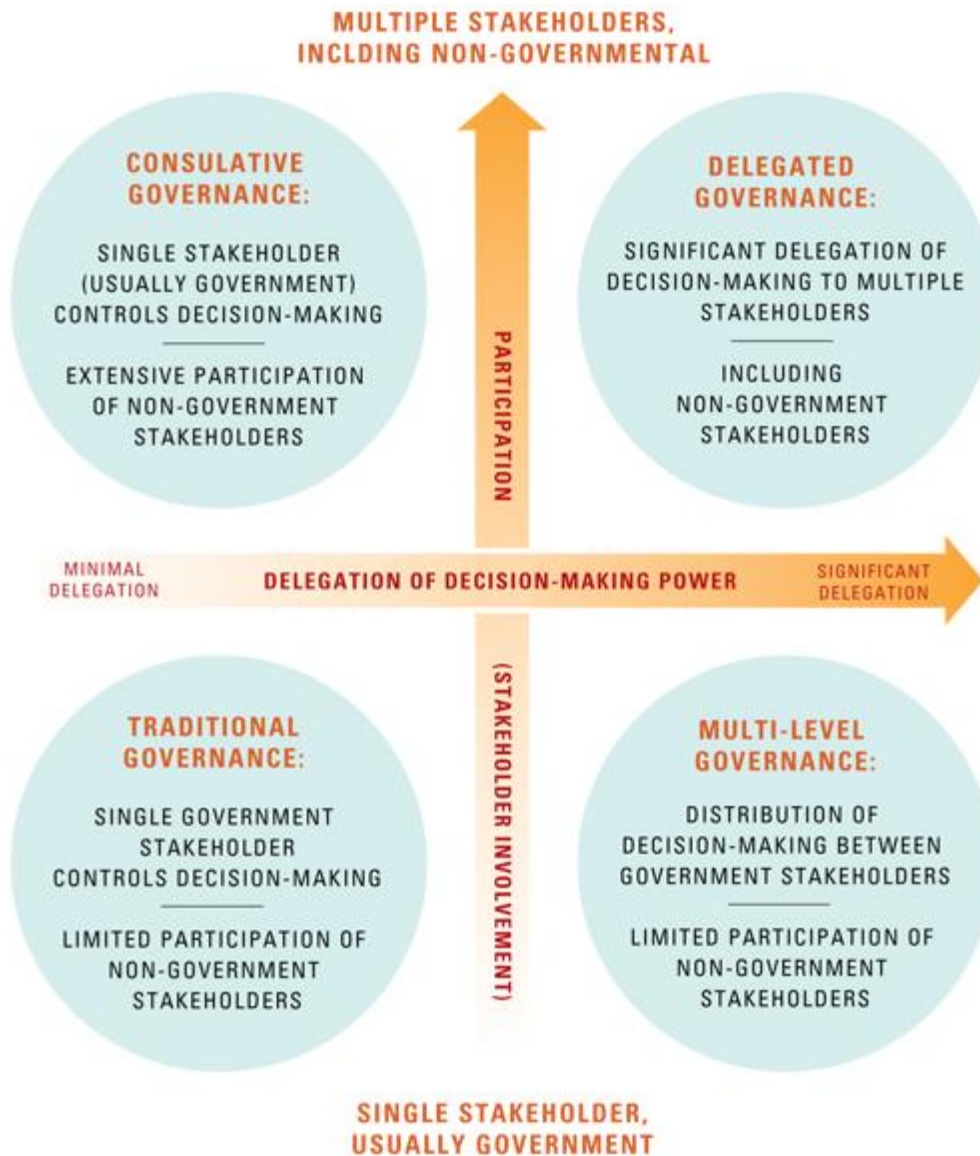
Friedman and Foster (2011) explain that, “Collaboration across boundaries often requires autonomous decision makers with different preferences and perspectives to jointly manage resources, make collective decisions, and determine fair and efficient processes for resolving disputes” (Friedman & Foster, 2011, p. 6). The requirements for watershed collaboration, planning, management and governance is more than just creating plans, sharing knowledge and talking about an issue. Watershed management requires inter-jurisdictional coordination,

implementation and consensus of planned policies, regulations and activities (FitzGibbon, n.d.). This calls for formal and informal negotiation, as well as jointly created rules and structures governing relationships. Furthermore, there should be an agreement of shared norms and mutually beneficial interactions (Thomson, Perry, & Miller, 2009). Collaborations also benefit from positive interpersonal group relationships and the establishment of equality of power and influence. This ensures the recognized shared norms and intentions of the collaboration are perceived as beneficial by key stakeholders (Elias, Cavana, & Jackson, 2002).

It has been found that not all examples of mutual action can be defined as “collaboration”. According to Himmelman (1996), mutual action is a continuum consisting of 4 different types of partnerships: networking, co-ordination, cooperation and collaboration. The highest level, collaboration, is defined as, “...exchanging information, altering activities, sharing resources and a willingness to enhance the capacity of another for mutual benefit and a common purpose; it requires the highest levels of trust, considerable amounts of time, and an extensive sharing of turf. Collaboration also involves sharing risks, resources, and rewards and, when fully achieved, can produce the greatest benefits of mutual action” (Himmelman, 2001, p. 278). Due to the fact that watersheds can be both positively and negatively impacted by all stakeholders, what Himmelman calls “collaborative empowerment coalitions”, is necessary in watershed collaborations. Collaborative empowerment coalitions can be initiated by either party from the top or the bottom, and will often extend beyond participation and organizational techniques and approaches. This approach provides a collaboration that respects differing values and beliefs and the promotion of shared power and decision making, based on trust and confidence (FitzGibbon, n.d.). In these collaborations the public are not just the target of the governmental intervention but have a legitimate power in the decision making process (Himmelman, 2001).

Another example of differing types of collaborations in water management is displayed in Figure 1. This figure explains the differences between traditional governance, multi-level collaborative governance, consultative governance and delegated governance. It can be argued that collaborative governance in the form of “delegated governance” is required for watershed planning because the nature of source water protection activities depends on actors outside of government such as industry and landowners for purposes of implementation (Ferreyra et al., 2008). Delegated governance structures for watershed collaborations work when: rights, responsibilities, mandates, and rules are clear; relationships are emphasized over hierarchies; common objectives and benefits can be defined; participants recognize the need to make decisions at a specific scale; stable funding is available to support the collaborative process; and participants share a commitment to sustainable water governance (NRTEE, 2011, <http://nrtee-trnee.ca/charting-a-course-chapter-7-collaborative-water-governance>). Best practices for watershed collaborations that build on theories of delegated governance and the previously discussed theories are described in greater detail in the following section.

Figure 1: Types of Collaboration in Watershed Management



(NRTEE, 2011)

Themes Explored for Best Practices in Watershed Management and Governance

The headings below explain the different themes explored in this research. These themes were derived from the literature review conducted using the above theories of network

governance, new regionalism and watershed management collaborations. The themes were found to be supposed “best practices” for regional watershed collaborations.

Clear Mission & Objectives

It is very important in watershed collaborations that each stakeholder at the decision making table is clear about the missions and objectives of the collaboration. Himmelman (2001) describes a coalition as “an organization of organizations working together for a common purpose” (Himmelman, 2001, p. 277). Watershed stakeholders have been found to have greater commitment to a process that is expected to yield clear, measurable results (NRTEE, 2011). As described by Grayman, Loucks and Saito (2012), in regard to planning watersheds, having a common vision brings a community together in a realm of consensus driven decision making.

Reimold (1998) explains that successful watershed management incorporates clearly expressed goals and understood needs. Different stakeholders need to have a common understanding of the issues and the various dimensions of the problem or issue they are aiming to address. The goals of the various actors within the watershed organization do not have to be the same, but they must be trying to solve the same problem. Moreover, the exact ways to achieve the goals can evolve but a clear strategic direction and mandate must be agreed upon in a very early stage of the collaboration. As Robins et al. (2011) explain, “Intentions and goals of the actors within an organizational system are crucial in determining how different networks intertwine, and in shaping the collaborations and alliances that are formed, thereby helping to pattern the structure” (Robins et al., 2011, p. 1311). Having clear missions and objectives in the early stages of the collaboration ensures the goals of the process align and address key actors personal ambitions for the collaboration. This can facilitate the creation of a structure that breeds a sense of culture and commitment to the planning process.

Legislated Process/Organized Structure

Having an institutionalized and organized structure for collaboration has been noted as a very positive factor in watershed partnerships. Friedman and Foster (2011) found that when working across jurisdictional boundaries the purpose and the institutional and organizational structure of the collaboration should be framed by a legal instrument and a Memorandum of Understanding, formalizing understanding among participants. Though this does not always include actual legislation or policy, this does include a formalization of the structure of governance and the scope of the collaboration (Friedman & Foster, 2011).

It has been argued that when truly planning for sustainability that a formal structure of governance is required to guarantee the collaboration occurs and ensures real commitment to the process as well as long term effectiveness (McKinney & Johnson, 2009; NRTEE, 2011; Peterson et al, 2007). For critical issues such as watershed management a bottom up solution may not occur or have the financial, political or technical capacity to be sustainable. This is why a push or facilitation from the “top” (the government) is often required (McKinney & Johnson, 2009). It has been noted by the OECD that by, “adopting a systematic approach to water policy requires overcoming critical multilevel governance challenges” (OECD, 2011, p.18). Having the process legislated by government results in a more coordinated inter-governmental response, as the legislation should be balanced and work within broader legislation in the area (such as Federal legislation) as well as complement other legislation from different governmental departments and ministries (Peterson et al, 2007). This allows for an integrated resource planning approach, which has been noted by Reimold (1998) as being a successful watershed management concept.

A legislated process forces policy makers to consider how the legislation will affect local municipal legislation as well as mechanisms for implementation. When working in multi-level

governance organizations it is stressed that, “senior government institutional arrangements that influence local capacity for groundwater protection include legislation relating to municipal responsibilities and powers, water allocation, and pollution control; planning and groundwater protection policies; and financial and technical support programs” (de Loë & Kreutzwiser, 2005, p. 245). When responsibilities, rules and implementation measures are clearly laid out in technical legislation this can also reduce conflicts in cooperative action and ensure implementation of the agreement is feasible, efficient and effective (Draper, 2012). Having formally written legislation also makes the process more democratic as it makes the information available to local civil society and decreases uncertainties in the process (Morrison, 2007).

Right Actors at the Table

Aligning the right people at the governing table is a critical ingredient in watershed collaborations (Boutkan & Stikker, 2004). It has been found that having the right actors at the table increases the likelihood of achieving group goals. To select the right actors the convener (may be a person or department) that is attempting to appoint the needed actors must be credible, neutral and trustworthy. The convener can be Government but does not have to be. The convener must understand the issues being addressed and the key players that will contribute to a positive planning result (Best, 2007; NRTEE, 2011). It is important to recruit stakeholders who believe in the process of collaboration and represent an accurate collection of actors to be considered legitimate (Sabatier et al, 2005). In collaborations the convener should not be afraid of intense ideological conflict between the chosen players at the table, as water management collaboration can often be a complex web of social interactions. However, non-governmental organizations and universities can lessen gaps between science and policy and facilitate horizontal and vertical interaction. Shared understandings, knowledge and dialogue in the

process creates trust and reduces ambiguity in the shared knowledge needed to produce plans (Sabatier et al., 2005; Stein, Ernstson & Barron, 2011).

It is important to have members that will give insights into local/regional needs. These members should be knowledgeable of the various impacts that exist in regards to watershed health and the appropriate solutions to mitigate the addressed impacts (Boutkan & Stikker, 2004). It can be seen that, "...local agencies usually are more familiar with local circumstances than are senior government agencies, and, ideally, should be in a better position to determine the appropriate land use controls" (de Loë & Kreutzwiser, 2005, p.243). Local officials are important in bringing front-line knowledge and legitimacy to the process. Furthermore, cross-sector representation is also important, such as First Nations, concerned citizens, industry, NGO's, experts and universities. Participants from outside the public sector can often bring assets, expertise and credibility to a collaboration (Friedman & Foster, 2011; NRTEE, 2011). Specifically, the inclusion of the First Nations representation and indigenous knowledge in the watershed planning process is essential for success. The inclusion of First Nations incorporates unique understandings of the health and functioning of watersheds, values and priorities that are needed for successful and co-operative implementation of actions and solutions needed for healthy watersheds (NRTEE, 2011; Vodden, 2009). Ultimately, the process does not have to include every possible relevant stakeholder in the decision making process, but to generate successful long term solutions, key stakeholders and interest groups must be represented (NRTEE, 2011).

Adequate Capacity

For decision makers to make appropriate decisions and for solutions to be enacted, watershed collaborations must have adequate capacity. Freidman and Foster (2011) describe

capacity as, “sufficient resources, expertise, leadership, external connections, and social capital. Federal and state government participants typically bring ample capacity in staff, expertise and money” (Freidman & Foster, 2011, p.7). De Loë and Kreutzwiser (2005) believe failures to provide clean drinking water can be attributed to the lack of five main capacity and capacity building categories: technical, financial, institutional, political, social. Social capacity can be enhanced by resources aimed at increasing the networking capacity of regional watershed managers (Morrison, 2007). Technical capacity may not be present among governance or collaboration members at the beginning of the collaboration. However, education should be provided so that there is an understanding of risk assessment, risk reduction, monitoring of water quality and quantity, planning, data management, emergency responses, remediation efforts, relevant technology and any other further information needed to comprehend watershed systems (Boutkan & Stikker, 2004; de Loë & Kreutzwiser, 2005; Viessman & Schilling, 1986). This level of education requires both good teachers and good research (Reimold, 1998).

