

Collaborative Study to Protect Lake Ontario Drinking Water

Update for CTC SPC

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Agence Ontarienne Des Eaux

This project has received funding support from the Ontario Ministry of the Environment.

Such support does not indicate endorsement by the Ministry of the contents of this material.

The Challenge

- Lake Ontario provides water to 6 million people in Ontario
- High quality source but threats could include:
 - Contaminants in rivers and streams
 - Sewage treatment – bypassing & combined sewage overflows, pathogens and chemicals
 - Direct storm water discharges
 - Changes to lake ecosystem
 - Industrial discharges including nuclear power plants

The Challenge (con't)

- Complex physics in lake – upwelling/downwelling, thermal bar, winter/summer, rivers
- Extensive modeling of wastewater plants etc.
 - Winter/extreme conditions
- Extensive data and information exists
 - Data quality and access

Lake Ontario Collaborative



Ontario Water Works Research Consortium

OWWRC

Supported By: Members & Green Municipal
Enabling Fund & Ontario Ministry of
Environment



The OWWRC – Forerunner of Collaborative

- OWWRC is utility funded and led - focused on the western basin Lake Ontario
- 1999/2000 Taste & odour research program
- 2002 Attached algae research program

OWWRC Research

- OWWRC research - improved understanding of:
 - Physics/chemistry and biology of the lake
- Very little direct observation/measurement of:
 - Chemical hazards from industry, WW, agriculture, cyanobacteria; and,
 - Pathogens from agriculture, WW, CSOs/bypasses, storm water, etc.

Collaborative Study to Protect Lake Ontario Drinking Water

*Ensure the long-term, proactive and strategic protection of
Lake Ontario based drinking water supplies*

➤ Governance

- Agreement MOE/Region of Peel
 - ✓ Phase 1 \$595K
 - ✓ Phase 2 \$2,195K
- Steering Committee
- Support
 - ✓ Researchers
 - ✓ Consultants

Collaborative - Partners

➤ Municipalities/Utilities

- Prince Edward County,
- Cobourg,
- Port Hope,
- Durham Region,
- Toronto,
- Peel Region (Chair),
- Halton Region,
- Hamilton,
- Niagara Region.

➤ Conservation Authorities

- Source Water Protection Regions:
 - ✓ Quinte;
 - ✓ Trent Conservation Coalition;
 - ✓ CTC;
 - ✓ Halton/Hamilton;
 - ✓ Niagara

