

Ontario's *Clean Water Act* and Implications for Rural Serviced Municipalities

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Executive Summary

The *Clean Water Act* in Ontario was instituted after the Walkerton tragedy, as part of the suite of recommendations made by Justice O'Connor in the *Walkerton Inquiry* (Baird, Plummer, Morris, Mitchell, & Rathwell, 2014; de Loë, Murray, Michaels, & Plummer, 2016; O'Connor, 2002). During the Walkerton tragedy seven people died and 2300 became seriously ill due to a contaminated municipal water supply (de Loë et al., 2016; Livernois, 2002). Under the *Clean Water Act* source protection committees (with a wide range of stakeholders) created source protection plans on a watershed basis, with the assistance of the source protection authorities (conservation authorities), and the Ministry of the Environment and Climate Change (who led and has overseen the entire process) (Ministry of Environment and Climate Change, 2017; Ontario Ministry of Environment, 2006). Using a capacity framework (see page 2), this knowledge brief outlines the findings of research conducted in order to evaluate implications of the *Clean Water Act* for rural serviced municipalities (i.e. municipalities with municipally operated drinking water systems).

It was found through this research that the process under the *Clean Water Act* did improve capacity for source water protection in the serviced municipalities who were involved in the planning process and are impacted by the source protection plans. The most prominent challenges with the process under the *Clean Water Act* were a lack of: flexibility for local circumstance when assessing what can be a binding policy in the source protection plans; effective engagement of First Nations; effective engagement of the general public; and sustainable funding for implementation and needed human resources due to diminished provincial government support. The findings of this research highlight that source water protection in rural areas need: the commitment of the local level (e.g., decision makers, municipal staff, local health units, residents, watershed users) to source water protection; mandatory and enforceable legislation; sustainable municipal financial frameworks and provincial funding for source water protection planning and ongoing implementation; and technical assistance, particularly at the regional level.

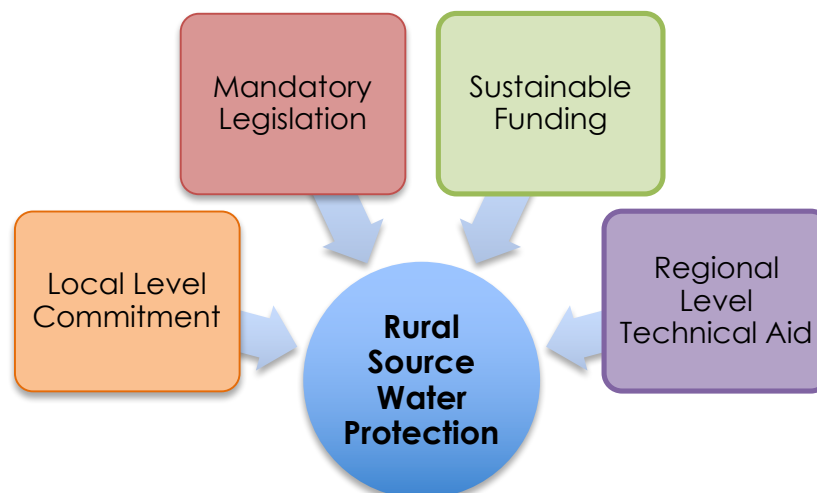


Figure 1: Factors Needed for Rural Source Water Protection

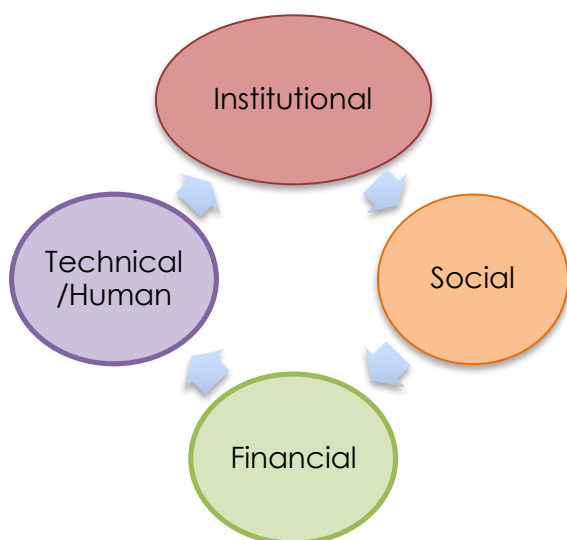


Figure 2: Elements of Capacity for Source Water Protection

Why is this Important?

Source water protection is an important first barrier to ensuring drinking water safety (de Loë et al., 2016; Hrudey, Payment, Huck, Gillham, & Hrudey, 2003). Source water protection refers to the protection of the surface and groundwater supplies that are used for drinking water (Ivey, de Loë, Kreutzwiser, & Ferreyra, 2006). Not only is source water protection beneficial to the environment and safety of drinking water, it is also economically advantageous. For example, remediation efforts after a contamination has already taken place can cost 30 to 40 times more than preventative source water protection programs, with costs rising to as much as 700 times more costly in rural areas (Simpson & de Loë, 2014).

In many rural communities across Canada, there are capacity related constraints that impede their ability to adequately implement source water protection (Kot, Castleden, & Gagnon, 2011; Minnes & Vodden, 2017; Patrick, 2011). Elements of capacity for source water protection include: social (e.g., networks, social norms), technical/human (e.g., data available, skilled human resources), financial (e.g., funding for source water protection plans and ongoing implementation), and institutional (e.g., legislation, governance structures) (Ivey et al., 2006; Minnes, 2017; Noble & Basnet, 2015; Rawlyk & Patrick, 2013; Robins, 2008; Timmer, de Loë, & Kreutzwiser, 2007). In order to improve the ability of rural communities to adequately implement source water protection measures, systems must be in place to build and maintain capacity for source water protection.

