



Metropolitan Water Governance in Toronto: Policy by Default or Design?

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Outline

- Objectives and Questions
- Why Water?
- Fragmentation of Regional Governance in the GTA ?
- Source Water Protection and the Clean Water Act (2006)
- How is Source Water Protection governance configured in the Greater Toronto Area?
- Achievements & Problems
- Implications

Objectives

- To describe and analyze water governance in the Greater Toronto Area. What do current arrangements on water tell us about regional co-operation?
- Policy Change by design or default? Was the creation of the Clean Water Act in 2006 purely a reaction to the Walkerton crisis, or does it represent a new trend in regional co-operation for water issues?

Questions

- How has regional cooperation among the various municipalities worked in the drafting of the Source Water Protection Plans required under the Clean Water Act?
- What is the rationale for the present boundaries of the Toronto source water protection region?
- Will local source water protection help integrate concerns with risk and over extraction of water in the Lake Ontario watershed?

Methodology

- Review of submissions by 25 municipalities in the Toronto Region to the Source Water Protection Committee during consultations over the Draft Plan
- Analyzed using Nvivo (qualitative software) and focused on the categories of various objections presented by municipalities to the rules that were drafted during initial consultations
- Cartographic data

Why Water ?

- A narrow economic view of water does not provide insights
- Studying water is ideal for researching **collective action** or its lack in large metropolitan settings
- The physical properties of water make everyday management and co-operation challenging and cumbersome
- However, as with other public goods, incentives remain important in water conservation and risk management, but developing effective rules on access are more crucial

Public Goods Dilemmas: Fragmentation in the GTA

- Fragmentation of metropolitan governance a widely acknowledged problem in Urban Economics, Political Science and Geography
- Lack of coordination
- Present in other public services though some are increasingly coordinated by direct and voluntary agreements between various cities or regional co-operation (e.g. transportation and emergency services; only regional agency is Metrolinx)
- Water Management in the GTA : Jurisdictional Fragmentation

How does the Province play a role in Regional Governance?

- Limiting growth and outward expansion into ecologically sensitive areas through legislation
- Providing infrastructure and public services e.g. water supply and sewerage
- Providing social housing, public transit and promoting other activities that could encourage the participation of its citizens in the economic and social life of the community

Various Proposals on Regional Governance

- Governing the city like a province (Broadbent 2008)
- Redrawing the borders of the city-region for better environmental governance (Crombie 1992; Golden 1996)
- No strict boundaries (Sancton, 2009)

Source Water Protection and the Clean Water Act (2006)

Clean Water Act (2006)

- The Clean Water Act (CWA) is a powerful piece of legislation that has empowered municipalities and helps them coordinate with each other to prepare plans to counter drinking water threats
- Protects present and future sources of drinking water
- Sets up source protection areas
- It helped develop terms of reference for municipalities to prepare source protection plans
- Part 2 of the Clean Water Act very important -threats have to be outlined
- Agreements on how to counter these threats brokered at the local level

Clean Water Act (2006)

- Requires that municipalities have source protection plans
- It also requires that they agree on how they deal with threats in the plans
- The CWA made such participation by municipalities compulsory

Clean Water Act (2006)

- Clean Water Protection plans have precedence over the Planning Act
- Empowered municipalities to protect their water resources
- Previously, Conservation Authorities (CAs) had the authority to act on drinking water threats, but municipal membership on such committees within the CAs was voluntary
- The CWA made such participation by municipalities compulsory

Geographic Basis for Process and Planning

- A Source Protection Region contains two or more source protection areas
- In Southern Ontario, a source protection area generally corresponds to a conservation authority area of jurisdiction
- The Clean Water Act regulations provide for a source protection authority to administer the source protection plan for that source protection area

Geographic Basis for Process and Planning

- Although described as a “locally driven” planning process, many source protection regions are large and diverse geographic areas
- Plans encompass highly urbanized communities as well as mainly agricultural settings and cottage country
- The Georgian Bay-Lake Simcoe Source Protection region includes an area of more than 10,000 sq. kms., four watersheds, 52 municipalities and three First Nation Communities

Source water protection driven by ground water concerns but changed later

- Some communities served by groundwater wells while others depend on surface water sources; some have both types of systems
- Within the CTC, Durham has eight municipal ground water supply wells, but 95% of Durham's municipal water comes from Lake Ontario

CWA (2006) empowers municipalities...