Having adequate political and financial capacity is essential in fulfilling watershed collaborations. Grigg (2012) states, “The biggest difficulties in water resources management will continue to be in the political legal, and financial arenas” (Grigg, 2012, p. 73). Political capacity can include having the proper legal backing and political support to enact the watershed plans as intended. Financial support is very important in both the planning, initial implementation and ongoing management stages of watershed management. It was found in Australia in studies related to water quality improvements in the Great Barrier Reef that economic incentives are important in encouraging the implementation of best practices. This included a focus on working with stakeholders by using a variety of incentives and other tools to achieve both conservation and production outcomes (Peterson et al, 2010). Furthermore, financial capacity needs to be

provided for staff's time, information and research, and travel investments for watershed collaboration members (NRTEE, 2011).

Many watershed management researchers note that a downloading of responsibilities without commensurate power and resources leads to restricted capacity to solve watershed issues (Norman & Baker, 2009; Peterson, Walker, Maher, Hoverman, & Eberhard, 2010). This could include funding for expensive improvements to water infrastructure and increased staffing for risk management (Ivey, de Loë, & Kreutzwiser, 2006; Means, 2012). Without the proper funding, especially in rural areas, the local municipalities would not be able to fulfill actions required under the watershed management plan, thus resulting in an ineffective watershed collaboration.

Open Flows of Communication & Mutual Learning

When working in a watershed collaborations open flows of communication and an environment of mutual learning is very important. In Denmark, England and France it was found that in networks of governance there is a need for high levels of communication and interaction (Bogason & Zølner, 2007). Ongoing dialogue that is open between all stakeholders creates trust, increases understanding, reduces conflict and improves feelings of success in the planning process. This creates cultures of cooperation and decreases knowledge uncertainty through analysis and deliberation. Ongoing dialogue also ensures that failures from the past are not repeated (Sabatier et al, 2005).

Open flows of communications also mean that mutual learning is prevalent. Mutual learning involves more than just learning from outside consultants, reports or other formal channels. Mutual learning is based on the creation of a venue where actors feel comfortable

communicating their local knowledge and expertise. It is explained by Reimold (1998) that scientific inquiry and evaluation is necessary however scientific knowledge is not management. Often municipalities, industry and the public have the access to knowledge that is not available formally (Peterson, 2007; Peterson et al., 2010). This sharing of information enhances others understanding of the issue and creates needed dialogue in the planning process (Ivey et al., 2006).

Open flows of communication and mutual learning also enhance the resilience of partnerships. Watershed partnerships are often complex and dynamic, and increased levels of knowledge and understanding of the issues make more adaptable decision makers (Hudson, 2010). Effective knowledge management and a culture that values reflection, learning, experimentation, complexity, and diversity creates a better understanding of the watershed and the contextual realities of proposed source water protection measures (Lockwood et al, 2009). By understanding other key actor's roles, responsibilities and concerns related to water management, better policies and regulations can be made that has the needed local and regional support and the proper allocation of financial and human resources (McKinney & Johnson, 2009). The understanding and communication about each other's roles improves decision making and long term planning as it educates stakeholders in a way that enables them to connect the interrelationships between issues (such as good security and food security). This understanding of interrelationships between issues can create a broader framework of ecological management and action (NRTEE, 2011).

Fairness

Fairness in a collaboration means that all members of the network hold equal advantages and power within the network. Negotiations and decisions should be based on consensus, rather

than a hierarchal decision making processes. This means the use of both flexible and coherent governance regimes that enables watershed planning to meet local requirements and work towards sustainable situations with win-win outcomes, constructive and cooperative planning and implementation and the development of high levels of trust (de Boer & Bressers, 2011). Fair representation can be a challenge. For example a balance needs to be found between small municipalities with sometimes more land needing land-use planning and water regulation and larger municipalities that may dominate a particular basin demographically and economically (NRTEE, 2011). Who participates in the regional planning process and who is expected to enact the plan largely relates to the overall fairness of the plan and inclusion of relevant stakeholders (McKinney & Johnson, 2009). To achieve the goals described by de Boer & Bressers (2004), the process has to be accessible and everyone who wanted to or is a key stakeholder in the process should be able to participate. This includes First Nation representatives and public representation (Bakker & Cook, 2011). Public representation means, "...that citizens or persons outside of the planning or management agencies are involved in the planning of public facilities and programs" (Viessman & Schilling, 1986, p. 271).

To facilitate fairness in collaborations the process must be open and transparent. The collaborative initiative must be both internally and externally legitimate. Internal legitimacy means the right participants and a good process with clear, transparent and fair rules. External legitimacy is gained through some level of recognition and backing from established democratic institutions (NRTEE, 2011). For example, when a draft watershed plan is submitted for public or municipal review, enough time to adequately review the plan should be given. The proper avenues to address concerns should also be clear and easily accessible. Furthermore,

participant's opinions and concerns must be respected. Respect should be a prized factor in the process and be fostered as much as possible.

Common Benefit Evident

For a common benefit to be evident in watershed collaboration, everyone in the network must believe their involvement is beneficial to their affiliation's agenda. Collaboration should be responsive to the interests of its members and the public in order to achieve meaningful observable results (FitzGibbon, n.d.). Actors in the process need to feel that they have influence over decisions (Lubell & Lippert, 2011). Participants also recognize the need to make decisions at a specific scale and the process used to enact the collaboration (NRTEE, 2011). A common benefit can facilitate real commitment which can build on other themes discussed such as adequate capacity, ownership and accountability of the plan.

To build a feeling of common benefit it is important to set realistic goals. Starting with small successes in the collaboration is a good way for every member involved to experience the benefits of collaboration, and not become discouraged by the complexity of bigger issues. Actors also have to believe the process and act of collaboration is appropriate and an efficient use of time and resources. This involves believing the benefits resulting from the collaboration outweigh the transaction costs (i.e: costs of sharing information and staff time) (FitzGibbon, n.d.). Often instilling a feeling of common benefit amongst the general public requires community awareness and education. This can be done through events such as Children's Groundwater Festivals, the release of educational documents and public service announcements on the television and the radio (de Loë & Kreutzwiser, 2005).

Shared Ownership & Accountability

In the 1990's there was a shift in integrated water management toward stakeholder and public participation to encourage "community ownership" of watershed problems and solutions (Ferreyra et al., 2008). Shared ownership and accountability has to be acquired and cannot be forced upon key stakeholders in watershed partnerships. One cannot assume that just because something is legislated that the necessary actions for implementation will occur as intended. Source water protection efforts are implemented more effectively when landowners and local governing bodies feel ownership of the plan and when there is accountability of the resulting policy mechanisms (NRTEE, 2011). Accountability in the process makes sure that members and stakeholders hold each other and decision makers accountable for the decisions and commitments made (FitzGibbon, n.d.).

Issues of accountability and ownership of watershed plans occur when populations feel that the watershed plans made do not reflect their own mandates and goals. Watershed planning can increase conflict between rural versus urban and upstream versus downstream municipalities (Ivey et al., 2006). This division is often because of opposing views and the different focuses of rural and urban populations. To address the local context and enhance ownership of the plan, structuring environmental governance and policy making to be made from local and regional levels is important (Gibbs et al., 2002). Having legislation made at the local level has been noted as being superior than federal and provincial level policy because local governments are more inclusive of the variety of ways that impact watersheds, including land use planning (Hirokawa, 2011). Who develops watershed plans speaks to issues of ownership, buy-in, willingness and capacity (McKinney & Johnson, 2009). However, any distribution of funding and responsibilities

to regional or local bodies needs to be followed with a degree of power and autonomy (Lockwood et al, 2009).

Legislation Review

Roles and Responsibilities

In Ontario, the provincial government has the role of policy design for water resources and supplies. Municipalities are then required to enact provincial legislations and incorporate the overarching provincial mandates in their own Official Plans and by-laws (OECD, 2011). SWP planning under the CWA has been created by the Ontario government to be a more bottom-up process than has previously occurred. This process involved stakeholders from the municipality, the conservation authorities, industry, agriculture and the general public. This approach follows the recent trend in water management that is seeing the traditional top down forms of central government being replaced by more fluid structures of governance (Ferreira, deLoe & Kreutzweiser, 2008).

The following is the proposed timelines of the planning and implementation of the CWA:

Year	Purpose	Action	Actual Date of Completion for the Cataraqui Source Protection Committee
1	Laying the Foundation	-Passing of CWA -Establish SPA's and SPC Members -Creation of the Terms of Reference - Approval of Terms of Reference	2006-2008
1-2	Assessment of Risk	-Risk Assessment Studies and Report -Municipal and Public Participation	2008-2011
3-5	Source Protection Planning	-Creation of Policies Addressing Risks -SPA , Municipal and Public Consultation	2011-2012

5+	Implementation	-Municipalities Enact SPP, Risk Management Officers are Hired -SPC monitors SPP and provides Province with Annual Report	2013+
----	----------------	---	-------

(Conservation Ontario, 2009 & CSPP, 2012b)

It should be noted that the planning process under the CWA did not evolve as prescribed by MOE. In practice negotiations and implementation measures (that received provincial funding under the Ontario Drinking Water Stewardship Program), date back to 2007.

The involvement of the Ontario government under this act includes setting out the rules and approving the terms of reference, assessment reports and the SPP's created by the SPC's (MOE, 2006b). Under the CWA SWP areas include those areas within an associated conservation authority jurisdiction. There are 36 Conservation Authorities (CAs) in Southern Ontario. Where there is a CA, it is designated as the Source Protection Authority. The CAs are expected to work with the Province and associated municipalities to initiate the SPCs. The CAs are required to act as scientific experts and provide the technical and administrative support that the SPCs need in order to respond to local conditions and develop new partnerships to address problems (Shrubsole, 1996). A major role the CA has is appointing the SPC. The SPC has to be composed of 10-22 members. The SPC's members must consist of 1/3 municipal sector, 1/3 commercial, agriculture or industry and 1/3 from the academic, professional, NGO sectors or the general public. In the case that there is one or more First Nation communities in the source protection area, committees of 10, 16 or 22 must have 1, 2 or 3 (respectively) of First Nation representation (Clean Water Act, 2006). The chair of the SPC is appointed by the Minister of Environment. Furthermore, certain appointed representatives from the SPA (generally the CA) and the MOE can attend SPC meetings as a liaison (Clean Water Act, 2006).

Municipalities are to act as the local experts, sharing data about their own source protection area, existing local planning and wellhead protection and water treatment.

Municipalities are responsible for the implementation and enforcement of the SPPs, as they have control over land use planning, water supply and wastewater treatment (Ivey et al., 2006). For example, municipalities can enforce conditions on development applications as a provision for approval. They are to do this by the hiring of a risk management officer and adhering to all regulations under the SPP made for significant threats and including these regulations in local official plans and by-laws. A significant threat is defined in Ontario Regulation (O. Reg.) 287/07 (General) and the Director's Assessment Report: Technical Rules. Under these rules the province has set out which activities can be considered as threats and under what circumstances. In the Tables of Drinking Water Threats (the Tables), which is in the technical rules document, it is clearly laid out, depending on the location of the threat to a municipal intake, whether a threat is significant, moderate or low (MOE, 2010b). The list of drinking water threats is below:

“1.1 (1) The following activities are prescribed as drinking water threats for the purpose of the definition of “drinking water threat” in subsection 2 (1) of the Act:

