

News about the Clean Water Act for the Grand River, Long Point Region, Catfish Creek and Kettle Creek watersheds



The water tragedy at Walkerton in 2000 showed the importance of protecting the sources of municipal drinking water. Seven people died and thousands became ill when bacteria polluted a municipal well.

In 2006, Ontario government passed the Clean Water Act to protect the wells, rivers and lakes that are sources of municipal water. Under the Act, Source Protection Plans are being developed to provide an additional layer of protection to municipal water supplies.

Understanding the science: *Assessment Reports*

An important first step is learning where the water comes from, how vulnerable it is to contamination and what kind of contaminants are in source water areas.

That work is now largely complete. The results are in the Assessment Reports for each watershed in the Lake Erie Region. Those reports are available at www.sourcewater.ca.

Human activities in vulnerable areas that pose the biggest risk to the water sources are called

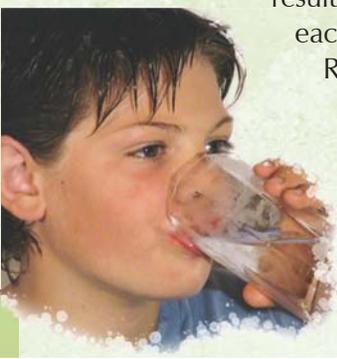
significant threats. The Assessment Report lists the number and type of these threats. Just because an activity is a significant threat does not mean that it is currently harming water sources. It has the potential to cause harm if something should go wrong, such as an accidental spill or leak. The purpose of the Source Protection Plan is to reduce the risk posed by significant threats.

Taking action: *Source Protection Plans*

The next step is to decide what to do about significant threats. The Drinking Water Source Protection Plans will contain the policies and programs needed to do this. The plans will be complete by August, 2012.

There are many tools available to address significant threats. A process is underway to decide the combination of tools that will work best for the communities, residents and property owners of the Lake Erie Region.

This is a collaborative effort guided by the Lake Erie Region Source Protection Committee and involving municipal officials and other experts. Residents and landowners will have several opportunities to be involved through a public consultation process taking place through 2011 and early 2012.



Source Protection Timeline

	2005	2006	2007	2008	2009	2010	2011	2012
Watershed Studies	██████████							
Municipal Technical Studies		██████████						
Terms of Reference				██████████				
Assessment Report					██████████			
Source Protection Plans						██████████		

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How do we identify the threats to our drinking water?

Step 1: Identify and map vulnerable areas

The word **vulnerability** describes how easily a well or intake can become polluted with a dangerous material.

Researchers have studied each municipal well and intake in the four watersheds of the Lake Erie Region to determine how vulnerable they are. There are five Lake Erie intakes, five river intakes and about 225 wells. The studies produced maps showing the vulnerable areas.

- For wells, the vulnerable areas are called Well Head Protection Areas (WHPA).
- For river and lake intakes, the vulnerable areas are called Intake Protection Zones (IPZ).

The studies showed how quickly a contaminant could make its way through the ground to the well or downstream to the intake. Vulnerability scores, on a scale of 1-10, were assigned to the areas around the wells and intakes. The higher the score, the more vulnerable the water source is to contamination.

Step 2: Determine where threats may exist

The Clean Water Act lists the human activities that pose a risk to drinking water. (See list of threats to the right.) The seriousness of a threat depends on a number of things: how much is stored or used, how it is stored or moved, its location near the well or intake, how it behaves in the environment and other factors.

The Ministry of the Environment has examined the combination of factors and created hazard rating for each of the activities. The rating are on a scale of 1-10. The higher the rating, the higher the risk.

Step 3: Calculate threat levels

The Source Protection Plan must address significant threats. To determine which threats are significant, the Ministry of the Environment has developed this formula:

Multiply the vulnerability score (out of 10) times the hazard rating (out of 10). The result will be a risk score out of 100.

$$\text{risk score} = \text{hazard rating} \times \text{vulnerability score}$$

Based on the results of the calculation, threats are placed into one of three categories:

	Risk score
Significant threat	80 to 100
Moderate threat	60 to 79
Low threat	41 to 59

The Assessment Reports for the four watersheds identified about 7,400 significant threats:

Grand River 6,900	Long Point Region 340
Catfish Creek 32	Kettle Creek 2

map 1

Well Head Protection Areas show the underground areas called aquifers that supply water to a municipal well. The vulnerability of the well is based on how easily a contaminant on the surface can move through the ground to reach the well.

