SOURCE WATER PROTECTION

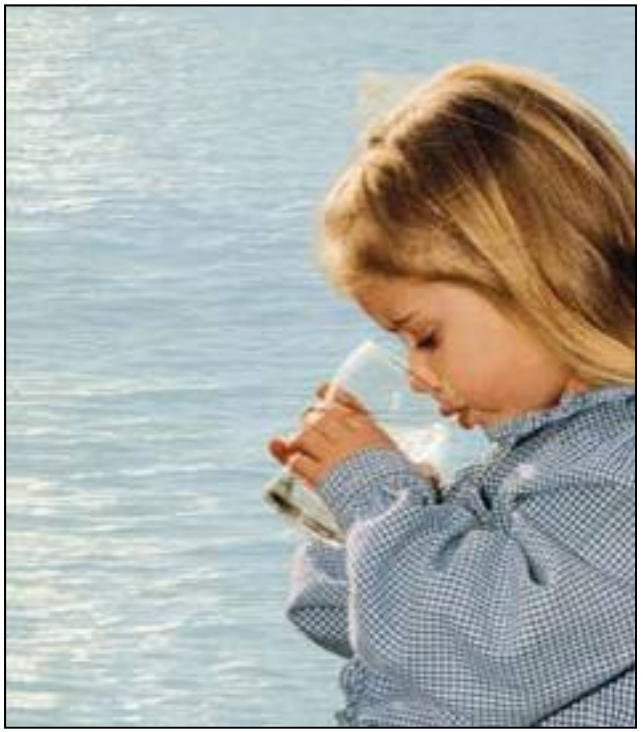
Brantford Public Meeting
Tuesday, June 29, 2010

DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

LAKE ERIE SOURCE PROTECTION REGION

Protecting our water

- We need safe, abundant drinking water supplies to survive and prosper
- Walkerton water crisis showed us the importance of protecting water supplies
- Walkerton inquiry recommended a ‘source water protection program’



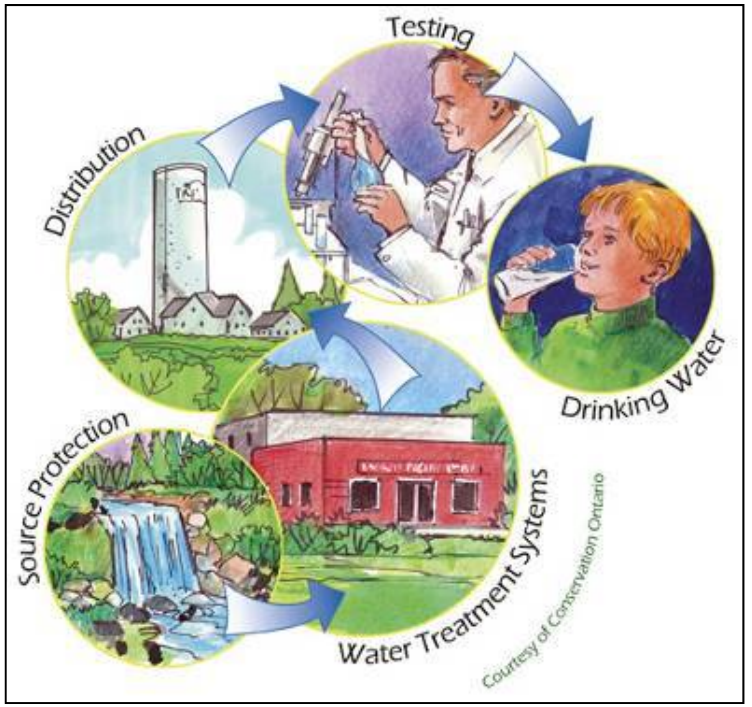
The Clean Water Act

- **Passed in 2006 to implement recommendations on source protection in the Walkerton Report**

- **Source Protection Plans will be**
  - science-based
  - done on a watershed basis
  - joint effort of municipalities and people of a watershed
  - facilitated by conservation authorities

Source Protection Plans

- **Protect current and future drinking water sources from contamination and depletion**
- **One of five layers in a 'multi-barrier' approach:**
  1. adequate treatment
  2. secure distribution system
  3. good monitoring and warning systems
  4. well thought-out responses to problems
  5. source water protection



Who does what?