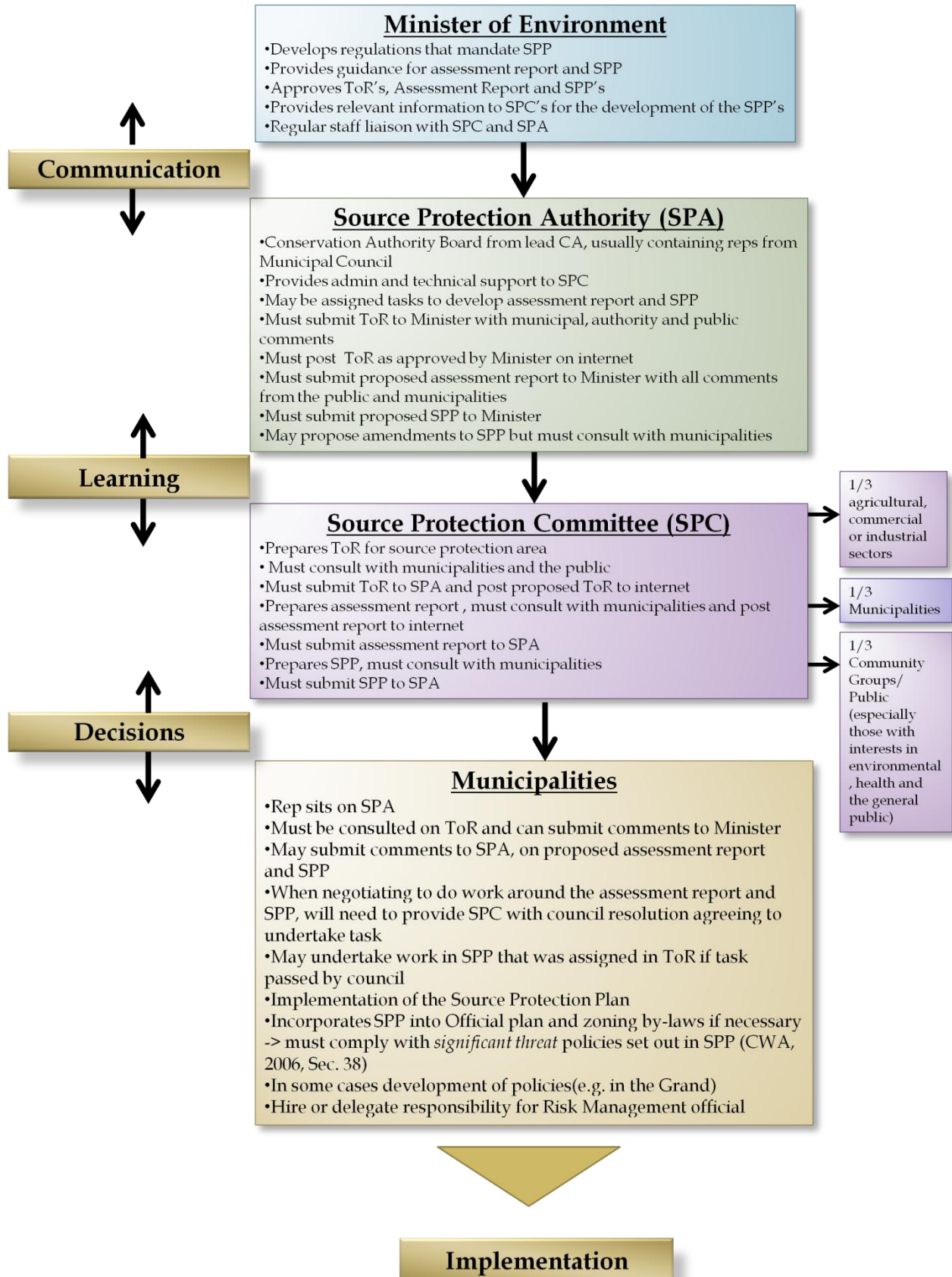
1. The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act.
2. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
3. The application of agricultural source material to land.
4. The storage of agricultural source material.
5. The management of agricultural source material.
6. The application of non-agricultural source material to land.
7. The handling and storage of non-agricultural source material.
8. The application of commercial fertilizer to land.
9. The handling and storage of commercial fertilizer.
10. The application of pesticide to land.
11. The handling and storage of pesticide.
12. The application of road salt.
13. The handling and storage of road salt.
14. The storage of snow.
15. The handling and storage of fuel.
16. The handling and storage of a dense non-aqueous phase liquid.
17. The handling and storage of an organic solvent.
18. The management of runoff that contains chemicals used in the de-icing of aircraft.

19. An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.
20. An activity that reduces the recharge of an aquifer.
21. The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard. O. Reg. 385/08, s. 3.”

(MOE, 2011)

Municipalities have the option of delegating their enforcement authority to the board of health, planning board or SPA (MOE, 2006b). In regards to actions already taken, some municipalities have made operational/infrastructure changes to protect source water such as upgrading wastewater plants, reducing road salting and improving and replacing out of date water infrastructure. In some municipalities such as York Region, risk management officers have already been hired. Figure 2 below summarizes the roles and responsibilities under the CWA.

Figure 2: Roles under the CWA



Benefits of the Clean Water Act

It has been noted, “Ontario has the most well-funded and ambitious program to protect source water. Ontario’s standards for water treatment, testing, standards and reporting are as strong as or stronger than other Canadian jurisdictions” (Christensen, 2011, p. 38). The CWA gives the opportunity for a multi-barrier source water protection approach, which is expected to reduce costs of water treatment (deLoe & Kreutzwiser, 2005). The source protection planning process is designed to address public health concerns and more broad ecological problems, such as pollution and habitat contamination. If planners and SPCs are creative, there is potential for the SPPs to link land use planning with water management and create significant positive environmental change (Ferreyra et al., 2008).

The integrated approach of the source protection planning process through multi-level and horizontal governance processes is creating a holistic approach that is described by international water management groups such as *Global Water Partnership*, as best practice (Mitchell, 2005). However, it is important to not think of integrated watershed management as a separate issue from land use planning (Mitchell, 2005). It can be seen that the CWA legislation attempts to acknowledge local municipal needs on an ecologically defined regional scale. Although the decision making framework under the CWA is complicated, if enacted effectively, consensus and enforcement of these regional SPPs will occur.

To help tackle issues of fiscal restraints from municipalities the MOE has come out with the *Ontario Drinking Water Stewardship Program* that has funded projects all over Ontario that include any infrastructure, education or operational projects that aim to make improvements in

the enactment of the CWA. This program promotes early action and puts priority on assisting First Nation communities and those communities located outside of a SPA (MOE, 2010a).

The Ontario government states, “Local communities are best positioned to decide what protective measures are needed and how best to carry them out” (MOE, 2008). The CWA is expected to produce place specific SPP’s that are locally and regionally successful. It is thought this shift to encourage multiple stakeholder consensus and public participation encourages “community ownership” of watershed problems and solutions (Ferreyra et al., 2008). Overall, the CWA adds additional protection with a focus on health and sustainable source water protection, which has limitless possibilities for better managing the environment and benefitting the residents of Ontario.

Challenges of the Clean Water Act

Implementation and enforcement of the SPPs under the CWA may be the responsibility of local municipalities; however it is undeniable that there are stakeholders on the basin, municipal, county, national and even international level. Watershed management is based on “...an interplay of multiple legitimate perspectives and problem definitions, grounded in the wide range of stakeholder values, worldviews and histories found in increasingly pluralistic and fragmented societies”(Ferreyra et al., 2008, p. 304). The fact is water is hard to manage because one watershed’s health depends on interdependencies across policy areas and between different levels of government (OECD, 2011).

The challenge with the CWA is that municipalities (or an authority delegated by the municipality) are expected to implement and enforce the SPPs. The enforcement on the municipal level requires inter-municipal agreement and a significant amount of “buy in” by the

SPP on the municipal level. There have been no specific tools given to municipalities to help them plan within a new watershed based jurisdiction. Even coordination between the methods of regulatory and non-regulatory tools for source protection will vary between the municipalities in a watershed due to access and capacity (Ivey et al., 2006). For capacity building to occur financial, technical, institutional, political and social support is needed (deLoe & Kreutzwiser, 2005).

The fact is the source protection planning process puts strain on the individual municipality's technical, financial and human resources. Most municipalities will have to re-engineer and revise their existing plans and infrastructure which will be especially difficult for rural municipalities where it is hard to raise funds for resource assessments and keep political commitments (Ivey et al., 2006). Also, different municipalities will have varying quality of drinking water sources and diverse threats to existing and future sources that may contradict or not align with other municipalities in the same watershed.

Integrated water management plans do not always meet the needs of all stakeholders (Boutkan & Stikker, 2004). What may make sense from an ecological or water science perspective may have little validity on the local level, when factors such as social conflict and local politics come into play. The CWA relies greatly on landowners (especially farmers) for implementation (Ferreya et al., 2008). By the request of farmers for more consistent legislation in relation to nutrient management, the Ontario government and the Ontario Farm Environmental Coalition (OFEC) has tried to tackle issues of implementation of clean water measures with the Nutrient Management Act (NMA). The NMA came out after Walkerton, and is designed to work with the CWA to protect water at the source. The OFEC has been fundamental in creating programs related to nutrient management, such as the Environmental Farm Plan (EFP). The EFP

is a voluntary, participatory education program that shows farmers how to identify environmental strengths and concerns on their property. These plans merge agricultural and environmental concerns. However, the Nutrient Management Act advisory committees and the EFP are both founded on the upper municipality level. This means different communities are working on different scales of collaboration in source water protection measures, making integration and consensus a more convoluted task.

Lastly, a significant challenge with the CWA and SPP's is they do not cover the 500,000 individual wells and private water systems in Ontario, as well as the 250,000 Ontarians living outside SPA's (Rang, 2009). Furthermore, currently Great Lakes intakes are also not covered under the CWA. The *Ontario Drinking Water Stewardship Program* was designed to serve those not included in a SPP. However, the majority of projects funded under this program are located in Southern Ontario and the program still excludes any communities that do not fall within a wellhead protection area or intake protection zone (MOE, 2010a). For those residents that do live within a SPA there is significant concern regarding property rights and enhanced risk of expropriation. Though these risks are seen to be rare by the provincial government it is unknown how exactly the SPP's will be implemented and how they could cause conflict in communities, especially those predominantly agriculturally based (MOE, 2008).

Other Legislation

The challenge of the implementation of the CWA is integrating it with other provincially and federally mandated plans and policies. On a federal level the Fisheries Act covers all fishing zones, territorial seas and inland waters of Canada. The Fisheries Act supersedes any provincial

legislation. The CWA has the potential of being disregarded when jurisdiction falls within federal boundaries. However, the CWA was created with this federal legislation as a guiding document (MOE, 2006b). Therefore, it is anticipated that the CWA itself will not contradict the Fisheries Act; however the implementation or interpretation of this act has the potential to be taken into other directions by the SPCs and subsequently the SPPs.

There are a plethora of Provincial legislations that have to be incorporated and recognized when implementing SPPs under the CWA. Firstly, the Provincial Policy Statement is designed to guide all municipal decisions and must be incorporated into upper and lower tier municipal Official Plans. Official Plans must be updated every 5 years, and any changes the SPPs bring to local rules related to water management, source water and wellhead protection must be incorporated. Other provincial legislation that must be incorporated into SPPs include: the Nutrient Management Act, Planning Act, Environmental Protection Act , Water Resources Act and the Safe Drinking Water Act. Furthermore, in some areas of southern Ontario the Oak Ridges Moraine Conservation Act, Places to Grow Act and the Greenbelt Act have to be considered (MOE, 2006b). The harmonization of this intricate web of policies becomes very complicated to decipher, especially for the SPCs that are made up of diverse stakeholders with varying backgrounds (Ferreya et al., 2008).

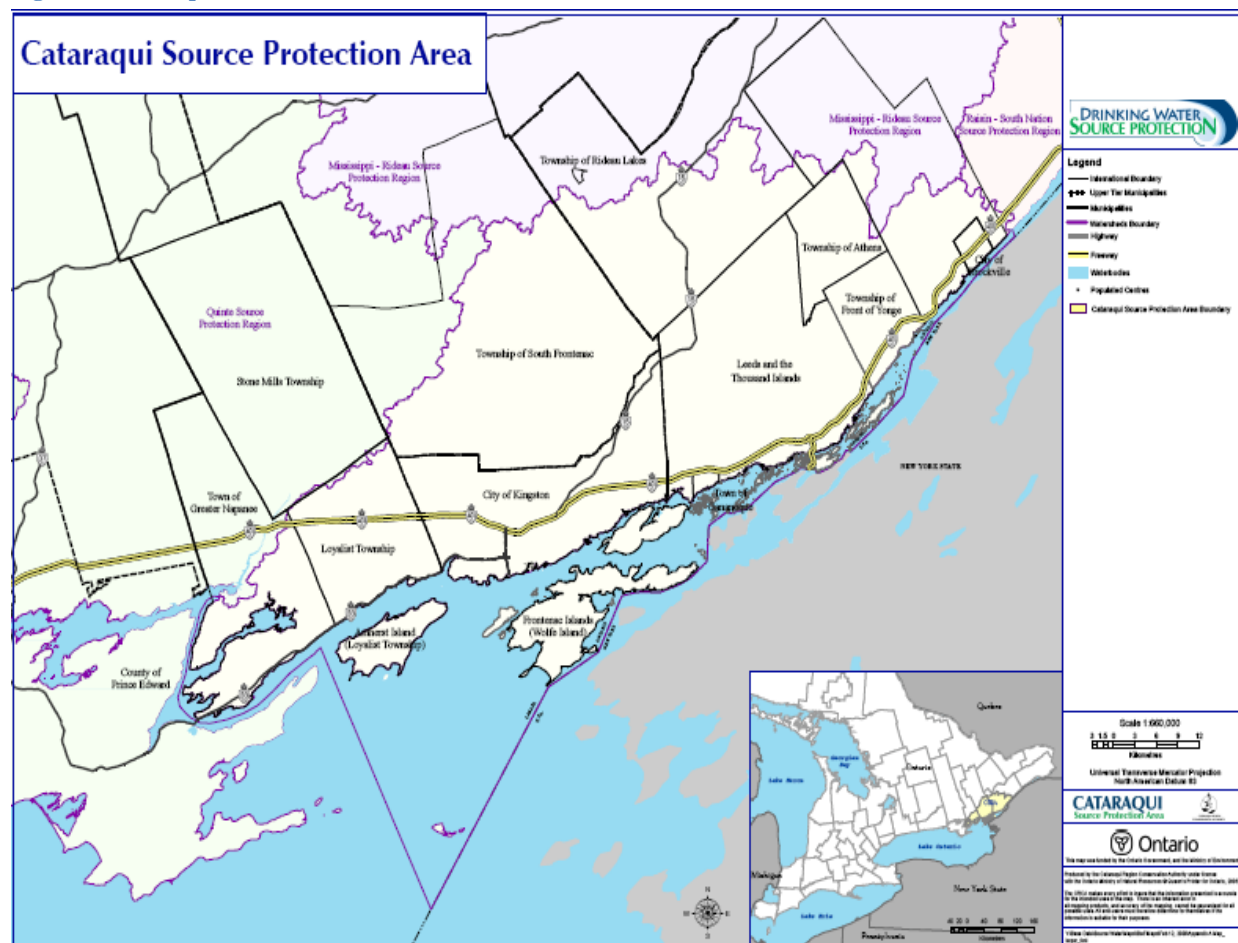
The integration and coordination of the above provincial legislations in the creation of SPPs becomes increasingly difficult when coordination between multiple upper and lower tier municipalities is required. As the SPPs are planned on a watershed based level, this sometimes requires several different municipalities to agree on implementation and enforcement measures of the SPPs. In the end, the CWA is a very complicated piece of legislated aiming to tackle the very large concept of source water protection. The legislation and policy creating under the

CWA requires a complex web of players and the interplay of multi-levels of governance. An evaluation of the planning process so far and already implemented management efforts under the ODWSP will be discussed below using the case study of the Cataraqui Source Protection Area.