- Impact of Walkerton Inquiry
- Municipalities could pass bylaws to control and monitor existing activities
- Municipalities did not have that power before source water protection
- The Clean Water Act (2006) makes source water protection paramount
- Statutes and regulations as well as other instruments that interfered with source protection have been revised

To deal with the following kind of problem:

- An existing facility on a vulnerable aquifer uses chemicals
- It is a medium sized industry, not regulated by a provincial approval
- Municipality concerned about risks of contamination to well heads
- A municipal by law under source water sphere of jurisdiction allows the municipality to regulate license permit or prohibit these activities under the Clean Water Act

How is Source Water Protection Governance configured in the Greater Toronto Area?

Source Protection in the Toronto Region

- The CTC Source Protection Region includes 25 local municipalities and eight single tier, regional or county municipalities
- 66 municipal supply wells
- 16 municipal surface water intakes on Lake Ontario

Walkerton Report

- Justice O'Connor felt that the first barrier in the multi-barrier system, source protection, had to be addressed differently. He saw it as a local planning process to be done “as much as possible at a local (watershed) level by those who will be most directly affected (municipalities and other affected local groups)”
- “The best way to achieve a healthy public water supply is to put in place multiple barriers that keep water contaminants from reaching people.”

O'Connor Report: Five Parts in the Multi Barrier Approach

1. Source water protection
2. Adequate treatment
3. A secure distribution system
4. Proper monitoring and warning systems
5. Strategic responses to adverse conditions

Source Water Protection Committee

- A Source Water Protection Committee is set up for each Source Water Protection Region
- In the CTC SPR, there are 21 committee members, plus the chair
- One third represent the economic sector
- One third represent the municipal sector
- One third represent the general public (includes environmental group representation)