- **Source Protection Committee (SPC):**
  - directs the development of Source Protection Plans
- **Conservation Authorities:**
  - provide support and technical expertise
  - reports on progress in implementing the plan
- **Municipalities:**
  - involved in technical studies, consultation, plan development
  - implement and enforce Source Protection Plans
- **Stakeholders:**
  - provide input through reps on SPC and in public consultation
- **Province:**
  - provides legislation, regulations and rules
  - pays 100% of cost of plan development
  - approves milestone documents and Source Protection Plan

Source Protection Committees

- **Process led by Source Protection Committees**

- **Multi-stakeholder group with reps from key sectors:**
  - chair (appointed by province)
  - 7 municipal
  - 7 economic sectors (farm, industry, commercial)
  - 7 public interest (e.g. residents)
  - 3 First Nations

- **Lake Erie Source Protection Region**
  - Kettle Creek
  - Grand River
  - Long Point Region
  - Catfish Creek
- **Share knowledge and expertise**
- **One plan will be developed for each watershed**

Steps in the process

1. Identify source water and vulnerable areas
2. Identify water quality and supply issues
3. Identify threats in the vulnerable areas
4. Establish the level of risk
5. Develop policies to manage significant risks

Calculating level of risk

Vulnerable area

(Based on geology and lay-of-the-land)

- Wellhead areas
- Surface water intake areas
- Vulnerable aquifers
- Recharge areas

X

Threats

(Based on activity)

- Chemical use
- Handling practices
- Waste disposal

‘Significant threats’

High vulnerability **X** **High** threat =
High risk of contamination

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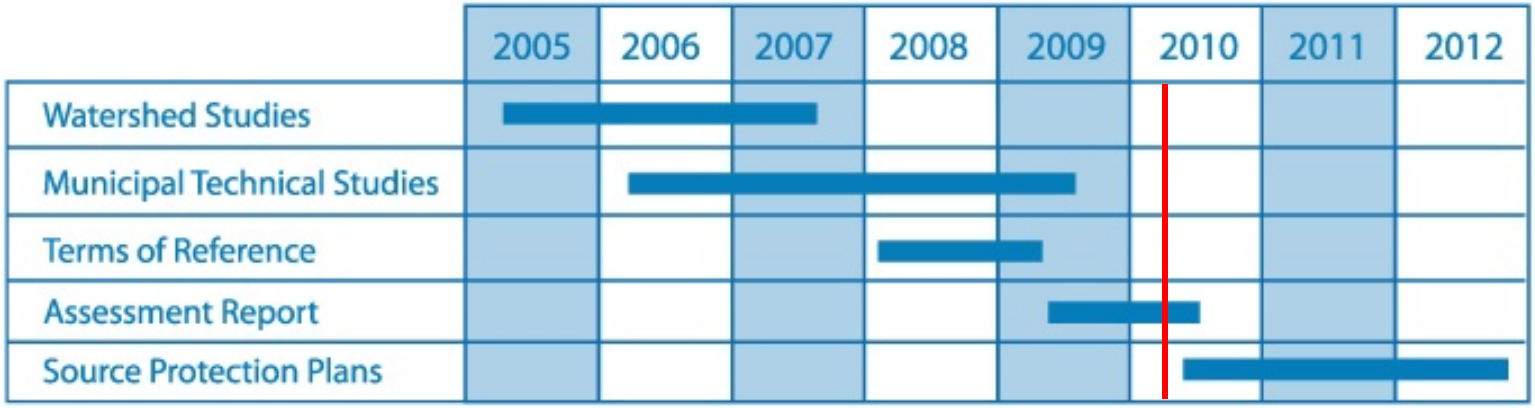
Steps in the process



- **Characterization Reports:** Complete
- **Terms of Reference:** Complete
- **Technical studies:** Complete
- **Assessment Reports:** in progress – 2010
- **Source Protection Plans:** complete by 2012

Brantford water system

- **Owned and operated by the City of Brantford**
- **One intake on the Grand River at Wilkes Dam**
  - Holmedale Canal takes water from river to plant
- **River intake can be shut down in case of a spill**
- **Serves about 95,000 people**