Case Study

The CSPA is located in Southeastern Ontario, including the jurisdiction of the Cataraqui Region Conservation Authority plus the Township of Frontenac Islands and some additional areas along the St. Lawrence River. It includes land and water within the jurisdiction of all or part of four counties and 12 municipalities. The counties the CSPA include are: Prince Edward, Lennox and Addington, Frontenac, and Leeds and Grenville. The municipalities, from west to east, are: Town of Greater Napanee, Loyalist Township, Township of South Frontenac, City of Kingston, Township of Front of Yonge, Township of Athens, Township of Rideau Lakes, and the City of Cornwall.

Figure 3: Cataraqui Source Protection Area



Kingston, Township of Frontenac Islands, Township of Rideau Lakes, Township of Leeds and the Thousand Islands , Town of Gananoque Township of Athens, Township of Front of Yonge, Township of Elizabethtown-Kitley, City of Brockville (CSPC, 012c). This area is displayed above in Figure 3.

The CSPC is made up of 16 members, including 5 representatives from the economic/industry sector, 5 members from the encompassing municipalities, 5 members from various community groups and 1 chair. The committee also includes 3 liaison members, which are made up of 1 member from the CSPA 1 liaison from the MOE and 1 liaison representing the health units in the area (CSPC, 2012a). This source protection area is very interesting as it contains both rural and urban populations with sometimes very differing ideas of what SWP planning entails.

The majority of the CSPA is made up of water supplies that are either on Great Lake intakes or private wells (which were not included under this round of the SWP planning process). Due to the narrow scope of the planning process and the box the technical rules laid out by MOE put the CSPC in, a limited amount of significant threats could be identified under the CWA, however many low to moderate threats were found. A total of 158 significant threats were identified as occurring on 114 properties, compared to thousands of occurrences of significant threats identified in other communities in Ontario. In total there were 12 vulnerable drinking water systems that were found containing significant threats to drinking water. The majority of risks requiring risk management plans for activities address the handling and storage of fuel associated with home heating oil. The remaining of the risk management plans address the handling and storage of fuel for private use in vehicles and equipment (e.g., at a farm or public works yard) as well as agriculture related drinking water threats. Most identified risks are already

regulated through different means such as municipal by-laws and Ontario Regulation 267/03, which is the general regulation under the CWA (CSPC, 2012c). As many threats found in CSPA case study were not significant, they are not legally binding. However, the CSPC included a push in their plan for community outreach and education. The CSPC specifically focused on:

- “promoting responsible decisions about land use and development
- improving information availability
- recommending changes to municipal operations
- enhancing education and outreach initiatives
- conducting research.”

(CSPC, 2012b, <http://www.cleanwatercataraqui.ca/policySummary.html>)

As of August 28, 2012 the final proposed SPP has been submitted to MOE for approval.

Methods

Themes Explored

The themes explored are described in detail in the previous “literature review” section. These themes are summarized in the below table. The aim of the research was to determine to what degree these themes were present in the SWP planning process and if either the presence or absence of these themes could explain the successes and challenges faced by the CSPC.

<u>Themes Explored</u>	<u>Indicators</u>	<u>Example Quote Indicating Theme is Present</u>	<u>Example Quote Indicating Theme is NOT Present</u>
Clear Mission & Objectives	<ul style="list-style-type: none"> • Common vision • Mandate of CWA was clear • Strategic Objective • Missions and objectives remain constant throughout the planning and implementation process 	<i>“At the outset yes, because our marching order started with the CWA itself. It is a very broad based statement of purpose which is protecting drinking water quality which was what we were trying to achieve and</i>	<i>“So at the beginning the objectives were defined fairly broadly but as the Minister started coming out with these technical rules we got put in a little box. So in terms of the actual policies that have teeth, so we can</i>

		<i>what the objective was”</i>	<i>say don’t do this, do that, as land use, it only applies to very small chunks of land that is immediately adjacent to wellheads and intakes. Most of what we have are people who have their own wells so at the beginning the objectives were well defined but they got narrower and narrower, not to the point of being irrelevant but much narrower than I thought the task we had been given at the beginning was”.</i>
Legislated Process/ Organized Structure	<ul style="list-style-type: none"> • Formalized rights, responsibilities and rules • Feeling that having the process legislated was beneficial 	<i>“I think it will make it ultimately better because there is some teeth in it. So municipalities have to implement the mandatory so from that it has to make it better”</i>	<i>“At times it was a little bit suffocating in the sense that the CWA and the regulations provide so much detail and direction that the expertise around that committee table and our staff were not necessarily realized to its full potential in the sense that we were asked to jump through some very detailed hoops and we were asked to do things in a way that didn’t necessarily fit with the local culture and setting”</i>

Right Actors at the Table	<ul style="list-style-type: none"> • All relevant stakeholders needed at the table to make appropriate decisions are represented. • The acknowledgement that all actors at the table were beneficial to the planning process 	<i>“I think they did have the right people around the table. I can’t think of anybody who should have been around and wasn’t”</i>	<i>“It would have been nicer if the planning people were there, because they are the ones who were most vocal because a lot of the plans have to do with zoning in the future, the way the city was organized and planned. So I think they should have been at the table”</i>
Adequate Capacity	<ul style="list-style-type: none"> • Adequate amount of money, expertise, technical information, leadership, external connections, social capital, etc to properly make governing decisions and implement said decisions 	<i>“For the most part yes, we had the benefit of expertise and staff and consultants coming in and giving us power point presentations, and documents and providing input. So I don’t say or can’t say we had a capacity problem and I would say the source protection planning was fairly well funded. I don’t think there was a shortage of cash”</i>	<i>“We have the act, we have the purpose and we in good faith did all the stuff we have to do but at the end of the day there has been no provincial commitment to provide funding post 2012. And that is the most serious issues to be raised by many stakeholders and particularly municipalities who are going to be the major important implementing mechanisms”</i>
Open Flows of Communication & Mutual Learning	<ul style="list-style-type: none"> • Ongoing dialogue flowing through all stakeholders • Feeling of trust and respect to speak freely • Understanding of other stakeholders roles • Increased communication with watershed stakeholders compared to before the SWP planning process • A sense that the planning process fostered mutual learning between stakeholders and SPC 	<i>“What they have learned through it was that each had their part to play at different stages of the process. There was a lot of learning and development and mutual respect at the table. So even if I didn’t agree with your opinion and I said, “I do not agree, I want to see this”. For the most part it was consensus. There were very few times there had to be an actual vote at the table. The</i>	<i>“I remember early in the process we were talking about having a formal subcommittee working with the committees from the adjoining watersheds and I think I was appointed to that committee and we never actually met”</i>

	members	<i>majority of that was based on consensus. I think the success is based on the communication between the members around the highly technical and legislatively heavy information and complex program”</i>	
Fairness	<ul style="list-style-type: none"> • All stakeholders hold equal advantages and power within the SWP planning process • Negotiations and decisions are based on consensus • Adequate time for the public and municipalities to review plans • Trust in SPC members to create good SWP policies • Trust in municipalities to enact SWP policies • Appropriate ways of solving disagreements 	<i>“Yes, everyone had ample opportunity within the committee process and structure to raise all concerns and issues and proactive suggestions that they wanted. So people were not unduly constrained and no one felt intimidated. We got a long in a collegial manner. We got along together, we got to know each other. Some of the debates were intense I can remember some very intense discussions with some of the agricultural reps early in the process. But at all times it was conducted in a very respectful and somewhat informal manner, we had rules and structures but if anyone had something to say that could put up their hand to speak”</i>	<i>“I know in the pre-consultation process municipalities had the document and draft policies at least month before they were publically released. Should the public have just as much time as the municipalities? If you want to be fair about it, probably”</i>
Common Benefit Evident	<ul style="list-style-type: none"> • SPC members believe their involvement is beneficial to their affiliations agenda • Municipalities see a benefit in the source protection planning 	<i>“Yes. Others might debate that but I look at it from the opposite end of the spectrum. Can we afford not to protect drinking water sources? We saw what happened at</i>	<i>“Sometimes we felt we didn’t need to have this rammed down our throats because we are already doing it. There are current legislation already in place that</i>

	process	<p><i>Walkerton, from a social, economic and every perspective, not protecting the water source has dire consequences for not just the public health and environmental but the economic and social. It had to be done and though people might aggregate the costs of the source protection program, (this was millions of dollars spent), it had to be spent to fix a lot of gaps in the law previously. So I think, if this ever gets audited I think it is good value for money”</i></p>	<p><i>mandates it. Now we are adding to that legislation. Part of the push back of here is we already have a CFA, why do we have to do this, you are making us do it again. So they took some objections to that”</i></p>
Shared Ownership & Accountability	<ul style="list-style-type: none"> • Stakeholders hold each other and decision makers accountable for decisions and commitments made • Belief that the SWP planning process under the CWA was a model process • Believing the planning process was efficient and effective • The belief that those needed to implement the SPP will • The plan already being ratified by municipalities • Positive reactions from municipalities about the proposed SPP • Evidence of an inter-municipal agreement to enact policies 	<p><i>“I think the process for having the broader stakeholder involvement up front was worthwhile. The other option is if we had the local upper tier municipality without those boundaries make decision, this would have been problematic. The planning process is more of an educational process. You have to know the what. How do municipal water people understand the risks of the person who is on a well? Farmers need to understand why they may need to shut down. If they are involved in the process early on they can see why they need to do what they are doing and have that buy in and come to that</i></p>	<p><i>“There were some municipalities that endorsed it totally and sent a letter of support with their comments, some that endorsed it with a caveat and some that say no bloody way. We hoped going into it we would have had 12 municipal resolutions endorsing it. We didn’t have it. I don’t know if there is something we could do differently looking back, I really don’t know”</i></p>

		<i>conclusion. The more people you have in that and the more groups you have involved the better. Such as drycleaners and how bad they can be. So if you take a group through the process and this is the reason we are eliminating gas stations from this part of town, others know why the restrictions are in place”</i>	
--	--	---	--

Key Informant Interviews

The interviews conducted were semi- structured and incorporated a general interview guide that asked specific questions related to the explored themes. These interviews were conducted in confidence with a sample of CSPC 6 members, CRCA staff, MOE representatives and involved municipal staff from both upper and lower tier governments. Due to constraints of time and financial resources only one case study was used in this project. The methodological sequence of a single case study approach was employed. The single case study approach is described by Yin (1989) as developing a theory, picking a case study, designing the data collection protocol, conducting the case study (using interviews, documents and observations) and writing a report. It can be argued that depending on which SPC was chosen, quite different findings could have been produced. Though the CRCA case study cannot be taken as reality across Ontario, it gives an important glimpse into how SWP planning under the CWA unfolded in Ontario. There were some general lessons learned about the process that can likely be

generalized as constant throughout the province, such as what factors make inter-jurisdictional collaborations positive or negative.

Literature and document review

As outlined in the literature review section of this paper, this research relied heavily on the review of relevant academic theories and legislation. The academic literature review was derived from published books, reports and articles. The review of the CWA, other related provincial legislation as well as the CSPA's SPP was also important parts of understanding the outcomes of SWP planning under the CWA.

Analysis

Analysis was conducted mainly using a qualitative software program called NVivo. Full transcripts were produced from each key informant interviewed and coded in NVivo according to the different themes explored. Legislation, the CSPA SPP and other relevant documents were also coded in Nvivo. This produced a way to triangulate what was said in the interviews to what was being said in the legislation and plans. NVivo was also used to find patterns between certain themes, by conducting analyses such as cluster analysis. After the analysis was complete an "initial findings" document was sent out to all key informants for validation that the results were accurate.

Results

Below is a summary of the results found for each theme explored in relation to the SWP planning process in the CSPA. The information provided in the results section is based on the analysis of the confidential key informant interviews conducted and the relevant document and

legislation analysis, given the lens of the literature review previously discussed. A further discussion on the implications of these results is discussed in the discussion section of this paper.

