

# STATE OF THE STRAIT MONITORING FOR SOUND MANAGEMENT



## A BINATIONAL CONFERENCE ON THE DETROIT RIVER ECOSYSTEM

Convened December 2004 by Great Lakes Institute for Environmental Research, University of Windsor, The Greater Detroit American Heritage River Initiative of Metropolitan Affairs Coalition, The Detroit River Canadian Cleanup, The Detroit River International Wildlife Refuge, The Detroit Water and Sewerage Department, and other organizations.

**Cover photos:** photos left and center (upper and lower): Recreational fishing in the Huron-Erie Corridor (lower center photo by Kurt Byers, Michigan Sea Grant Extension, courtesy of United States Environmental Protection Agency, Great Lakes National Program Office; other photos courtesy of OMNR); upper right: Scientist sampling water, benthic invertebrates and sediment in Lake Erie (photo courtesy of Environment Canada and University of Windsor); lower right: Longear sunfish (*Lepomis megalotis*) (photo courtesy of Nicolas Lapointe)

STATE OF THE STRAIT  
MONITORING FOR SOUND MANAGEMENT

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## 6.2. CITY OF WINDSOR POLLUTION CONTROL SERVICES MONITORING PLAN FOR POLLUTION CONTROL AND PREVENTION

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### Pollution Control Branch Mission

The overall mission of the Pollution Control Branch is to enhance public health and welfare through the efficient, cost-effective conveyance of stormwater and wastewater, to treat wastewater, and to work with industry to protect the environment while sustaining competitiveness. This is accomplished by an organization dedicated to professionalism that anticipates and responds to the changing needs of the community.

### Environmental Support Services Division Goals

The goals of the Environmental Support Services division in carrying out the Branch Mission are to:

- Maintain acceptable control of conventional and priority pollutants by ensuring compliance with federal and provincial pollution control legislation through continued monitoring of City pollution control plants (Figure 1 and Figure 2), industries, storms sewers, and sewage systems
- Achieve further reductions in the amounts of heavy metals and Canadian Environmental Protection Act (CEPA) toxic and Canada Ontario Agreement (COA) compounds being discharged from the City wastewater treatment plants and sewer outfalls to the lowest practicable level
- Demonstrate significant progress towards the virtual elimination of persistent toxic organic substances in the local environment by working with local industries in pollution prevention to sustain a healthy environment and maintain competitiveness as stated in Windsor's Strategic Plan
- Maintain and monitor municipal collection systems and wastewater treatment plants in order to protect the infrastructure through strategic monitoring of industries and watersheds
- Monitor wastewater treatment plants in order to provide a safe environment for employees

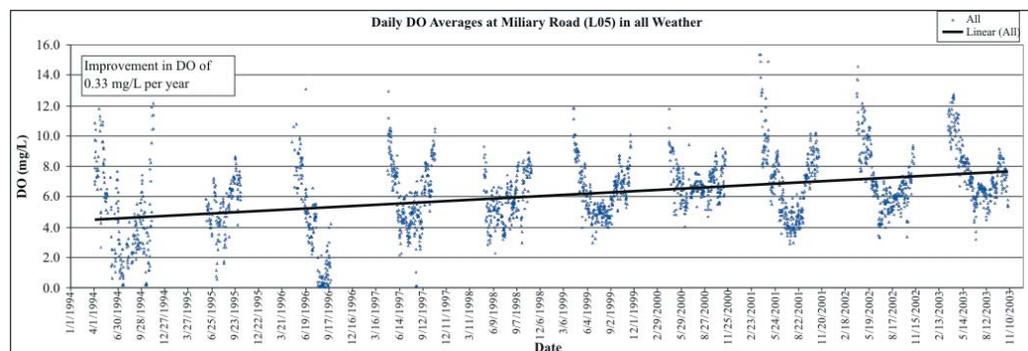


Figure 1. Lou Romano Water Reclamation Plant.



Figure 2. Little River Pollution Control Plant.

## Background

The Pollution Control Environmental Support Services Division’s organizational structure is unique compared to others across Ontario. Conservatively speaking, the staff of four technologists accomplishes what a staff of eight does in a similar-size municipality performing similar duties. This unique structure results in enviable biosolids and effluent quality. This is quite an achievement considering the fact that Windsor is more heavily industrialized than most other municipalities in Ontario.

The key factor contributing to this success is that the Environmental Support Services division has flexibility to deploy human resources. Division staff are trained to carry out all of the different functions. This gives the division the ability to deploy (or redeploy) staff as required.