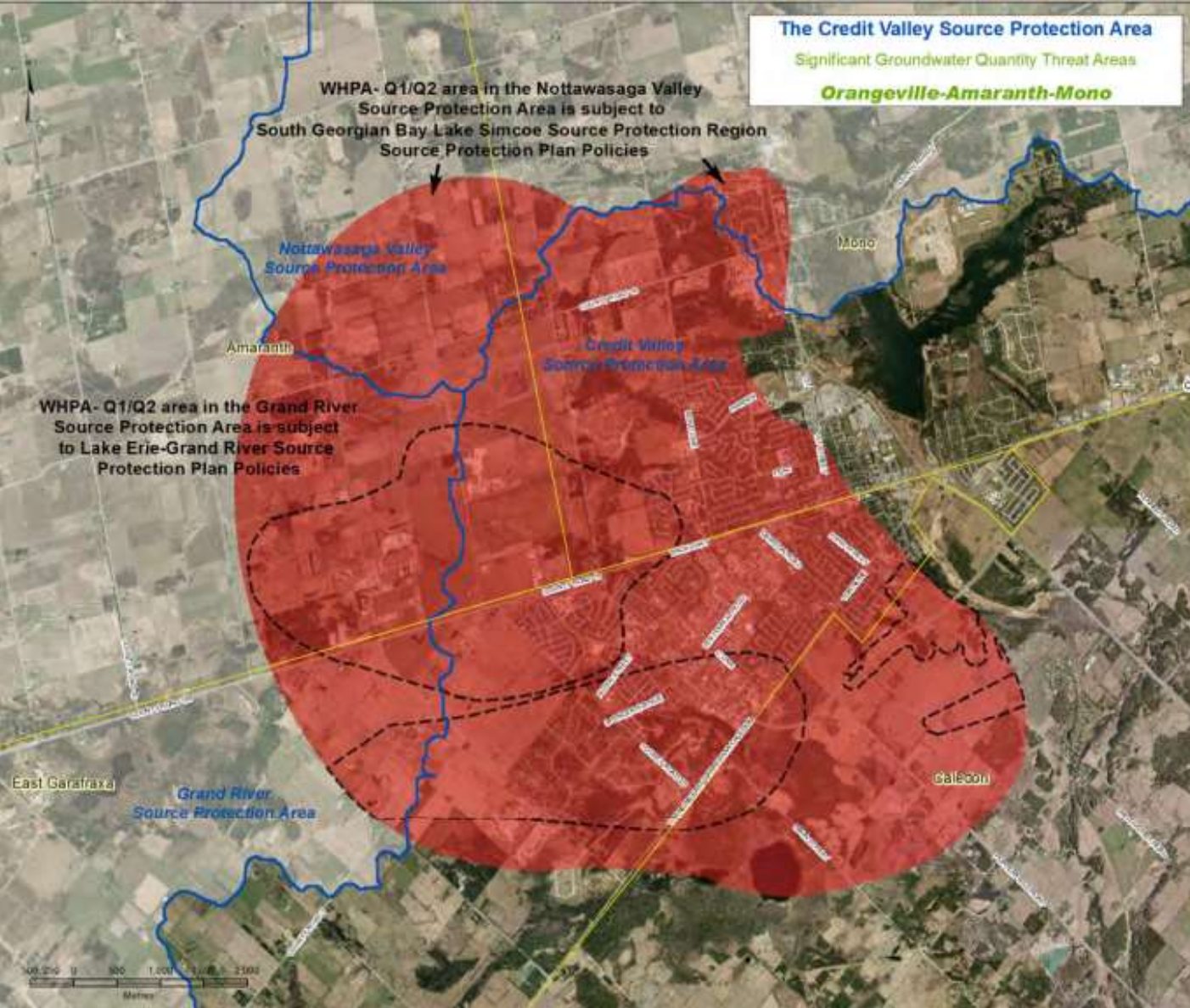
Ultimate Responsibility

“It is the source protection committees who are ultimately responsible for preparing local source protection plans.”

CTC Plan (2014)

Focus on Risk to Drinking Water

- The Clean Water Act, 2006 has a more narrow focus than other rules governing water resources in Ontario. This legislation is dedicated to sources of water that have been designated by a municipality as being a current or future source of residential municipal drinking water.



The Credit Valley Source Protection Area

Significant Groundwater Quantity Threat Areas

Orangeville-Amaranth-Mono

Legend

- WHPA- Q1/Q2 - Significant Risk Level
- DEM - Demand: Water Taking
- REC - Recharge: Recharge Reduction
- Issue Contributing Area (ICA) Sodium / Chloride
- Source Protection Area (SPA) Boundary

Reference: Prescribed Drift Accumulation as listed in the Ministry of the Environment Table Draining Water Threats (2006)

© Copyright Toronto & Region Source Protection Area, 2014

Source: TRCA, 2014, SWGGP Orthomageary 2010, LIG, MMR

This map has been prepared to meet provincial requirements under the Clean Water Act, 2000 and should be used for other purposes ONLY after consultation with its responsible conservation authority or source protection authority. The analysis is to provide the map user an best available information as of the date of the map. Priority should be given to site specific information collected in accordance with accepted scientific protocols when being used for other purposes.



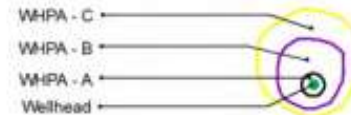
Map 3.1: Orangeville-Amaranth-Mono – Significant Groundwater Quantity Threats

The Credit Valley Source Protection Area

Significant Groundwater Quality Threat Areas

Caledon Village

Legend



- WHPA areas with Vulnerability Score = 10
- WHPA areas with Vulnerability Score = 8

Source Protection Area (SPA) Boundary

Reference: Provincial Groundwater Vulnerability as shown in the Ministry of the Environment Table of Drinking Water Threats (2004)

© Copyright: Toronto & Region Source Protection Area, 2011.

Source: TRCA, 2011; First Base Systems, 2011.

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Map 1. 5: Caledon Village – Significant Groundwater Quality Threats

Municipalities in the CTC Source Protection Region

Table 3-2: Municipalities in the CTC Source Protection Region





| Dufferin County | Peel Region | York Region | Durham Region |
|--------------------------------------|----------------------|--------------------------------|----------------------------|
| Town of Mono | City of Brampton | Town of Whitchurch-Stouffville | Municipality of Clarington |
| Township of Amaranth | Town of Caledon | Town of Markham | City of Oshawa |
| Township of East Garafraxa | City of Mississauga | Town of Richmond Hill | Town of Whitby |
| Town of Orangeville | Halton Region | City of Vaughan | Township of Scugog |
| Wellington County | Town of Halton Hills | Town of Aurora | City of Pickering |
| Town of Erin | Town of Oakville | Township of King | Town of Ajax |
| Simcoe County | Town of Milton | City of Toronto | Township of Uxbridge |
| Township of Adjala-Tosorontio | | | |

*municipalities in **bold** are responsible for providing water services; those shown with shading are the upper or single tier.