Clear Missions & Objectives

Generally it seems that the main goals of the CWA and the SWP planning process were clear. The goal of safeguarding drinking water through a multi-barrier approach was realized following the Walkerton Inquiry. I found that all members of the planning process understood and shared the goal of protecting drinking water at the source. The objectives of the CSPC were defined as:

“ensuring that existing activities that are significant threats to municipal sources of drinking water are adequately managed, and that new activities that are significant threats are not permitted around these sources, 2. ensuring that new activities that are moderate or low threats will be adequately managed around these sources, and 3. acknowledging and responding to community expectations that regional areas of vulnerable groundwater should be identified and protected to the extent possible through the Clean Water Act. “

(CSPC, 2012c, p. 2)

Staying “*in scope, on time and within budget*” was noted by the SPA key informant as well as the MOE key informant as being an important mandate by the Province to follow. However, the CWA was a very broad based act and scope continued to become narrower and narrower as the process went on. This can be exemplified with the choice to only include municipal systems as being able to contain significant threats. It was noted the “*bridge was being built as we walked across*”. This would present a challenge as the CSPC participants would be working and at times would not know what the next step in the process would be, or at other times work already completed would have to be redone in a different manner. This created challenges but also fostered collaboration between the Province and planning participants, as

local members had an influence on next steps which were often discussed with the MOE liaison at the SPC meetings, and brought back to the MOE.

The flexibility of the process was noted as a good thing by the MOE represented interview because it allowed, “*each committee to use the tools they were given with the CWA to achieve what they thought was appropriate for their source protection area*”. This could be seen with the CSPC, who went above and beyond what was minimally required by the CWA, by including recommendations for low and moderate risks that the CSPC believed should receive greater attention.

Overall, it was noted that clearer mandates and instructions would have enhanced the process as the gradual roll out of the planning cycle, regulations and rules created an atmosphere of uncertainty. Through technical rules and policies and guidelines the MOE systematically narrowed the focus and would micro manage what the SPC’s were doing. Key informants explained they felt the purpose of the CWA, which is to protect drinking water now and in the future, was not met. Key informants strongly believed the purpose at the beginning was to protect drinking water for all Ontarians whether they are on municipal systems or not. The majority of key informants noted feeling “*boxed in*” by the decision to only include municipal systems as areas able to contain significant threats in the SPP’s.

It was stressed that for future planning cycles that parties need to agree upon the intended destination for the work, and a clear “*roadmap*” on how to arrive there at the very early stages of planning, if not before the planning work begins. Even though this process did at times enhance local input, it also disempowered local committees when their input or work already

done was overridden by the MOE. The narrowing of scope and the unsolicited interventions of the MOE made this seemingly bottom up process feel more top down in reality.

Legislated Process/Organized Structure

Having the CWA legislated gave the process the necessary “*teeth*” to enact the purpose of the act. It was mentioned that formal collaborations regarding SWP planning would have not occurred at this level without the process being legislated. The fact that the process was legislated made the actors feel their role was important and that there would be legislated enforcement of policies created under the SPP’s. The fact is bringing the array of actors and voices involved in the process into one room would have never occurred organically. Bringing these diverse voices around a table to create enforceable policies allowed for a chance to fill gaps that existed in previous provincial level legislation.

Even though there was legislation, this did not eliminate unknowns in the process. The responsibilities and roles, especially of the liaisons and the SPA’s were constantly evolving depending on the situation. It was noted the constant back peddling and changing of the rules by the MOE, made it hard to draft policies and made the SPC members feel micro-managed. The strict framework and the prescriptive nature of the CWA were noted as being negatives in the process. In particular the limited list of what could be defined as being a significant threat didn’t always fit with local cultures and conditions. Key informants felt like the Province should have allowed greater flexibility for the local SPC’s to decide the scope of their plans. Especially SPC’s with municipalities who felt the requirements of the SPP’s were being “*rammed down their throats*”.

Most key informants thought it was going to be a more grass roots approach, however the MOE constantly dictated restraints that could be used and the directions that SPC's were allowed to go. Also, from the municipality's perspective the implementation timelines were inconsequential, as it was still uncertain of what is expected of them for implementation. Unknowns regarding implementation funding still leaves uncertainties for how implementation will occur in practice. Ultimately, it was a very long and tedious process, where participant's felt like their "*hands were tied very tight*", with often changing technical rules. It was said by one key informant that, "I have never seen such a top down, locally led approach". Key informant's also believed that a greater review by the Province of the CWA was needed in order to clarify and potentially streamline roles and responsibilities. This would include a revisit and analysis of the roles of the SPC and the SPA.

Right Actors at the Table

All informants were impressed by the wealth of knowledge and expertise of the actors at the SPC table. It was generally felt the makeup of the SPC was beneficial for the planning process and that it helped the process to have the greatly dedicated members that made up the CSPPC. This was evident, as only one CSPPC member left the committee during the rigorous 5 year planning process and this was only due to a location change. CSPPC members noted a high level of commitment to the process. The CSPPC had great pride in their committee and the expertise on it. It was noted by one key informant that they would "*put their committee up against anyone's*".

It was noted as being invaluable to have industry, agriculture, municipal staff, local businesses and local community groups all working together toward one common goal. The collaboration between multiple stakeholders often fostered understandings of each other's role

and in turn created new partnerships. Trust and respect were cultivated during this process in the way that the committee was established. Also, it was said that the process built trust and bridges between the CSPC (the local community members) and the Ministry that didn't exist before the SWP process. It was explained working closely with the MOE Liaisons helped bridge gaps in previous provincial level legislation water policies.

It was mentioned that having a hired full time planner for the SWP work was beneficial. Furthermore, having a planner hired before the assessment report came out was important. Being hired early in the planning cycle gave the planner time to review the legislation and develop their approach, as well as effectively communicate and receive feedback about this approach by the SPC. Having the CA's planners organized and timely with their input and expertise ensured the SPC was comfortable with the process and the outputs (assessment reports, plans, etc).

It was found that there were also appropriate collaborations and consultations with other Provincial ministries and private actors. This included involvement from the Ministry of Natural Resources, Ministry of Transportation, Ministry of Municipal Affair and Housing, Technical Safety and Standards Authority and the Ministry of Consumer Standards for issues related to fuel storage. However, it was thought by several key informants that it would have been helpful to have more municipal planners and policy makers as part of the SPC. In addition, it was noted for the next round that the SPC would benefit from a greater range in ages of the participants at the table, including younger demographics.

It was mentioned by some informants who were on the SPC that creating constituent buy in was difficult. In some cases there was consensus around the SPC table but not within their own sectors table. However, others said the opposite. Particularly in the agricultural community

it was noted the representatives did an excellent job of speaking for the average farmer and bringing the necessary information both to the SPC meetings and back to their colleagues. Furthermore, municipalities felt that even if they did not agree with the decisions of the SPC, it was helpful having a representative “*in house*” that was able to speak intelligently on the process. This was also found for community groups. However, for the most part technical questions were directed towards the CA’s, and more specifically the project managers. From the municipal perspective the ability to liaison with the CA was important because, unlike the Provincial government, the CA’s knew the local context and politics.

The role of the SPA, who was the lead CA in each source protection area, was often brought up by key informants as ambiguous. From the SPC’s point of view, they did not understand why there were two bodies being established to oversee the assessment and planning work in each source protection area. The SPA believed that they should have been given a more active role in the process, rather than simply managing and supporting its progression. Also, as SPA boards are representatives of elected municipal councils, the SPA’s felt they should be directly engaged within the development of terms of reference, assessment reports and source protection plans before they are submitted for Provincial approval. It is evident that both the SPC’s and the SPA’s experienced confusion surrounding their relative roles and duties. It was recommended by both parties that the Ministry review, clarify and potentially revisit the roles and duties of each body.

Adequate Capacity

Generally, it was found that that there was adequate capacity for all stakeholders to make proper decisions and create the SPP’s. This included capacity in terms of financial resources for assessment reports, SPC meetings, public meetings, honorariums, travel, staffing, etc. As of

September 2012 the MOE has spent \$200M on the SWP planning process since 2006 (this number includes stewardship funding). This stable funding throughout the planning process made sure that the SPC's were not inhibited by fiscal constraints. There was adequate scientific data, especially considering the timelines that the consultants and staff were working under. However, key informants did mention that further studies may be required in the future and the MOE should be aware of this. It was found there was freely available technical capacity for any members of the process (SPC members, municipalities and the public) for the understanding of the technical information provided in the assessment reports and the SPP. The expertise of the CRCA staff was noted as being a positive factor for enhancing capacity. The tools and personnel were readily available to find answers to any question that arose.

A factor that came up that could have improved capacity would have been slightly longer timelines on certain stages of the process. There was little time for busy people to properly read assessment reports or even the final SPP. This was when trust in the committee members became very important. Restricted timelines was also noted by MOE as being a difficult part of the process, for reviewing the terms of reference and assessment reports. Furthermore, SPC meetings were often very long and tedious. It was mentioned improvements could have been made in how the information and educational sessions were conducted. For example, instead of three hour lecture style delivery of materials, it would have been preferred if material was given beforehand and SPC members would come to the sessions with questions. More creative techniques of adult learning needed to be employed. Also, it was mentioned more expertise could have been pulled in from nearby Universities and academics.

The biggest issue in regards to capacity was concerning not the SWP planning process, but the upcoming implementation of the plans. All key informants were in agreement that

funding for implementation was an unknown. The majority of respondents said they did not believe there would be adequate funding for municipalities for implementation, especially for smaller more rural municipalities. Funding for implementation was mentioned as the main reason for municipal opposition to the SPP for the CSPA. Even though Part IV of the CWA does state that the risk management official can charge fees to individual land owners for activities such as risk management and assessments or to do an inspection (MOE, 2006a), this leaves many other facets of implementation costs unknown. Both financial and technical aid will be needed with the new risk management officers, risk management plans and with outreach and education. Also, it is important that the Ontario Drinking Water Stewardship Program (ODWSP), which has assisted residents with upgrades to fuel tanks, septic systems and other items posing a risk to source waters, continues. Key informants stressed that if adequate funding from the Province is not provided for implementation, the SPP created will be ineffective and a waste of a significant amount of public money.

Open Flows of Communication & Mutual Learning

Communication and mutual learning was noted as being one of the most positive outcomes of the SWP process. Without open flows of communication, key informants believed the SWP planning process would have never worked. All CSPC members felt they were heard in the planning process and felt free to communicate their opinions. Everyone involved (municipalities, SPC members, liaisons, etc.) noted a very high amount of mutual learning from each other and from the various presentations and technical data presented to stakeholders. The technical data presented was communicated in a way so the average person could understand. It was said there was a great deal of learning and mutual respect at the table. For example it was

said by one key informant that, *“With the committee members there was a trust that you were going to get true answers and commitment. I didn’t think anyone had a secret agenda”*.

This process also improved communication between municipalities regarding source water protection. Municipalities felt as though they could call the Project Manager or CRCA staff with any question they had and knew they would get understandable and timely responses. Also, for the most part municipalities felt their contribution to data and local context was not only considered, but needed. The process increased the understanding of each sector’s role and the individual issues that each sector faces regarding SWP planning. Everyone in the process felt that they could communicate freely with each other and felt free to state their opinions or ask questions. All informants noted a higher level of communication across different sectors and levels of government due to their experience with SWP planning. More broadly, this process was also a learning experience for the MOE who traditionally had not approached policy planning as a locally led process.

Communication strategies directed towards the public were noted as needing to be improved. It was recommended by key informants that the MOE take an active and consistent leadership role in communicating the purpose and function of its SWP program to a range of audiences. For example, if there was one Provincial-scale communications strategy, other actors such as Conservation Ontario, individual CA’s and municipalities could then merge their local efforts with this broader strategy. This being said, the CSPC went above and beyond the legislated public consultation requirements for meetings, notices, etc.

It was noted by some informants that there could have been greater collaboration between adjoining SPC’s. It was speculated that this collaboration would have facilitated a greater sharing

of knowledge and wisdom on how to deal with shared difficulties such as opposing municipalities. In the CSPA there was a major conflict with a small municipality, despite the reaching out of the CSPC committee at an early stage in the process. This is an example where communication in itself without proper education and understanding of the rationale behind the SPC's decisions, did not improve relations.

Fairness

This research indicates that the SWP planning process was very fair. Firstly, the SPC members felt that their voice was heard and respected, no matter what sector they represented or their background expertise. The decision making process for the creation of the SPPs were very much based on consensus building. When disagreements did occur, often the group would go around the table and voice each individual's opinions and concerns. There was trust around the CSPC table that each member was working towards the same goal and truly believed in the process. Furthermore, it was a priority that all technical data was easily understandable, and that the overall plan could be read by the average reader. The SPP itself for the CSPA was also accompanied by an explanatory document to make it more accessible.

