

## **ST. CLAIR RIVER – LAKE ST. CLAIR DRINKING WATER PROTECTION PROJECT**

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### **ABSTRACT**

The St. Clair River/Lake St. Clair corridor extends from the outlet of Lake Huron at Port Huron, Michigan to the mouth of the Detroit River at Detroit. Ten communities, including the City of Detroit, have water plant intakes along this corridor that provide treated drinking water to approximately 4 million people. Over 700 chemical spills from Canadian and American sources along this waterway have been documented since 1986. No system existed to monitor for discharged contaminants and provide warning to water treatment operators, regulators and the citizenry.

To address these needs, a regional, multi-jurisdictional initiative to ensure safe drinking water is underway in Macomb, St. Clair, and Wayne Counties and the City of Detroit, with EPA funding of one-million dollars arranged by Congresswoman Candace Miller. The Michigan Department of Environmental Quality, Macomb and St. Clair Counties, and the involved communities are contributing matching funds, resulting in a total project budget of nearly 1.8 million dollars.

The cornerstone of this initiative is the real-time, fully automated analysis of source water and sharing of collected data among the communities along the connecting waters of the St. Clair River, Lake St. Clair, and Detroit River. A web-based data management system with links to all partners has been developed to facilitate data communication between water treatment operators, including automated notification of contamination.

Monitoring devices are located in the water plants and analyze water at the point of intake. Equipment includes multiparameter probes for measuring general water quality parameters, total organic carbon analyzers, fluorometers for detecting petroleum compounds, gas chromatograph/mass spectrometers for detecting selected organic chemicals and data loggers.

This system is enhanced by web-based data sharing that makes the real-time data available to water plant operators and public officials and establishes an alarm/notification system to warn operators of detected contaminants so that responsible public health decisions can follow.

### **KEYWORDS**

Source Water Protection, Real-Time Continuous Monitoring, Early Detection, Web-Based Data Sharing, Alert/Alarm/Notification