CTC SOURCE PROTECTION REGION
 Credit Valley, Toronto and Region and Central Lake Ontario




Source protection areas (CTC)

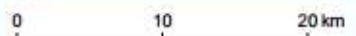
-  CTC Source protection region
-  Surrounding watersheds
-  CTC Source protection region
-  Surrounding watersheds

Urban and Municipal reference

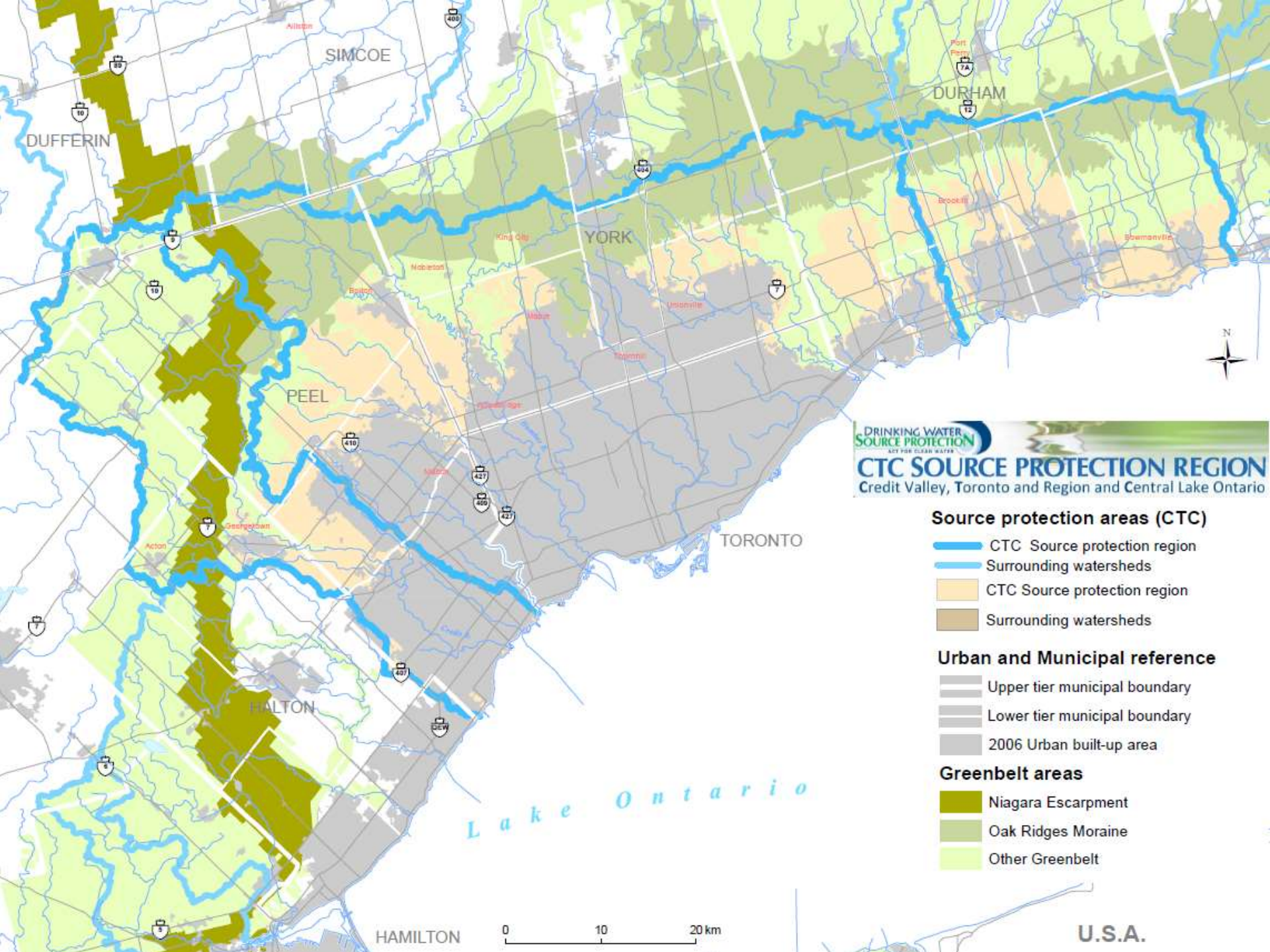
-  Upper tier municipal boundary
-  Lower tier municipal boundary
-  2006 Urban built-up area

Greenbelt areas

-  Niagara Escarpment
-  Oak Ridges Moraine
-  Other Greenbelt



U.S.A.