Everyone who wanted to have a chance to be part of the process and to have their opinion heard had ample chances to do so. The intent of the process was to be open and consultative. Overall there were twelve community roundtables, many public meetings for pre-consultation on draft policies with designated implementation bodies, Municipal staff level meetings, a forum, and presentations to municipal councils, Provincial staff level forums, consultation on the draft SPP with the public and designated implementation bodies, including five public meetings/open houses (CSPC, 2012c). Clearly, there was a genuine effort from the SPC and the SPA staff to involve their constituency. The CSPC even tried to entice the public to come to open houses by

having other speakers, such as a CBC radio host there to give a presentation about gardening. Other methods such as television appearances on local cable, media releases, the creation of a website and e-mail updates were aimed at engaging the public. Even though there was very low public interest in the process, if a concern was presented to the SPC, these comments were respected and strongly considered. At times, comments could not be acted upon as they fell out of the scope of the CWA. This was made clear and most comments that fell out of scope were included in a companion letter to the MOE with the submission of the SPP. Each decision made was to create policies that were, appropriate, effective and affordable to communities (CSPC, 2012c).

It was noted that fairness was sometimes absent in the process due to the lack of trust in municipalities and landowners/industry that not only the SPC developed, but the CWA encouraged. For example, the required documentation to potential landowners who may be impacted by the SPP was worded in a way that assumes guilt. Also, the key informants interviewed believed that different wording should have been used in the numerous letters sent to landowners during the assessment and planning stages. Instead of being accusatory with statements of “*drinking water threats*”, the letter should have been friendlier, explaining the basis of the study was for risk mitigation. Also, the number of letters sent to landowners was suggested to be reviewed in order to only send out the amount of letters that is necessary. An appropriate balance between transparency and efficiency needed to be found. It was thought the legislation and regulations should have encouraged incentives over punishments. Furthermore, limited timelines for the review of all technical data, assessment reports and the review of the draft SPP’s was noted as a negative in the process.

It was thought at times the CWA put decision makers in a “*straight jacket*” with no way to go outside of the parameters of the legislation, even when deemed locally relevant. This was seen in the CSPA with Miller Manor Apartments in the Township of Front of Yonge. The Miller Manor complex contains 17 units and is a County run retirement home. Due to the fact that these apartments were technically on a “municipal system” they were included as having significant threats in the SPP. The municipality and the SPA felt this was very unfair, as similar apartment buildings in the Township on their own water systems were not included in the SPP as requiring legally enforceable risk management requirements and infrastructure upgrades. It was hard to justify why these municipal apartments would require expensive updates and why just as risky water systems in the same town would not. The fairness issue of this debate also came up as a contention between the CSPC and the Cataraqui SPA. Also, a fairness issues which was predicted as becoming more prevalent as implementation begins is the question of who pays for what. This is emphasized by upstream/downstream conflicts, where downstream municipalities will benefit from upstream risk mitigation. Some believe that especially the more rural municipalities should be compensated by the urban municipalities with large tax bases for their good work up stream that mitigates health problems and water treatment costs downstream.

Common Benefit Evident

All key informants involved in the SWP process understood and believed in the goal of having safe drinking water and to do this by protecting water at the source. However, how to protect water at the source was up for debate. Though the process did suffer from a great deal of “*growing pains*”, it was the general consensus that the way SWP planning has been done under the CWA is a model process. The actors around the SPC table believed in the plan they made, considering the tools and scope they were given. It was explained by one key informant that

everyone on the CSPC was very “*professional and homey*”. After, over 50 meetings together they learned what made each other “*tick*” and developed an atmosphere of trust, respect and humour, where even when opinions differed the value and appreciation of the process was still evident.

Municipalities noted they did feel it was necessary for the Province to take the lead in legislating consistent policy for protecting water quality. This got municipalities’ to get beyond the concept of protecting source water to actually starting to assess the risk. However, municipalities often felt that the CWA was downloading from the Provincial government. Also, because there is still no guaranteed funding for implementation, many municipalities did not see a clear benefit for their town, especially if they currently have clean drinking water and SWP measures already in place. Another factor that shaped a feeling of common benefit of the SPP was municipalities’ relationships with the CA or the SPA. If municipalities had previous contentious relationships with the CA’s on any matter, then generally they were more resistant to the SPP’s, seeing them as the CA’s plan rather than the SPC’s plan. Furthermore, municipalities and some SPC members did feel that the CWA was less prescriptive than other Provincial level policies such as the Provincial Policy Statement, but was still too restrictive with rules and policies to be the locally driven approach they had originally envisioned.

The Walkerton water tragedy cost at least \$64.5 million and an estimated \$155 million, if human suffering was factored into the cost analysis (CBC, 2004). The SPC members, the SPA and the majority of municipalities’ understand the social, environmental and economic cost of a tragedy like Walkerton. Municipal actors do realize they benefit from a sharing of knowledge and technical information, such as those studies funded in the assessment report. However, it also seemed that larger municipalities, who have the tax base for implementation, are more

willing to adhere to the plans and share their own technical data with the SPC. Some municipalities' worry they do not have the necessary funds to enact SPP policies without significant hardship on their residents through raised taxes. This process will be seen as highly beneficial by all parties involved in the planning process if the necessary funds to at least help municipalities with the beginnings of implementation are provided.

Shared Ownership & Accountability

There was consensus from all key informants (including municipalities) that even though some changes could have been made to the planning process, the process itself was needed. The way SWP planning was done under the CWA was praised for having more local flavour and constituent buy in than other Provincial level policies in the past. It was noted that this process ensures that the key stakeholders understand why certain measures must be put into place, because they are part of the policy making process. In particular, the CSPP members were very committed and supportive of the decisions made in the SPP. Due to the lack of public interest in the process true acceptance of the plan from the average citizen is still unknown until implementation begins impacting the general public.

Municipalities had some conflicting opinions in regards to issues such as boundaries of urban areas, what municipal systems were assessed as being significant threats, the identification of drainage courses, transport pathways and who's role the risk management associated with mineral extraction is (the municipalities' or the Ministry of Northern Development and Mines). Not all municipalities and the necessary decision makers within those bodies have ownership of the plan. A factor impeding municipalities to accept ownership of the plans are, as previously stressed, the unknowns related to funding for implementation. The cost of implementation can be speculated as the main factor of opposition to the plan in communities such as Miller Manor

in the Township of Front of Yonge. However, the open dialogues between the municipalities and the SPA's and SPC's did help concerns to be addressed so ownership of the plan could be realized by the majority of municipalities in the CSPA.

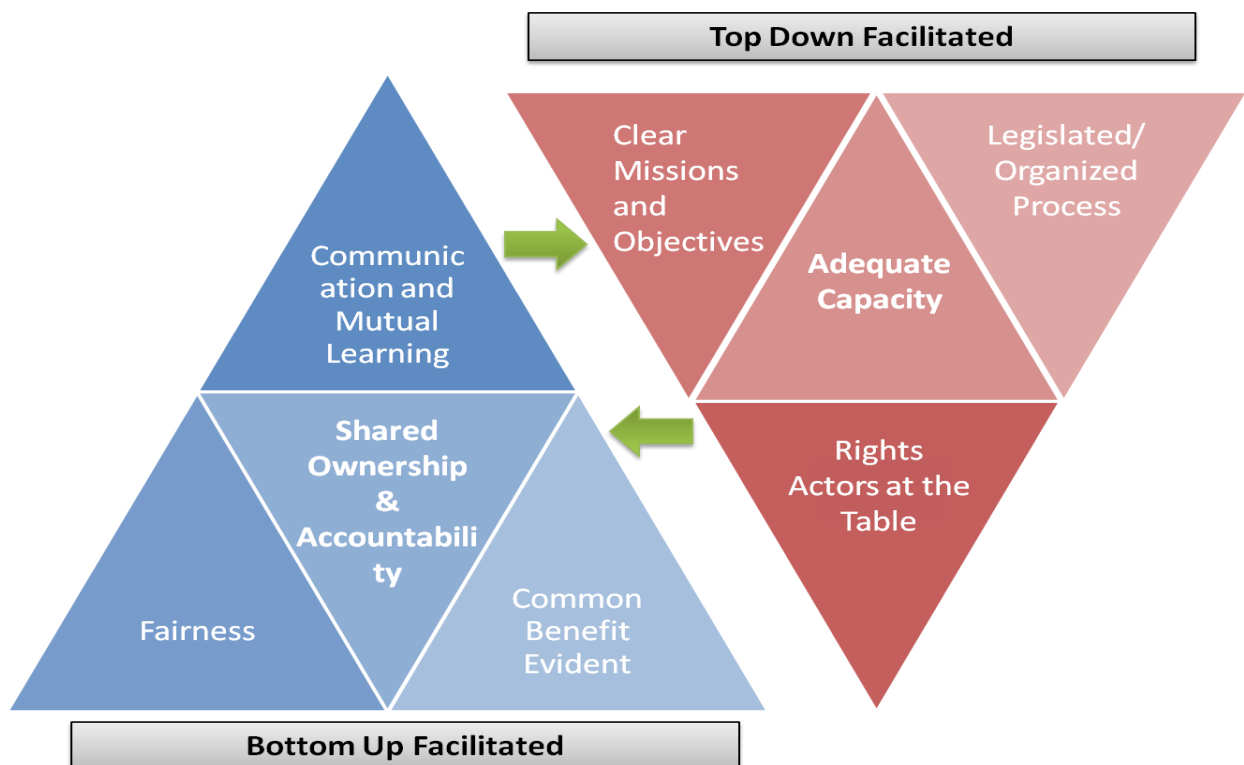
It was predicted that some municipalities will include the SPP recommendations in their upcoming Official Plan amendments but may not actively enforce those recommendations. This differs from the policies in the SPP surrounding the "significant threats" which are legally mandated to be enforced by municipalities. Ultimately, despite previously mentioned issues from municipalities, this process was noted by key informants as improving ownership and accountability. The fact that the process was legislated and resulted in enforceable and mandated implementation was beneficial. Furthermore, ownership and accountability was fostered due to the educational and participatory approach used to engage key stakeholders on why the created policies were needed.

Discussion

After careful analysis of the information gathered as well as the findings of this research project, it was found that many themes overlapped with each other and could not be looked at in an insular manner. Furthermore, it was found that certain themes were deemed stronger in the sense that that were more prevalent and more conducive to regional watershed collaborations. For example, many key informants noted loving and hating the fact that the SWP planning process was legislated. It was found that with many of the themes, there had to be the right balance. With the example of a legislated process being beneficial, the process has to allow the structure to facilitate planning and collaboration but must also allow flexibility for a truly local approach. It was found that watershed planning should be a top down, bottom up process. The

themes were found to be strengthened when balanced by the other themes explored. It became clear in the analysis stage that certain themes synchronize better with other themes. This led to the discovery that the themes explored can be grouped together as either being needed to be “top down facilitated” or “bottom up facilitated” factors to successful watershed collaborations. This means that the particular theme would be more effective if it was either initiated from local members of the watershed collaboration or from high level government actors of the collaboration. Then it was found that most themes feed into either factors related to "Shared Ownership and Accountability" (which is facilitated by actors at the local level of governance) or factors related to "Adequate Capacity" (which is facilitated by actors at the top level of governance, such as the Ministry of Environment). The relationships between the themes explored are summarized below in Figure 4.

Figure 4: Relationships Between Themes Explored



In the end all the themes explored were seen in the SWP planning process in Ontario as positive factors. The bottom up/top down approach was a very complicated and confusing process at times, but did prove thus far to be acknowledged as needed and appropriate for watershed collaboration and SWP planning. Having the explored themes present in one way or another in the SWP planning process created more integrated plans that addressed the interrelationships between issues (health, economic opportunities, environmental sustainability, etc). This approach also solved problems between the integration of water management within a broader framework of ecological management and action (NRTEE, 2011). For example, the regulations for municipal systems, building codes and permits going through the municipality or the CA are now easy to enforce throughout the CSPA, as it is clearly legislated. The process also recognizes that the risk management officer (the enforcer of the SPP's) cannot always be there to regulate the multitude of risks that need to be mitigated by private landowners and industry, or even municipalities, that could slip through the cracks of regular monitoring. That is why the emphasis in this plan of promoting the involvement of stakeholders is very important because the understanding and education of the plans aid in creating shared ownership and accountability.

Successes

Overall, the planning portion of the SWP planning process under the CWA was found to be very successful. The themes explored seemed to aid in most ways to the process. This proves the hypothesis of this research, that the claimed best practices for regional watershed collaborations in the literature were appropriate. As previously mentioned there has to be the correct balance of themes, such as having a fair and open process while also assembling the right actors at the decision making table (sometimes excluding certain players). At times some actors did not feel the regulations made in the SPP's were fair (i.e. issues with who pays for what in

small rural municipalities). However, at the end of the day if shared ownership is evident with the supporting factors of political, financial and social capacity, most municipalities were happy with the SPP in the CSPA.

Key informants did feel that there was trust built between the local community actors (both governmental and non-governmental) and the upper level provincial policy makers. The emphasis on local buy in and the money the Province contributed to this process was a clear recognition of the variance throughout the province and the importance for local solutions. Also, the focus on education for SPC members as well as the public was found to be a very beneficial and an important part of the planning process. For example, it is essential for farmer's to understand why they may need to alter their activities due to the regulations under the SPP's. If stakeholders such as farmers are involved early in the planning process they can work with the SPC's to understand what they need to do to mitigate risks, which creates local buy in. The fact that the process was legislated created a governance structure to begin the collaboration and increased feelings of ownership, by knowing the overall plan was going to be enacted and was important. Ultimately, more holistic policies were created by having the right expertise and personnel at the table combined with the needed education and technical data to understand all facets of the issue. The sharing of knowledge, data, expertise, findings and the draft policies opened lines of communication and spurred collaboration not only between municipalities and levels of governance, but also between the CA's themselves, as was noted in the CSPA case study, who worked with surrounding CA's on plans.

