

Background Briefing

Source water protection

December 2014

In May 2000, heavy rain washed E. coli bacteria into a municipal well serving Walkerton. A series of human and mechanical failures allowed the bacteria to get through the treatment system and into the municipal water supply. Seven people died and more than 2,300 became ill.

Multi-barrier system

Justice Dennis O'Connor of the Supreme Court of Ontario investigated the event and provided advice on how to prevent future tragedies. He recommended a "multi-barrier approach." Each barrier acts as a backstop to the others, so if one were to fail the others would reduce the chances of a contaminant getting through the system to people.

The five barriers are:

- adequate treatment
- a secure distribution system
- proper monitoring and warning systems
- well-thought out responses to adverse conditions
- protecting drinking water sources from contamination

The first four barriers were addressed almost immediately in The Safe Drinking Water Act 2002 and regulations that applied to municipalities and water system operators.

The fifth barrier – source water protection – was left to a public planning process because of the potential impact on property owners. The Clean Water Act 2006 was passed to implement source protection planning.

Source protection regions and committees

Each watershed in Ontario will have its own source protection plan. However, for planning purposes, Source Protection Regions have been created with up to five watersheds in each.

The Lake Erie Source Protection Region includes the Grand River, Long Point Region, Catfish Creek and Kettle Creek watersheds.

The Lake Erie Region Source Protection Committee leads the process. It is a multi-stakeholder group representing municipalities, businesses, farmers, residents, First Nations and others. The province named the chair, while the other 24 voting members were selected according to procedures in regulation.

The
multi-barrier
approach



Vulnerable areas and threats

The areas around water sources have been designated as Wellhead Protection Areas and Intake Protection Zones. Vulnerability scores have been assigned to the areas based on how easily and quickly contaminants can reach the well or intake.

Threats are human activities that can contaminate or deplete a water source. The level of risk posed by a threat can vary and is based on many factors: the location of the threat, how much material is involved, how it is stored or used, how toxic it is and others.

The threats that pose the greatest risk are "significant threats." The source protection plan must contain policies and programs to manage, or eliminate, existing significant threats and prevent new ones from developing.

The Grand River watershed has 50 water systems, about 190 wells, five river intakes and one Lake Erie intake. About 6,900 significant threats have been identified.

Milestone documents

The Act requires the committee to produce several documents culminating in the source protection plan:

- **Terms of Reference:** the work plan of the process, stating who has the responsibility for various parts of the research and plan development. In the Lake Erie Region, municipalities are taking the lead on much of the work. The Terms of Reference were approved in 2009

● **Assessment Reports:** the scientific foundation of the process. These reports contain information on each watershed, the water sources, their vulnerability and the types and numbers of threats. These are complete and have been approved by the Ministry of the Environment and Climate Change. These are being updated with new information.

● **Source Protection Plans:** Source Protection Plans for all four watersheds in the Lake Erie Region were submitted in late 2012 and early 2013. The plans for the Catfish Creek and Kettle Creek have been approved by the MOECC. Plans for Long Point Region and Grand River are being reviewed by the MOECC. These two plans will be updated with additional information early in 2015 and resubmitted for approval which is expected by the end of the year.

Implementation

Implementation will begin after the plan has been approved by the MOECC. Many of the tools to address significant threats are extensions of policies and programs that already exist. Therefore, those elements of the source protection plan will be implemented by the agencies already responsible for them.

The tools include:

- Changes in municipal official plans and bylaws to prohibit or restrict land uses in order to manage or eliminate significant threats
- Additions to provincial licences and permits (prescribed instruments) such as pesticide permits, aggregate licences, nutrient management plans, etc.
- Risk management plans negotiated between a landowner and the municipality
- Incentive programs to encourage landowners to address significant threats
- Education and outreach programs

It's unknown at this time how much implementation will

cost, or how the costs will be covered.

Public involvement

Because of the potential impact on property owners, there is a high level of public consultation in the process. Key documents are posted for public inspection in conservation authority and municipal offices, as well as on the website www.sourcewater.ca.

Public meetings are required as each milestone is reached. The owners of land where significant threats are found must be notified by mail.

Literature was mailed to about 60,000 properties in well-head and intake protection zones.

Role of conservation authorities

Conservation authorities are facilitators of the process. They provide staff and administrative support, as well as contributing the results of their own knowledge and research to the process.

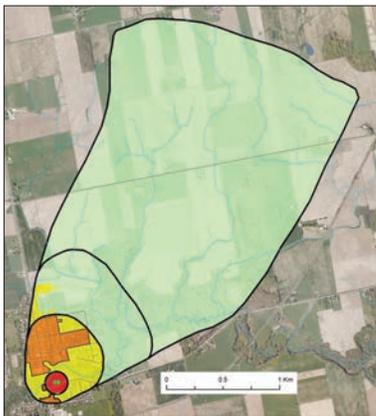
The board of a conservation authority has responsibilities in its role as the "source protection authority" for its watershed. It has to ensure that the Source Protection Committee has the resources it needs, including staff, to complete its tasks. It also submits the proposed version of key documents to the province.

Financing the planning process

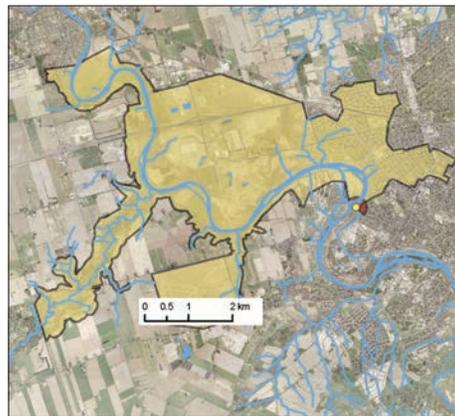
The provincial government is paying all costs of the planning process.

Grants to the conservation authorities cover the salaries of staff working on the project, technical studies and research, public consultation, publication of documents and other costs.

Examples of protection zones



Wellhead Protection Area



River Intake Protection Zone.



Lake Erie Intake Protection Zone