CTC SOURCE PROTECTION REGION

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

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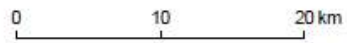
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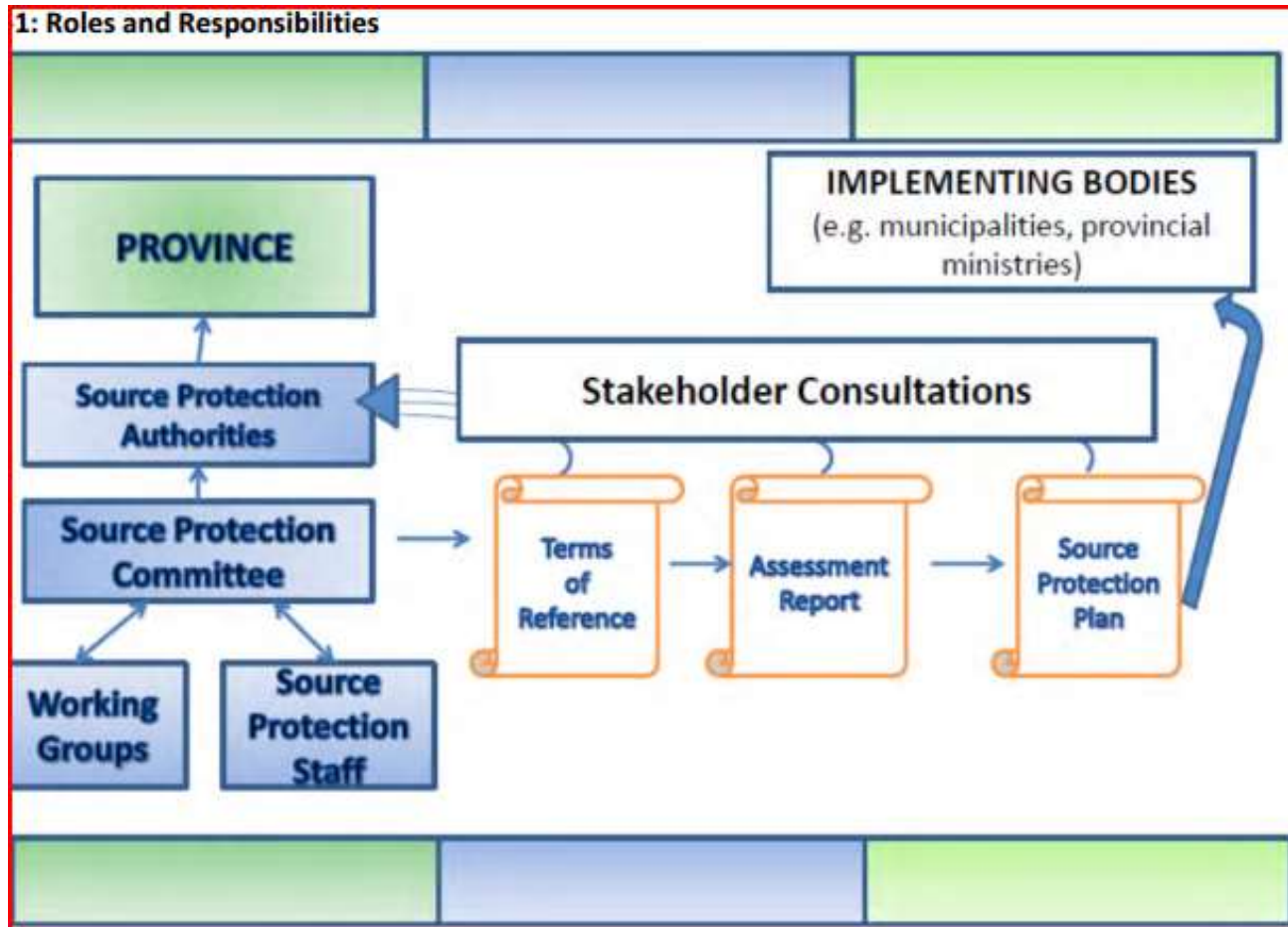
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U.S.A.