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Intake Protection Zones

- **Area where pollutants from a spill, etc. can reach the intake before it can be closed**
  - IPZ 1 – closest to intake
  - IPZ 2 – further upstream
- **Vulnerability measured on 10-point scale**
- **Identified with dye tracer studies**

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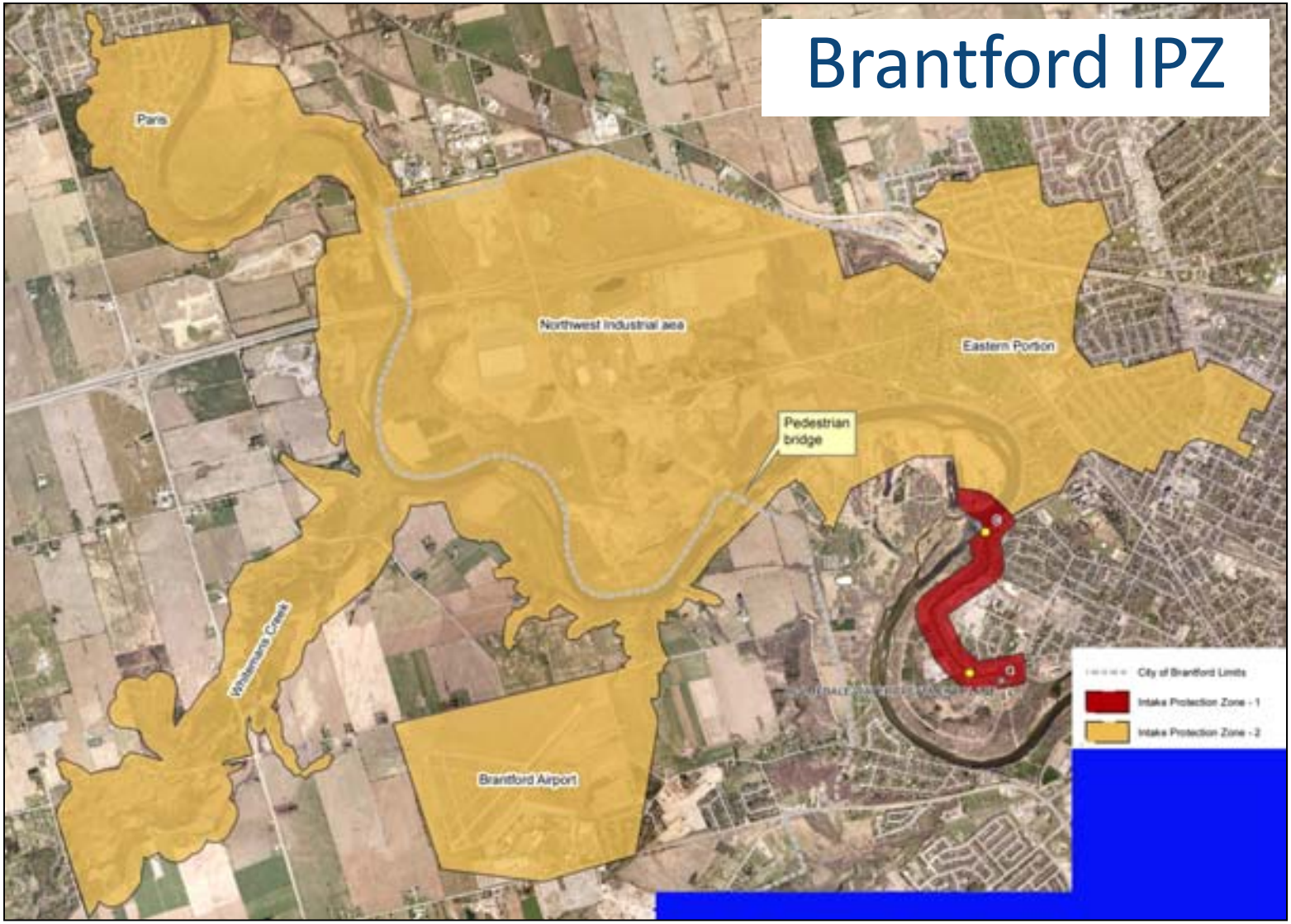
Brantford IPZ



- Based on 6-hour time of travel
- IPZ 1: vulnerability score of 10
- IPZ 2: vulnerability score of 9