Challenges and Successes with the Clean Water Act for Rural Areas

Findings from this research conclude that capacity for source water protection was built in rural municipalities located in the two case study regions (the Cataraqui Source Protection Area and the North Bay- Mattawa Source Protection Area). The program was of particular benefit for those rural municipalities who previously lacked the internal capacity to conduct many of the assessment activities and a venue to discuss source water protection at the watershed/regional level. However, there were both challenges and successes revealed regarding the process under the *Clean Water Act* that are summarized below in Table 1 according to the element of capacity for source water protection that it corresponds with.

Table 1: Key Findings- Capacity for Source Water Protection and Ontario's *Clean Water Act* (Minnes, 2017)

Element of Capacity	Challenge	Success
Institutional	<ul style="list-style-type: none"> Not enough flexibility for locally relevant concerns (e.g., Great Lakes, private well clusters, pipelines). Lack of involvement of First Nation communities' in source protection committees and plans (there was indication by key informants this is being looked into). The exclusion of certain communities from the mandatory protection of the <i>Clean Water Act</i> (e.g., private drinking water systems). Program and technical guidelines were not fully scoped resulting in inefficiencies, frustrations, and an overall very lengthy process. 	<ul style="list-style-type: none"> Creation of mandatory and enforceable legislation. Creation of a clear governance structure and delineation of implementation responsibilities.

Challenges and Successes Continued...

Element of Capacity	Challenge	Success
Financial	<ul style="list-style-type: none"> Ongoing implementation, monitoring and evaluation funding from the provincial government is unknown. This impacted some decisions made in source protection plans (i.e., inclusion of private well clusters, policies requiring risk management officials). Financial ownership of the program is lacking at the municipal level, especially in rural municipalities. Diminishing provincial funding has resulted in a loss of human capacity at the conservation authorities. 	<ul style="list-style-type: none"> Over \$250 million of provincial funding provided to the program and related activities (Ministry of Environment and Climate Change, 2017).
Social	<ul style="list-style-type: none"> Understanding of the need for source water protection and drinking water in general was variable in both regions. Better engagement techniques are required that address barriers to involvement (e.g. long distances to travel to events, lack of an understanding of the technical material, rural residents' aversion to regulation and land use restrictions). 	<ul style="list-style-type: none"> Process provided educational opportunities to the public as well as municipal staff and elected officials, increasing awareness about source water protection. Process convened a diverse range of stakeholders together on the source protection committee, creating new networks for communication and data sharing.
Technical/Human	<ul style="list-style-type: none"> Some municipal staff and elected officials do not have the expertise to understand the need for source water protection, making re-education programs with every election cycle imperative. There were some issues with the technical guidelines (e.g., Tables of Drinking Water Threats, vulnerability ratings, and capture zone delineations). As provincial funding declines so does the maintenance of technical/human capacity. The lack of guaranteed future funding for continual evaluation and monitoring of local circumstance is a concern. Particularly, in order to keep data and policies up to date in regard to current and future threats. 	<ul style="list-style-type: none"> Data created and shared during the creation of the assessment reports, increased technical capacity, especially for rural municipalities. Human capacity for source water protection efforts increased at the conservation authorities and some municipalities. The provincial government and conservation authorities provided technical support to municipalities, aiding in creating understanding about reasons for source water protection and their role in implementation. Technical capacity was raised for those on the source protection committees via educational resources, presentations and co-learning.

Recommendations

The main recommendations from this research are:

- As upper level governments download responsibilities to municipal levels, funding frameworks need to be considered. Realistic fiscal frameworks should be created between provincial and municipal bodies to sustain source water protection efforts (including up to date data, further source protection plan updates, expert human resources at the municipal and/or conservation authority levels, ongoing monitoring and evaluation, data sharing networks, and public outreach efforts). Regional collaborations could offer value in this matter.
- Further work needs to be done to create better ways to specifically engage First Nations in the process,
- Fostering better public engagement in the source water protection process is needed. Help from non-governmental organizations in engagement efforts could aid in diversifying engagement techniques and participating audiences.
- Further research needs to be done on appropriate ways to include other systems (e.g. private drinking water well clusters) into the *Clean Water Act*.
- It was suggested by research participants that if other rural areas in Canada were to consider a process similar to that under the *Clean Water Act*, they should carefully consider what aspects would make sense for their local context.

The Research Project and Next Steps

This research is part of an Interdisciplinary PhD dissertation exploring the role of governance and capacity building in source water protection for rural regions. This research has employed a case study approach using two source protection areas in Ontario (the Cataraqui Source Protection Area and the North Bay-Mattawa Source Protection Area). Field research began for this project in March of 2016 and data collection has now ended. Data collection consisted of a total of 30 key informant interviews in the case study regions and provincially, using a semi-structured interview guide. Further literature review, legislation review, document review, and meetings to discuss findings with a select number of key informants were also conducted. Analysis is currently underway for two further peer-reviewed papers that will result from this research on the following subjects:

- Capacity for source water protection in Ontario for unserved rural areas
- Collaborative watershed governance and Ontario's *Clean Water Act*

Knowledge briefs will be created for each paper and disseminated to key informants and other experts in the field for feedback. These papers, as well as a complete literature review on the subject matter and final conclusions, will be combined in a final doctoral dissertation. This will be finalized by summer of 2018.

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