Roles and Responsibilities



Achievements and Problems of Source Water Protection

Achievements of the Toronto/CTC Source Water Protection Region

- The CWA helps municipalities coordinate with each other in the Toronto region
- Boundaries of the Toronto Source Water region (also called the CTC) contiguous with Crombie (1992) and Golden (1996) proposals for ecological boundaries and regional solutions
- Democratic Process that has involved all stakeholders

Achievements of the Toronto/CTC Source Water Protection Region

- Source Water Protection policies will also help with water quantity policies. Preventing contamination of existing groundwater resources will mean less pressure on the resource in the future
- Water Quantity Policies have been adopted in parts of York, Durham region and also in the Region of Halton, Town of Halton Hills, County of Wellington and Town of Erin in delineated in wellhead protection area
- The financial investment in developing source water protection plans and science at the municipal level will help build capacity for developing urban resilience for climate change

Problems with the Process in the Toronto region

- Delay in reaching agreement: Bringing diverse stakeholders together took time
- Private and abandoned wells not included in the source protection plans
- Capacity to develop the technical science on source water protection varied greatly between municipalities
- Funding limited, but later climate change funding for municipalities from the Province helped develop technical capacity for source water protection
- Ground water management in the region. Balancing urban and agricultural interests was a challenge faced by all source water protection authorities

Other Problems with Source Water Protection in the Toronto Region

- Complexity and duplication
- Due to the local approach, inconsistency among source protection plans could arise in a region
- Presence of wells in areas subject to different source protection plans, some from outside the source protection region
- Uncertain Timing of Implementation (Auditor General report, Dec 2014)

What held up the Process in the Toronto region

- Complex settlement geography of the region
- Northern parts of the region relatively rural and depended on groundwater. Risks greatest here
- Peel and Durham region still have substantial rural areas that rely on groundwater, while their urban areas rely on Lake Ontario.
- More regulations for areas that depend on groundwater. Time lost in negotiation

What held up the process....

- Since 2012, City of Toronto held up the process as it mobilized other municipalities and lobbied with the MOE and the Source Water Protection Region to undertake modelling of various catastrophic scenarios and accidental spills into Lake Ontario
- Hydrologists on Lake Ontario: Lake intakes had low vulnerability. Toronto and other municipal intakes deep; dilution factor

(Intakes are structures built into the body of water to draw water)

Challenges in Urban Fringe Areas

- Initially, municipalities were not devoting resources to source water protection, but when they saw that they would save money as a result of climate change events (storm water management , water quality and quantity issues), their co-operation increased.
- Dufferin County, a rural area. First regional plan appealed by property developers to the Ontario Municipal Board. They challenged wellhead protection and vulnerable aquifer areas identified in the county's Official Plan

Other Problems with Source Water Protection in the Toronto Region

- Unanticipated costs
- Costs to residents, farmers, businesses and property owners

City of Toronto and Regional Water Governance

- Studying risks to intakes legally difficult for SPC as Lake Ontario fell under provincial jurisdiction. Funding not available.
- Finally, the SPC and MOE relented and funded additional technical work to study the impact of accidental spills on lake intakes or other catastrophic events e.g. weather events

Toronto's Objections: City Council Decisions

- The City argued that the Ministry of Environment and Climate Change should be the implementing body for the purpose of the Lake Ontario policies contained in the CTC Source Protection Plan
- The source water protection committee thought the money was better spent elsewhere than to study risks to Lake Ontario intakes
- Separate section in the Source Protection Plan emphasizes the need for further collaboration

Boundaries: Administrative Convenience or Environmental Imperatives?

- Regional municipalities did not like inconsistency between their jurisdictions and the City of Toronto favored uniform policies too
- A uniform approach was considered important in choosing the boundaries of the Source Water Protection Region

Boundaries: Administrative convenience or environmental imperatives?

- Reg 284/07 “Source Protection Areas and Regions” under the Clean Water Act, 2006.
- More specifically, Toronto, Peel and Central Lake Ontario were grouped together for **environmental planning purposes**

Implications for our understanding of Regional Governance in Toronto

What Have We Learned?

- Some municipalities more powerful than others
- Given the location of the Toronto region and the division of responsibilities between the federal, provincial and local levels around water, the problem of fragmentation in the Toronto region has not been done away with completely
- Source Water Region boundaries have only reinforced the importance of regional co-operation
- Given that water is a provincial subject in Ontario, effective regulation of water in the GTA will continue to require strong provincial laws

Implications for our understanding of Regional Governance

- Reform of regional water governance in the Greater Toronto region largely by default (post-Walkerton)
- However, the success of the Clean Water Act establishes a clear trend for future regional environmental policy
- Thus, provincial role and MOECC-local partnerships are crucial in water given the complex regulatory context
- The Clean Water Act has facilitated local and broader regional collective action efforts on water

Further Research

- More research also needed on water quantity policies to actually test the degree to which the problem of fragmentation has been mitigated with respect to water
- Ontario Environmental Commissioner reports from 2008 onwards have pointed out that the Permit To Take Water (PTTW) system needs reform
- Preliminary analysis shows that larger municipalities in the GTA have been more successful than others in water conservation