Identifying potential threats

- **Potential threats found in urban and rural areas**
- **Chemical threats include use and storage of:**
  - solvents
  - pesticides
  - fertilizers
  - fuels
- **Pathogen threats include:**
  - storage and spreading of manure
  - septic systems

Identifying potential threats

- **Not all potential threats are equal**

- **Potential threats given 'hazard rating' on a 10-point scale based on:**
  - the amount
  - how it is used or stored
  - how toxic it is
  - how the material behaves in the environment

Calculating level of risk

Vulnerable area **X** **Threats**

100-metre zone has a *vulnerability score* of **10**

Below ground heating oil tank has *hazard rating* of **8.6**

10 vulnerability ***X*** **8.6** hazard = **86**

- **Significant threat**: score of **80 - 100**
- **Moderate threat**: score of **60 - 79**
- **Low threat**: score of **41 - 59**

Establish the level of risk

- **Table of Drinking Water Threats**

  - 490-pages of tables cover all combinations of threats and vulnerability

  - available at *www.sourcewater.ca*

TABLE 1 – DRINKING WATER THREATS - CHEMICALS

DRINKING WATER THREATS:	Reference number	under the following CIRCUMSTANCES:	Areas Within Vulnerable Area	Threat is Significant in Areas with a Vulnerability Score of:	Threat is Moderate in Areas with a Vulnerability Score of:	Threat is Low in Areas with a Vulnerability Score of:
Column 1		Column 2	Column 3	Column 4	Column 5	Column 6
The application of agricultural source material to land.	13	1. (a) The agricultural source material is applied to land located in a census consolidated subdivision that has a managed land percentage that is more than 50% and a livestock density that is sufficient to annually generate nutrients at a rate that is less than 0.5 nutrient units per acre; and (b) The total available nitrogen or phosphorus in all nutrients applied during the year to the land on which the material is applied exceeds the crop production requirements for crops on the land for that year by 15% or more. 2. The application may result in the presence of Nitrogen in groundwater or surface water.	IPZ-1, IPZ-2, IPZ-3, and WHPA-E	10	7 - 9	4.5 - 6.4
			WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D	10	8	6
			HVA			6
			SGRA			6
	14	1. (a) The agricultural source material is applied to land located in a census consolidated subdivision that has a managed land percentage that is more than 50% and a livestock density that is sufficient to annually generate nutrients at a rate that is less than 0.5 nutrient units per acre; and (b) The total available nitrogen or phosphorus in all nutrients applied during the year to the land on which the material is applied exceeds the crop production requirements for crops on the land for that year by 15% or more. 2. The application may result in the presence of Phosphorus (total) in groundwater or surface water.	IPZ-1, IPZ-2, IPZ-3, and WHPA-E	10	7 - 9	4.5 - 6.4
			WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D			
			HVA			
			SGRA			
	15	1. (a) The agricultural source material is applied to land located in a census consolidated subdivision that has a managed land percentage that is more than 50% and a livestock density that is sufficient to annually generate nutrients at a rate that is at least 0.5 nutrient units per acre but not more than 1.0 nutrient unit per acre; and (b) The total available nitrogen or phosphorus in all nutrients applied during the year to the land on which the material is applied exceeds the crop production requirements for crops on the land for that year by 15% or more. 2. The application may result in the presence of Nitrogen in groundwater or surface water.	IPZ-1, IPZ-2, IPZ-3, and WHPA-E	9 - 10	7 - 8.1	4.5 - 6.4
			WHPA-A, WHPA-B, WHPA-C, WHPA-C1, WHPA-D	10	8	6
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			SGRA			6
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			SGRA			

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Assessment Report

- **Summary of watershed and water system info**
  - watershed characteristics
  - vulnerability of water sources
  - numbers and types of threats
- **Grand River Assessment Report will be published this summer**
  - posted at www.sourcewater.ca
  - available at GRCA and City of Brantford
- **Two rounds of public consultation in summer and early fall**
- **Submitted to Ministry of Environment in fall**

Source Protection Plan

- **Policies and programs to:**
  - manage *significant* threats so they are no longer significant
  - prevent new *significant* threats from being created
- **Various methods to accomplish these goals:**
  - land use controls
    - e.g. municipal zoning bylaws, official plans
  - existing provincial instruments
    - e.g nutrient plans, pesticide permits, certificates of approval
  - negotiated 'risk management' agreements
  - property owner incentives
  - public education programs