A sub-component of most themes explored was trust. Trust seemed to be something that contributed strongly to shared ownership and accountability, open flows of communication, fairness and a common benefit being evident. Though trust was not an official theme, because it

was so closely intertwined with many of the themes explored, it is clear that it was a highly beneficial outcome of the SWP planning process. The building of trust was a factor that was fostered under the CWA for the CSPA. It was noted that the trust that was created by working in a multi-governance collaborative environment has already begun to transcend watershed management into other regional collaboration issues and opportunities in the area. This is especially apparent in the relationship of public sector groups such as lake associations with their local municipal representatives.

Challenges

As hypothesized, a lot of the challenges found with the SWP planning process under the CWA, was due to the lack of certain themes. This was exemplified with the discontent of key informants with the changing scope and rules. Under the theme of legislated/organized process the rules and scope of the collaboration should have been solidified in the terms of reference stage of planning, to decrease uncertainties and increase legitimacy in the process. The backpedaling by the MOE in regards to scope, led to an inefficient use of time, which made an already arduous process even more frustrating for those involved. This impacted feelings of shared ownership of the plan as well as the sense of a common vision, as many SPC members envisioned the SPPs including Great Lakes protection and rural residents outside of municipal systems. Also, within a legislated framework, there must be a certain level of flexibility for the local bottom up players to be able to create a plan that is environmentally, socially and culturally relevant to their region. This was seen as not always the case under this first round of SWP planning. For example it was explained by one key informant, “...*we couldn't look at a tanker spilling on the St. Lawrence as a threat but if a cow is standing on the shore it is a threat. The two don't match in my mind*”. It was constantly mentioned that the technical rules of the plans

were more suitable for southwestern Ontario where it was felt the majority of technical rules were drafted.

Though the theme of the right actors at the table did occur for the most part in the sense of formally involving the right people, it did not help with engaging the public. A challenge of the SWP planning process was the lack of public interest. It was explained that the public's lack of interest in the planning process stemmed from an absence of a feeling of urgency about the issues. It has now been over 12 years since the tragedy in Walkerton, and the issue of clean water has become mute in the public's eyes if they are able to turn on their tap and receive clean drinking water. Furthermore, until the SPP's have been approved and start impacting land use regulations and private landowners, the general public will be unaware of the true implications of the CWA. SWP planning in the future needs to focus on how to improve strategies for meaningfully involving the general public.

It should also be acknowledged that just because representatives at the decision making table agree with each other, that does not mean the constituents the SPC members represent agrees with them. For example, this was clearly seen in the CSPA, with the strong opposition of certain municipalities concerning specific aspects of the SPP. In an ideal world, this opposition would have been prevented, if the consensus around the SPC table was in turn transformed to various represented parties. It was mentioned that if municipal planners, rather than politicians were present at the SPC table, greater buy in could have been achieved. Serious thought should be given to the issues of constituent buy in, and the focus on the members at the SPC table having a greater emphasis in consensus building amongst the sectors they represent. This will involve the members of the SPC's becoming more active in fostering the previously discussed bottom up led themes in relation to SWP planning with their own organizations and amongst

their own peers. These themes will mean SPC members themselves need to: improve communication and mutual learning amongst their sector; ensure fairness and equity in the planning process itself; make the argument of a common benefit of the process for their sector and address feelings of negativity towards the process. After these themes are addressed greater feelings and emphasis on shared ownership and accountability of stakeholders can be mentored by the SPC members. This added responsibility of ensuring constituent buy in of the SPP's by SPC members, may require a re-evaluation of the role of the SPC members, including having these positions being funded full time positions. This would ideally assist with workload issues concerning the demanding role of the SPC members being currently balanced with even more demanding full time jobs.

Furthermore, even though there was adequate capacity for the planning process, conflicts have already come up concerning adequate capacity for implementation. Issues of capacity for implementation (financial and technical) for municipalities need to be solved for this process to be successful.

Conclusion

The reality is watershed management is extremely difficult and encompasses struggles between politics, economic needs, human health and environmental protection. This research was mainly concerned with exploring not only best practices for watershed collaborations but also how to effectively translate these best practices into legislation and practice. The CSPA and the CSPC's experience with SWP planning under the CWA were explored. The best practices or "themes" explored in this research included: clear missions and objectives; a legislated process/organized structure; the right actors at the table; adequate capacity; open flows of

communication and mutual learning; fairness; a common benefit being evident; and shared ownership and accountability.

It was found that the themes were interrelated. It was discovered it was most effective in watershed collaborations when certain themes were facilitated or encouraged either by bottom level actors or by top level actors. This meant the bottom and the top forms of governance and government must work together. The themes found to be best when facilitated amongst the local level (bottom up) actors were: shared ownership and accountability; fairness; communication and mutual learning; and a common benefit being evident. The themes found to be more effective when facilitated by higher levels of government (the top) were: adequate capacity; rights actors at the table; legislated/organized process; and clear missions and objectives. The most dominant themes that were found to encompass as well as rely on the other themes explored were shared ownership and accountability (bottom up facilitated) and adequate capacity (top down facilitated). The interrelationships of these themes are displayed above in Figure 4 located on page 62.

The original question being asked with this research and the CSPA case study was did the CWA provide an opportunity where separate jurisdictions could work together in a regional watershed collaboration? The answer to this question is yes. The CWA utilized all the themes explored to varying degrees to create a venue where integrated SWP policies were made both inter-jurisdictionally and with the equal input of key stakeholders and multi-levels of governance. The SWP planning process increased communication, education and the level of collaboration on a watershed level for all participants involved. The planning process was praised for combining technical scientific knowledge with traditional local knowledge.

All key informants agreed that watershed planning was a very complex process, but was needed. There was consensus amongst key informants that the approach required under the CWA was appropriate, yet needed some important re-vamping. MOE is well aware of the improvements that need to be made and are currently doing formal evaluations to enhance the planning process. The main improvements requiring attention found from this research include: more local input in what can be defined as a “significant threat”; the clear identification of scope, rules and responsibilities of all participants; the creation of more innovative ways to engage the public; the inclusion of municipal planners at the SPC table; and continued funding for stewardship and implementation. Re-evaluation on how SPC members can meaningfully convert their constituents needs to also be explored. Furthermore, scope of who benefits from the CWA needs to expand to include those residents on private wells and other marginalized areas such as First Nation communities, who are not on municipal systems.

In the end you must have good leadership coming from the top, but flexibility within that structure to allow for adaptive planning. This involves regularly re-evaluating the plans made to adapt like an ecosystem and evolve depending on the ecological systems, cultural heritage, social relationships and political history and reality of the regional and local context. Furthermore, watershed management requires a “systems” approach where the linkages between the social, economic and environmental are recognized. The fact is, water scarcity can inhibit economic growth and undermine quality of human and natural life (Draper, 2012). Ultimately, the old adage of an “ounce of prevention is worth a pound of cure” should be adopted in watershed management and SWP planning collaborations. The ecological goods and services that watersheds and the natural environments in general provide have to be realized and be part of the cost benefit analysis of Provincial and Federal budgetary allocations. An example of systems

thinking is exemplified in New York, when New York City decided to invest US\$1.5Billion restoring ecosystem services in the Catskill Watershed instead of building a new water filtration plant which would cost between US\$8-10Billion (IISD, 2012). This decision recognized the link between upstream communities and ecosystems and the impact they can have on downstream water supplies and purification costs. The same approach needs to be further recognized in Ontario by making funding for the implementation of the SPP's a priority.

In conclusion, watershed collaborations such as what is required under the CWA is often overwhelmingly intricate and problematic for the policy makers and jurisdictions involved. The CWA has been particularly complicated as it was a very different policy approach than taken in the past by the MOE. However, if a regional watershed approach is not used, and upstream and downstream communities do not create ways to properly work together on water related issues, the health of watersheds as well as humans will be in jeopardy. Without proper management, negative impacts of unhealthy watersheds will be a reality in the short term in relation to source water and clean drinking water supplies. In addition, in the long term, proper watershed management is critical when planning for issues related to water scarcity and climate change, which are estimated to be the most important natural resource challenges of the 21st century (Draper, 2012). The fact is water is a necessity for human life. An understanding on how jurisdictions and key stakeholders can improve collaborations will prove to be invaluable for sustainably planning for the needs of present and future generations.

Recommendations and Issues to Be Addressed

There are many facets of this research that would have benefitted from further exploration. However, due to the scope, parameters, resources and time limitations of this research project, many interesting aspects of this research were not investigated. Firstly, as mentioned this research could have been altered depending on the source protection area in Ontario that was chosen. In the future, it is recommended that similar research be done as a comparative study across two or more source protection areas. This would include source protection areas that contained First Nation representation, which would have added another dimension to this research. Furthermore, with the SWP planning process it was found that there was very low public interest, and at best mild interest on behalf of the municipalities, unless in regards to costs of implementation. More research needs to be done on how to meaningfully engage the public in policy development, to ultimately create better, more accountable stakeholders.

Often it was found that positive factors of the SWP planning process was having individuals on the SPC that were easy to work with and whose own personal network of watershed governance contacts expanded far beyond the SPC's. More exploration on how informal relationships and social capital impact watershed partnerships should be conducted. This further research would build on issues of trust and shared ownership and accountability of the SPP's that were already explored in this paper's research.

Due to the timing of this research, the impacts of implementation were not available. After implementation is required, following the approval of the SPP's by the Minister of the MOE, more research needs to be conducted related to adequate capacity. It was said by many key informants that the success of this research relied heavily on implementation and if it will be

feasible, especially by small rural municipalities. How implementation occurs and with what funding will be very fascinating to watch. Furthermore, what will occur in the next planning cycle of the CWA and with proposed complementing legislation such as the proposed Great Lakes Protection legislation, will be an important research area for policy makers, academia, watershed professionals and even the general public. The effectiveness of these policies and how accurately further SWP planning in Ontario adheres to the watershed management best practices and themes discussed in this paper will be an increasingly timely area of study as drinking water scarcity and the negative effects of climate change on water supplies become even more prevalent issues.

References

- Bakker, K. & Cook, C. (2011). Water Governance in Canada: Innovation and Fragmentation. *International Journal of Water Resources Development*, 27(2), 275-289.
- Bogason, P. & Zølner, M. (2007). *Methods in democratic network governance*. In Bogason P., Zølner M., (Eds.), Houndmills England ; New York: Palgrave Macmillan.
- Boutkan, E., & Stikker, A. (2004). Enhanced water resource base for sustainable integrated water resource management. *Natural Resources Forum*, 28(2), 150-154.
- Bulkeley, H. (2005). Reconfiguring environmental governance: towards a politics of scales and networks. *Political Geography*, 24 (8), 875-902.
- Cataraqui Source Protection Committee (CSPC). (2012a). *Cataraqui Source Protection Plan*. Retrieved October 4, 2012, from <http://www.cleanwatercataraqui.ca/publications/SourceProtectionPlan/sourceprotectionplanjune2012webCOMP.pdf>
- Cataraqui Source Protection Committee (CSPC). (2012b). *Proposed Source Protection Plan - Executive Summary*. Retrieved October 4, 2012, from <http://www.cleanwatercataraqui.ca/policySummary.html>
- Cataraqui Source Protection Committee (CSPC). (2012c). *Explanatory Document for the Source Protection Plan*. Retrieved September 8, from, <http://www.cleanwatercataraqui.ca/publications/SourceProtectionPlan/ExplanatoryDocumentJune4.pdf>
- Cataraqui Source Protection Committee (CSPC). (2011). *Cataraqui Source Protection Area Amended Proposed Assessment Report*. Retrieved July 31, 2012, from <http://www.cleanwatercataraqui.ca/assessmentReport.html>
- Cataraqui Source Protection Committee (CSPC). (2009). *Terms of Reference for the Preparation of an Assessment Report and a Source Protection Plan: Cataraqui Source Protection Area*. Retrieved July 15, 2012, from <http://www.cleanwatercataraqui.ca/publications/CataraquiApprovedToRMay2009.pdf>
- CBC. (2004). *Canada's worst-ever E. coli contamination*. Retrieved November 1, 2012, from, <http://www.cbc.ca/news/background/walkerton/>
- Christensen, R. (2011). *Waterproof 3- Canada's Drinking Water Report Card*. *Ecojustice*. Retrieved September 10, 2012, from http://www.ecojustice.ca/files/updated-full-waterproof/at_download/file

- Conservation Ontario. (2009). *Clean Water Act Timelines*. Retrieved November 18, 2012, from http://www.conservation-ontario.on.ca/source_protection/files/ODWSP%202009%20Finals/ODWSP_timeline_EN_2009_02_27_WEB.pdf
- Creswell, J.W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (3rd ed.). Thousand Oaks, Calif.: SAGE.
- de Boer, C. & Bressers, H. (2011). *Complex and dynamic implementation processes: the renaturalization of the Dutch Regge River*. University of Twente, in collaboration with the Dutch Water Governance Centre, Enschede, the Netherlands.
- de Loë, R. C., & Kreutzwiser, R. D. (2005). Closing the groundwater protection implementation gap. *Geoforum*, 36(2), 241-256.
- Draper, S. E. (2012). Transboundary Water Sharing: Confronting . In W.M. Grayman, D.P. Loucks, & L. Saito (Eds.), *Toward a Sustainable Water Future: Vision for 2050* (pp. 46-55). Reston, Virginia: American Society of Civil Engineers.
- Elias, A., Cavana, R., & Jackson, L. (2002). Stakeholder Analysis for R&D Project Management. *R&D Management*, 32 (4), 301-310.
- Ferreira, C., de Loë, R. C., & Kreutzwiser, R. D. (2008). Imagined communities, contested watersheds: Challenges to integrated water resources management in agricultural areas. *Journal of Rural Studies*, 24(3), 304-321.
- FitzGibbon, J. (n.d.). *Watershed Collaboration with Multiple Jurisdictions and Stakeholders: Lessons Learned*. Guelph, ON: University of Guelph, School of Environmental Design and Rural Development.
- Friedman, K. B. & Foster, K.A. (2011). Environmental Collaboration: Lessons Learned About Cross-Boundary Collaboration. *IBM Center for The Business of Government*. Retrieved July 2, 2012, from, <http://www.businessofgovernment.org/sites/default/files/Environmental%20Collaboration.pdf>
- Gibbs, D. & Jonas, A. (2001). Rescaling and regional governance: the English Regional Development Agencies and the environment. *Environment and Planning C: Government and Policy*, 19(2), 269 – 288.
- Gibbs, D., Jonas, A. & While, A. (2002). Changing governance structures and the environment: economy-environment relations at the local and regional scales. *Journal of Environmental Policy and Planning*, 4(2), 123-138.
- Gibbs, M. T. (2008). Network governance in fisheries. *Marine Policy*, 32(1), 113-119.