Since 1970, the City of Windsor has monitored the amounts of conventional pollutants and heavy metals being discharged from both the Lou Romano Water Reclamation Plant (LRWRP, Figure 1) and the Little River Pollution Control Plant (LRPCP, Figure 2). In 1991, the monitoring of effluent and sludge from the plants was expanded to include all the Municipal Industrial Strategy for Abatement (MISA) Priority Pollutants identified by the Ontario Ministry of Environment (MOE). The data on organic contaminants and heavy metals collected to date have been analyzed and a short list of MISA priority pollutants of concern has been developed (Table 1).

Table 1. MISA Priority Pollutants of Concern

Volatile organic compounds (VOCs)	Base neutral acid extractables	Neutral chlorinated compounds	Metals
Xylene ( <i>m</i> , <i>o</i> , and <i>p</i> )	Cresol ( <i>m</i> , <i>o</i> , and <i>p</i> )	Hexachlorocyclopentadiene	Aluminum
1,4-Dichlorobenzene	Di- <i>n</i> -butylphthalate		Boron
Methylene chloride	Methylnaphthalene (1- and 2-)		Copper
Toluene	Dichlorophenol (2,4- and 2,6-)		Zinc
	Indole		Nickel
	Fluoranthene		Iron
	Pyrene		Silver
	Phenanthrene		
	Benz(a)anthracene		
	Diphenyl ether		
	Anthracene		
	Phenol		
	Chrysene		

## **Canadian Environmental Protection Act (CEPA) Toxic List**

A list of 68 substances were targeted for elimination from the environment by the CEPA. Of particular interest to Pollution Control Services are: lead, mercury, benzene, chlorinated wastewater effluent, hexachlorobenzene, inorganic fluorides, inorganic nickel, tetrachloroethylene, trichloroethylene, ammonia dissolved in water, nonophenyl and ethoxylates, and inorganic chloramines.

In 1994-95, the Pollution Control Environmental Support Services division completed a survey of industrial and commercial establishments connected to the City sewer system. The industries surveyed consisted primarily of those whose operations did not involve the use of large amounts of process water. Industries with process water are monitored routinely.

The LRWRP receives hauled liquid wastes (septic tanks, holding tanks, and landfill leachate) by tanker truck from locations throughout Windsor and Essex County. These hauled wastes are a potential source of toxic organics and heavy metals in the plant effluent and sludge. While septic and holding tank wastes are accepted, there are tanks that must first be tested because they may contain industrial waste. An improved inspection/sampling program has been set up to ensure better control of these hauled wastes to reduce the opportunity for illegal disposal. The LRPCP is now also accepting landfill leachate, requiring monitoring and analysis.

As part of the Business Licence program administered by the City Clerk's Department, the Pollution Control Environmental Support Services division routinely inspects service stations, restaurants, and laundries. The purpose of these inspections is to ensure that the businesses have proper sewer connections, waste disposal practices, and maintenance of oil/grease interceptors. If a business does not comply it will not get a Business Licence. These inspections afford the opportunity for Pollution Control staff to educate business owners with respect to the proper disposal of their wastes and related environmental concerns.

Although pollution prevention has come to the forefront in recent years, the Environmental Support Services division has always encouraged many of the concepts of pollution prevention. The philosophy of pollution prevention is incorporated in all the Environmental Support Services division programs. Through various programs, the Environmental Support Services division contacts over 500 companies each year, and provides information and education to those contacted. For expert advice, industry is referred to the Great Lakes Pollution Prevention Centre in Sarnia and the MOE.

Best Management Practises (BMP) or Environmental Code of Management Practice (CMP) can further reduce the amounts of pollutants reaching the sewers. The MOE has developed BMP/CMP manuals for some industrial sectors. The BMP/CMP plans address material storage, material handling, plant site run-off, in-plant transfer, and unloading areas. The Environmental Support Services division disseminates information to the appropriate industries.

### **Additional Programs**

The Environmental Support Services division achieves its goals using the programs discussed above and the following additional programs:

1. Pollution Control Plant monitoring, inspection, and optimization (influent, effluent, dewatering and biosolids)
2. Industrial waste control and monitoring (including overstrength surcharge program)
3. Watershed monitoring program (Detroit River, Little River, and Grand Marais Drain/Turkey Creek)
4. Licence clearance program
5. Emergency response (spills and odour complaints)
6. Laboratory analysis
7. Flow monitoring (sanitary sewer sercharge rebates, industrial waste control and PCP monitoring)
8. Municipal landfill monitoring (This activity has recently been consolidated for all closed landfills in Pollution Control Services.)