➤ Environment Canada

➤ MOE

➤ OCWA

- Coordinator
- Project Manager

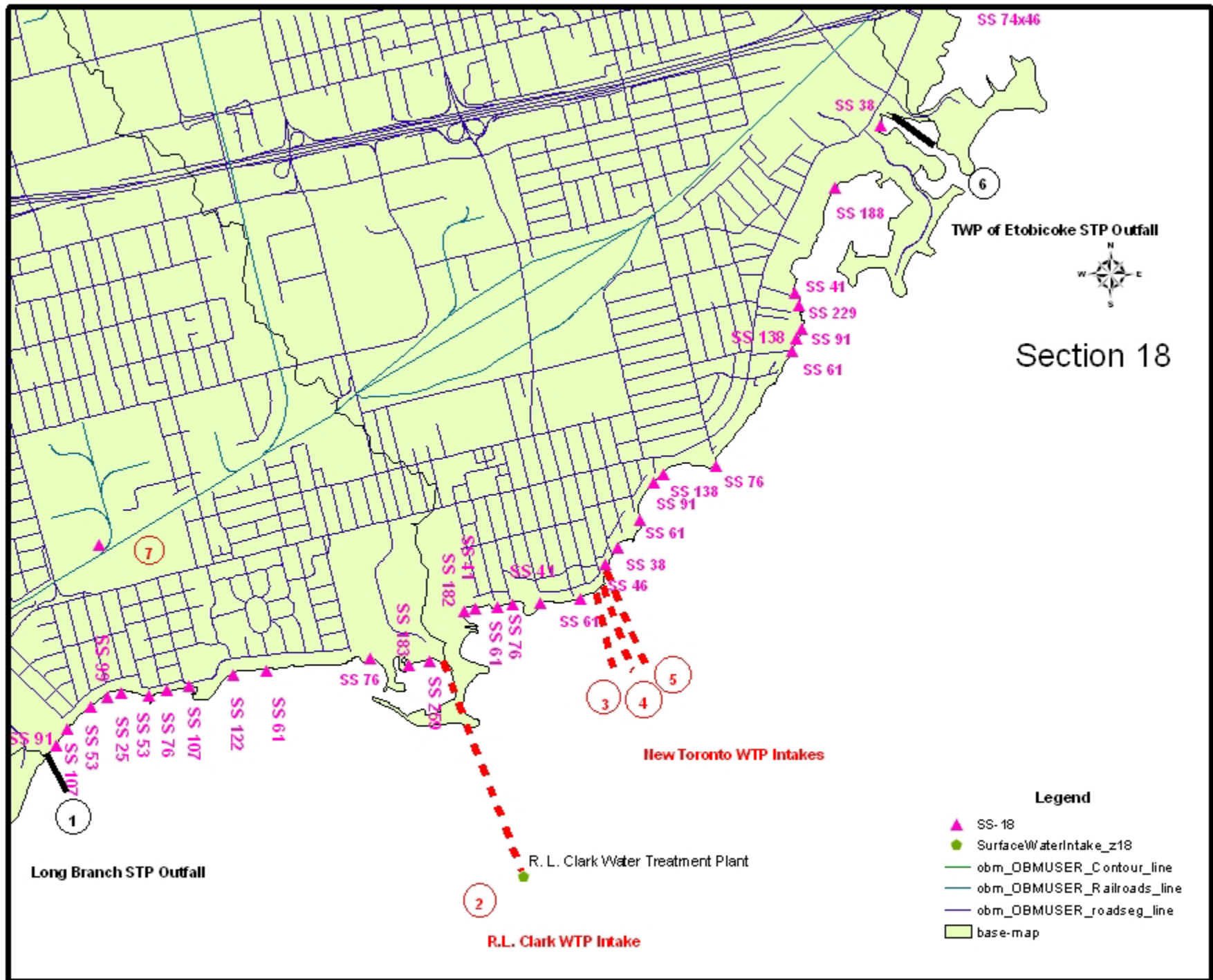
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20 Drinking water systems
33 Intakes

Key Products from Phase 1

- Mapping of outfalls and intakes
- Preliminary watershed loadings
- Plan for pathogen studies
- Public Consultation
- Phase 1 report for each partner including delineation of Intake Protection Zones (IPZs)



Phase 2

- Consultant (Stantec)
 - MOE Module 5 Threats/Issues
 - MOE Module 6 Risk Assessment
- Environment Canada
 - Watershed studies (CAs)
 - Shoreline and lake studies
 - Pathogen studies
 - Information/data management
- Ministry of Environment
 - Science and policy support
 - 2008 Lake Ontario study
- Source Protection Regions
 - Data/information & key for implementation
- Ontario Clean Water Agency
 - Project leadership in support of Chair & Steering Committee

Phase 2 Progress and Issues

- Preliminary Phase 2 reports for 2 pilot sites.
- Pathogen issues/threats/studies
- Chemical threats determined parcel by parcel within IPZ2
- MOE Module 6 – Water Quality Risk Assessment is incomplete...preliminary reports showing similar rankings for a dry cleaner and a WWTP.

Going Forward

- Fulfill obligations under the Peel/MOE agreement
- Provide value added reports with all findings to members
- Contribute to improvement of the approach to source protection – Great Lakes
- Fill major knowledge gaps
 - Winter/extreme weather
 - Pathogens
 - Emerging threats
- Coordination of Lake Ontario/Great Lakes source protection including data/information management

Contact Information

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