- Grayman, W.M., Loucks, D.P. & Saito, L. (2012). Our Collective Vision. In W.M. Grayman, D.P. Loucks, & L. Saito (Eds.), *Toward a Sustainable Water Future: Vision for 2050* (pp. 365-382). Reston, Virginia: American Society of Civil Engineers.
- Grigg, N.S. (2012). Integrated Water Management in 2050: Institutional and Governance Challenges. In W.M. Grayman, D.P. Loucks, & L. Saito (Eds.), *Toward a Sustainable Water Future: Vision for 2050* (pp. 66-75). Reston, Virginia: American Society of Civil Engineers.
- Hardy, S. D., & Koontz, T. M. (2009). Rules for collaboration: Institutional analysis of group membership and levels of action in watershed partnerships. *Policy Studies Journal*, 37(3), 393-414.
- Hettne, B. (2005). Beyond the “New Regionalism”. *New Political Economy*, 10 (4), 543-571.
- Himmelman, A. T. (2001). On coalitions and the transformation of power relations: Collaborative betterment and collaborative empowerment. *American Journal of Community Psychology*, 29(2), 277-284.
- Himmelman, A.T. (1996) . On the Theory and Practice of Transformational Collaboration: From Social Service to Social Justice . In C. Huxham (Ed), *Creating Collaborative Advantage*, 19 – 43 . Thousand Oaks, CA : Sage Publications.
- Hirokawa, K.H. (2011). Driving Local Governments to Watershed Governance (September 12, 2011). Albany Law School Research Paper No. 23 of 2011-2012. Retrieved May 3, 2012, from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1926393
- Hudson, R. (2010). Resilient regions in an uncertain world: wishful thinking or a practical reality? *Cambridge Journal of Regions, Economy and Society*, 3, 11–25.
- International Institute for Sustainable Development (IISD). (2012). *Ecohealth: Health, Well-Being and Watersheds*. Retrieved November 7, 2012, from http://www.iisd.org/pdf/2012/brochure_ecohealth.pdf
- Ivey, J. L., de Loë, R. C., & Kreutzwiser, R. D. (2006). Planning for source water protection in Ontario. *Applied Geography*, 26(3–4), 192-209.
- Lockwood, M., Davidson, J., Curtis, A., Stratford, E., & Griffith, R. (2009). Multi-level Environmental Governance: lessons from Australian natural resource management. *Australian Geographer*, 40(2), 169-186.
- Lockwood, M. & Davidson, J. (2010). Environmental governance and the hybrid regime of Australian natural resource management. *Geoforum*, 41(3), 388-398.

- Lubell, M., & Lippert, L. (2011). Integrated regional water management: A study of collaboration or water politics-as-usual in California, USA. *International Review of Administrative Sciences*, 77(1), 76-100.
- McClenaghan, T. (2006). In Ginsburg J., Canadian Environmental Law Association. and Ontario.Ministry of the Environment. (Eds.), *Clean water act, 2005 : Comments and recommendations regarding the proposed matters to be addressed in regulations : Submissions of the canadian environmental law association to the ministry of the environment regarding EBR registry no. RA05E0022*. Toronto, ON: Canadian Environmental Law Association.
- McKinney, M., & Johnson, S. (2009). *Working across boundaries : People, nature, and regions*. Cambridge, Mass.: Lincoln Institute of Land Policy.
- McPhail, A. (2012). CATARAQUI SOURCE PROTECTION AUTHORITY COMMENTS: PROPOSED SOURCE PROTECTION PLAN. Kingston, ON: *Compliments of the CSPA*.
- Means, E.G. (2012). Water 2050: Attributes of Sustainable Water Supply Development. In W.M. Grayman, D.P. Loucks, & L. Saito (Eds.), *Toward a Sustainable Water Future: Vision for 2050* (pp. 117-125). Reston, Virginia: American Society of Civil Engineers.
- Medd, W. & Marvin, S. (2008). Making water work: intermediating between regional strategy and local practice. *Environment and Planning D: Society and Space*, 26(2), 280 – 299.
- Ministry of Environment (MOE). (2006a). *Clean Water Act, 2006* (S.O. 2006, CHAPTER 22). Toronto, ON: Queen's Printer. Retrieved February 9, 2011, from http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_06c22_e.htm
- Ministry of Environment (MOE). (2006b). *The Clean Water Act 2006 : Promoting municipal awareness and understanding*. In Ontario. Ministry of the Environment. (Ed.), Toronto, ON: Ministry of the Environment.
- Ministry of Environment (MOE). (2007). Roles and Responsibilities for the Clean Water Act, 2006. Queen's Printer: Ontario, Canada. Retrieved June 2, 2012, from http://www.catararegion.on.ca/management/pop_up/cwact_rolesandresponsibilities.pdf
- Ministry of Environment (MOE). (2008). *Clean Water Act: Myths and Facts*. Toronto: Ministry of the Environment. Retrieved April 1, 2012 from, http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/std01_079831.pdf

- Ministry of Environment. (2009). *Source Protection Plans under the Clean Water Act, 2006*. Queen's Printer: Ontario, Canada. Retrieved June 10, 2012, from <http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTA2NjQ4&statusId=MTYwMDA4&language=en>
- Ministry of Environment (MOE). (2010a). *Ontario Drinking Water Stewardship Program Interim Progress Report (2007-2010)*. Toronto, ON: Ministry of the Environment. Retrieved April 2, 2011, from http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/stdprod_080910.pdf
- Ministry of Environment (MOE). (2010b). *Technical Bulletin: Threats Assessment and Issues Evaluation*. Retrieved December 13, 2012, from http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/std01_079532.pdf
- Ministry of Environment (MOE). (2011). *ONTARIO REGULATION 287/07- GENERAL*. Retrieved December 12, 2012, from http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_070287_e.htm
- Ministry of Environment (MOE). 2012. *Proposed Great Lakes Protection Act*. Retrieved September 8, 2012, from www.ene.gov.on.ca/environment/en/subject/great_lakes/STDPROD_096895.html
- Mitchell, B. (2005). Integrated water resource management, institutional arrangements, and land-use planning. *Environment and Planning A*, 37(8), 1335-1352.
- Morrison, T.H. (2007). Multiscalar Governance and Regional Environmental Management in Australia. *Space and Polity*, 11(3), 227-241.
- Murray, D. & Roth, A.P. (2012). Review of Options for Evaluating Policies Created for Source Protection Planning in Ontario . Waterloo, ON: *Water Policy and Governance Group*, University of Waterloo. Retrieved September 8, 2012, from <http://www.governanceforwater.ca/sites/default/files/Murray%20and%20Roth%202012%20for%20Conservation%20Ontario.pdf>
- National Round Table on the Environment and the Economy (NRTEE). (2011). *Charting a Course – Chapter 7: Collaborative Water Governance*. Retrieved October 19, 2012, from <http://nrtee-trnee.ca/charting-a-course-chapter-7-collaborative-water-governance>
- Norman, E.S. & Bakker, K. (2009). Transgressing Scales: Water Governance Across the Canada–U.S. Borderland. *Annals of the Association of American Geographers*, 99(1), 99-117.

- Norris, D.F. (2001). Prospects for Regional Governance Under the New Regionalism. *Journal of Urban Affairs*, 23(5), 557-571.
- OECD. (2011). *Water Governance in OECD Countries: A Multi-level Approach*. Retrieved February 9, 2011, from <http://www.oecd.org/gov/regionaldevelopment/48885867.pdf>
- Peterson, A. Walker, M., Maher, M., Hoverman, S. & Eberhard, R. (2010). New Regionalism and Planning for Water Quality Improvement in the Great Barrier Reef, Australia. *Geographical Research*, 48(3), 297-313.
- Peterson, A., McAlpine, C., Ward, D. & Rayner, S. (2007). New regionalism and nature conservation: Lessons from South East Queensland, Australia. *Landscape and Urban Planning*, 82, 132-44.
- Rang, S. (2009). *Protecting the Great lakes-St. Lawrence river basin and drinking water source*. Toronto, ON: Canadian Environmental Law Association, Environmental Defence and Pollution Watch.
- Rathwell, K. J., and G. D. Peterson. 2012. Connecting social networks with ecosystem services for watershed governance: a social-ecological network perspective highlights the critical role of bridging organizations. *Ecology and Society* 17(2), 24.
- Reimold, R.J. (1998). *Watershed Management: Practice, Policies, and Coordination*. New York, New York: McGraw-Hill.
- Robins, G., Bates, L., & Pattison, P. (2011). Network Governance And Environmental Management: Conflict And Cooperation. *Public Administration*, 89(4), 1293-1313.
- Sabatier, P.A., Focht, W., Lubell, M., Trachtenberg, Z, Vedlitz, A. & Matlock, M. (2005). *Swimming Upstream: Collaborative Approaches to Watershed Management*. Cambridge, MA: The MIT Press.
- Savitch, H.V. & Vogel, R.K. (2000). Paths to New Regionalism. *State & Local Government Review*, 32 (3), 158-168.
- Shamir, U. & Howard, C. (2012). Water Management in 2050. In W.M. Grayman, D.P. Loucks, & L. Saito (Eds.), *Toward a Sustainable Water Future: Vision for 2050* (pp. 37-45). Reston, Virginia: American Society of Civil Engineers.
- Shrubsole, D. (1996). Ontario conservation authorities: Principles, practice and challenges 50 years later. *Applied Geography*, 16(4), 319-335.
- Stein, C., Ernstson, H., & Barron, J. (2011). A social network approach to analyzing water governance: The case of the mkindo catchment, tanzania. *Physics and Chemistry of the Earth*, 36(14-15), 1085-1092.

- Thomson, A. M., Perry, J. L., & Miller, T. K. (2009). Conceptualizing and measuring collaboration. *Journal of Public Administration Research and Theory*, 19(1), 23–56.
- Tindal, C.R. & Tindal, S. (2009). *Local Government in Canada* (7 ed.). Toronto, ON: Nelson Education.
- Trachtenberg, Z., & Focht, W. (2005). Legitimacy and Watershed Collaborations: The Role of Public Participation. In P. A. Sabatier, W. Focht, M. Lubell, Z. Trachtenberg, A. Vedlitz & M. Matlock (Eds.), *Swimming Upstream: Collaborative Approaches to Watershed Management*. Cambridge: The MIT Press.
- Velaniskis, J. (2010). *Source Water Protection in Ontario: Through the Lens of Political Legitimacy*. Guelph, ON: University of Guelph.
- Viessman, W. & Schilling, K. (1986). *Social and Environmental Objectives in Water Resources Planning and Management*. New York, New York: American Society of Civil Engineers.
- Vodden, K.M. (2009). *News Spaces, Ancient Places: Collaborative Governance and Sustainable Development in Canada's Coastal Regions*. Vancouver, BC: Simon Fraser University.
- Wallace, G. (2011-2012). Reports to Council. Kingston, ON: City of Kingston.
- Wheeler, S.M. (2002). The New Regionalism: Key Characteristics of an Emerging Movement. *Journal of the American Planning Association*, 68(3), 267-278.
- Williamson, J. (2012). CONTINUOUS IMPROVEMENT TO ONTARIO'S DRINKING WATER SOURCE PROTECTION PROGRAM. Kingston, ON: *Compliments of the CSPA*.
- Yin, R. K. (1981). The case study crisis: Some answers. *Administrative Science Quarterly*, 26(1), 58-65.
- Yin, R. K. (1989). *Case Study Research: Design and Methods*. Newbury Park: Sage Publications.