Stages of plan approval

- **Public involvement**
  - public consultation at each stage of the process
  - notices to all affected landowners
  - landowners have right to comment and appeal

- **Plan approval**
  - plan given to municipalities for comment and advice
  - submitted to Ministry of the Environment for approval
  - ministry could order public hearings

Financial support for landowners

- **Stewardship Program: grants to landowners**
  - decommissioning old wells & upgrading existing wells
  - septic system upgrades
  - erosion control e.g. tree planting, buffers
  - business pollution prevention reviews
- **Available to landowners in:**
  - IPZ 1 near the intake
- **For more info:**
  - Contact Grand River Conservation Authority
  - or visit *www.sourcewater.ca*

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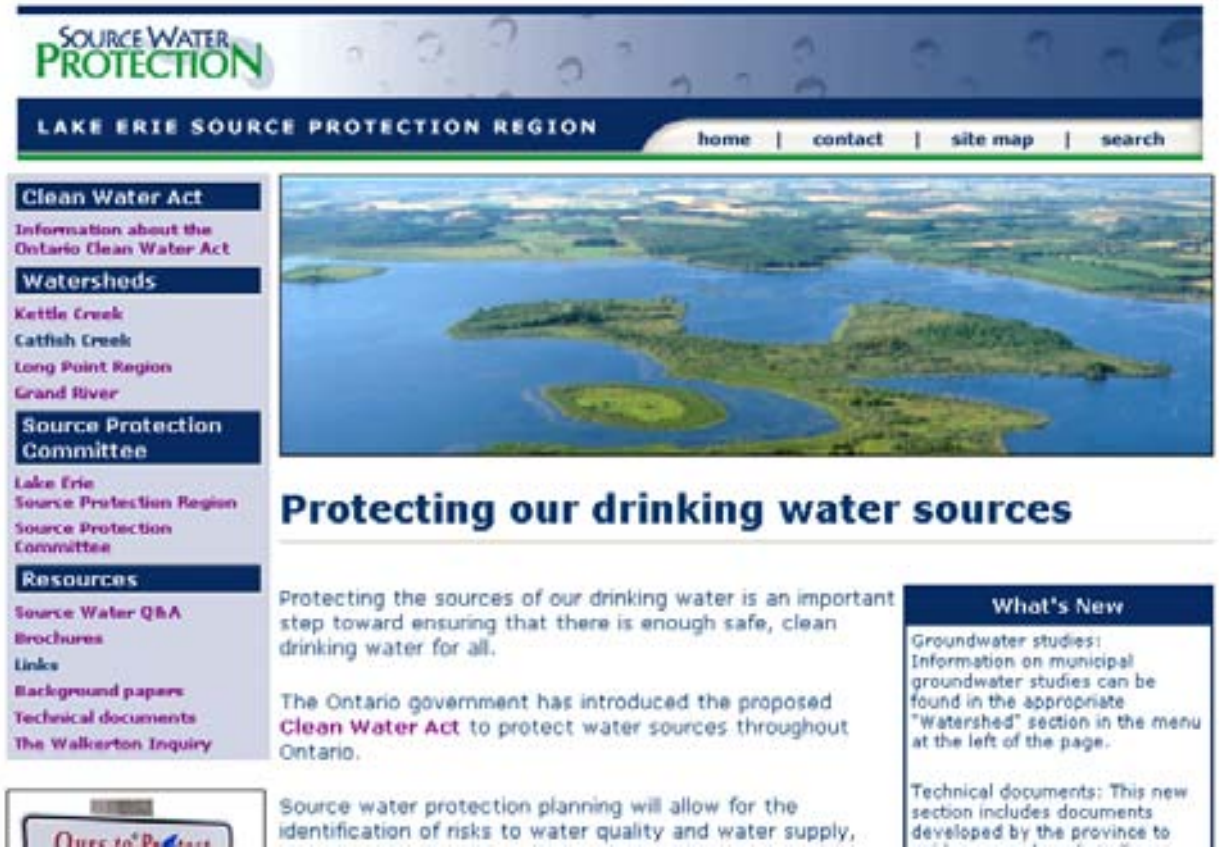

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