map 2

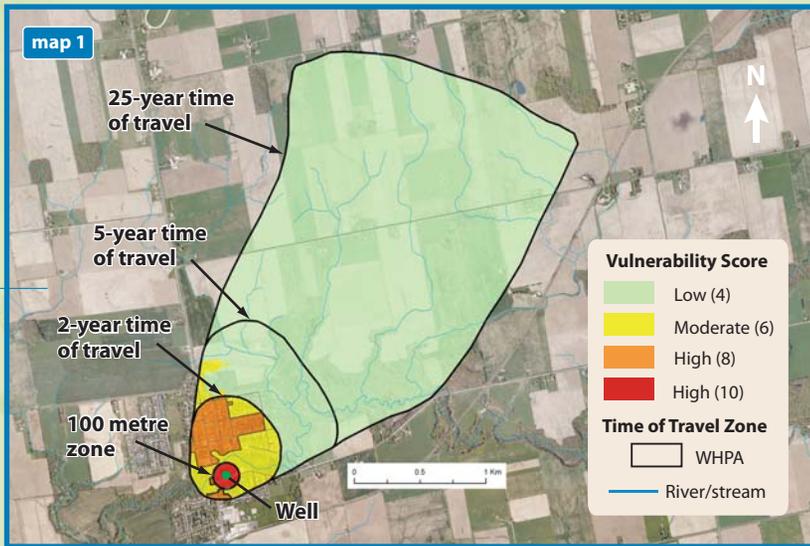
Intake Protection Zones for rivers are the areas where water can reach the intake in a specified period of time, usually two to six hours.

map 3

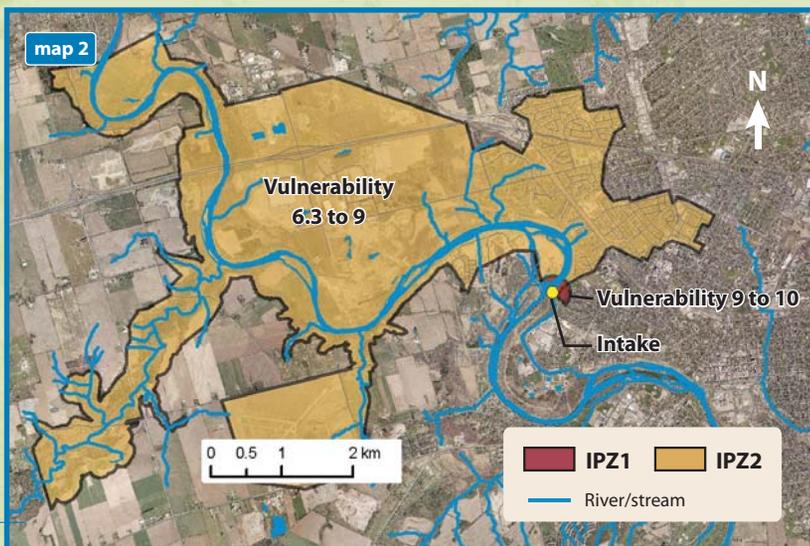
For Lake Erie intakes, the Intake Protection Zone includes a one kilometre circle around the intake plus adjoining land areas that drain into the lake through river, streams, storm sewers or rural drains.

Sample Wells & Intakes

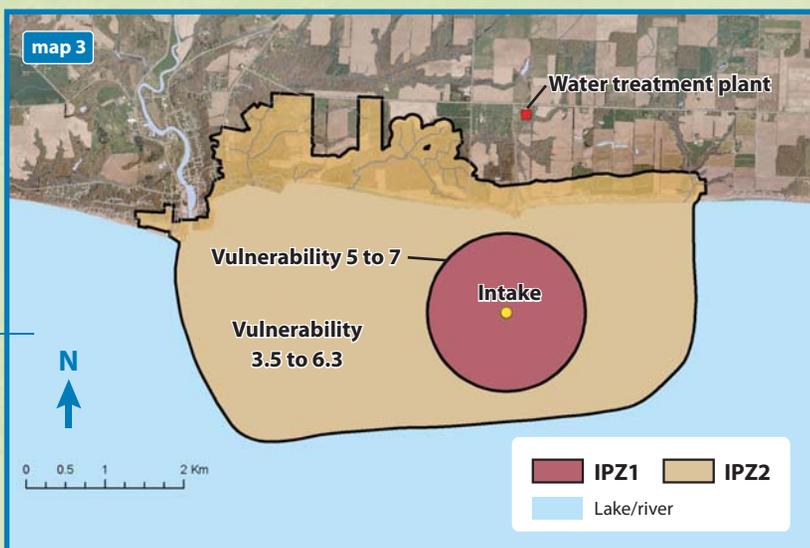
Wellhead Protection Area



Intake Protection Zone - river



Intake Protection Zone - lake



Prescribed Drinking Water Threats

The Clean Water Act lists activities that could threaten municipal drinking water supplies:

- Waste disposal sites
- Sewage systems, including septic systems
- Storage, management and application of agricultural source material (e.g. manure)
- Handling, storage and application of non-agricultural source material (e.g. biosolids, food waste)
- Handling, storage and application of commercial fertilizers
- Handling, storage and application of pesticides
- Handling, storage and application of road salt
- Storage of snow
- Handling and storage of fuel (e.g. gasoline, home heating oil)
- Handling and storage of dense non-aqueous phase liquids (DNAPL, e.g. paint strippers, metal and plastic cleaning solvents, dry cleaning solvents)
- Handling and storage of organic solvents (e.g. dry cleaning solvents, paint thinners, glue solvents)
- Chemicals used in the de-icing of aircraft
- Livestock grazing, pasturing, outdoor confinement areas and farm-animal yards.

The presence of an activity on this list does not mean that it is always a significant threat. To be a significant threat it must be in a vulnerable area and have a high risk score. The risk score is based on the closeness to the water source, amount of material involved, storage method and other factors.

The Source Protection **Toolbox**

The goal of a Source Protection Plan is to manage or eliminate existing activities that are, or could become, significant threats. In most circumstances, property owners will be able to manage significant threats to reduce the risk and allow the activity to continue.



The Clean Water Act provides several tools to accomplish the goal. The Source Protection Committee will work with municipalities to decide which combination of tools will work best in local circumstances.

Land use planning policies

Municipalities use zoning bylaws and official plans to direct new development to appropriate areas. These planning documents could be changed to prohibit new development in highly vulnerable areas that would create new significant threats. For example, a municipality might ban new waste disposal sites near municipal wells, or chemical storage facilities just upstream from a river intake.

Prescribed instruments

A “prescribed instrument” is a permit or other legal document issued by the provincial government allowing an activity to take place. Some examples include:

- permits under the Pesticides Act
- licences under the Aggregate Act
- Nutrient Management Plans under the Nutrient Management Act
- Certificates of Approval for sewage systems under the Ontario Water Resources Act

These instruments usually contain terms to protect human health and the environment. A Source Protection Plan could require additional terms for permits and licences issued for activities that are, or could be, significant threats.

Risk management plans

Protective or safety measures can reduce the risk posed by a significant threat. For example, a business or farm that stores chemicals or fuel could develop a spill response program or install stronger storage containers.

Measures such as these could be included in a risk management plan negotiated by the landowner and the municipality. The agreement would affect the current owner, as well as future owners, as long as the activity continues.

Prohibition

A Source Protection Plan could prohibit certain activities in vulnerable areas to prevent new significant threats from developing. For existing significant threats, this tool would only be used where other tools can't do the job of reducing the risk.

Restricted land uses

Conditions could be placed on planning applications or building permits in vulnerable areas to limit the establishment or expansion of activities that could create a significant threat in the future. This tool would help municipalities decide what types of development to allow and which could not take place.

Incentive programs

Financial incentives could be offered to landowners to address significant threats on their property.

Education and outreach

Educational programs could show landowners how to manage a significant threat on their property.

Other approaches

Some other possible tools that could be included in a source protection plan include stewardship programs, promotion of best management practices; pilot programs to investigate new approaches to protecting water, and research initiatives.

How will Source Protection Plans
be developed?

How can property owners and residents
be involved?

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How will Source Protection Plans be developed?

The Lake Erie Source Protection Region includes four watersheds that drain into Lake Erie: Kettle Creek, Catfish Creek, Long Point Region and the Grand River. The Lake Erie Region Source Protection Committee is leading the development of Source Protection Plans for these four watersheds.

Over the past four years, experts carefully studied municipal water sources and identified potential threats. Now, Source Protection Plans are being prepared to say what needs to be done to manage or eliminate significant threats.

The Clean Water Act gives the committee a variety of tools it can include in Source Protection Plans. The committee has the flexibility to pick the tools that will work best in the communities in the Lake Erie Region. Committee members are working with conservation authority staff, municipal staff and other experts to examine the various tools and approaches. The results will be outlined in a series of discussion papers.

In the summer and fall of 2011, municipalities will study the discussion papers. By the end of 2011, municipalities will recommend the combination of tools and policy options they think will work best for their water sources. The Source Protection Committee will review the recommendations and complete the Source Protection Plans early in 2012. A period of public consultation will then take place.

In August 2012, the committee will submit the plans to the Ministry of the Environment. After the ministry approves the plans, various agencies will implement them, including municipal governments, provincial ministries and conservation authorities.

How can property owners and residents be involved?

All residents of the watersheds in the Lake Erie Region have a stake in protecting our water supplies. That is why the process to develop source protection plans is open and public. People who own land near wells and intakes have an additional interest in the process, because the plans could affect their properties.

People can learn more about source protection planning, how it will affect them and how they can comment at a series of public meetings over the next year. Notices will be mailed to owners of land where significant threats exist.

May - June 2011: Public meetings to update residents on the status of the planning process and the next steps.

Fall 2011: Public meetings to discuss the policies municipalities want to see included in the Source Protection Plans.

Spring 2012: Public meetings sponsored by the Source Protection Committee to receive public comments on the draft Source Protection Plans.

Notices of public meetings will be mailed to owners of land where significant threats exist.

What is *the Lake Erie Source Protection Region?*

This region covers four watersheds that drain into Lake Erie: Kettle Creek, Catfish Creek, Long Point Region and the Grand River. A 25 person committee is responsible for developing source protection plans for these watersheds. The plans will outline policies and programs to eliminate significant threats to the water supply as well as reduce the opportunity for low and moderate threats to become significant.



Who is *the Lake Erie Source Protection Committee?*

The committee is an independent group made up of representatives of farmers, businesses, municipalities, residents and First Nations. Source Protection Committees have been established in watersheds across Ontario to lead development of Source Protection Plans.

