

Regulating Water Pollution in Ontario's Municipalities – Windsor's Sewer Use By-law

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Under Ontario's Municipal Act, municipalities have the power to pass sewer use by-laws. The by-laws allow municipalities to regulate discharge of pollutants into the sewer system. Many urban centers in the province have enacted a sewer-use bylaw. However, there is significant variation in the requirements of each bylaw.¹

The limits placed on pollutants in the sewer use by-laws were largely based upon a model sewer use by-law provided by the Ontario Ministry of the Environment (MOE). The most recent version of the model by-law was completed in 1998 and was produced to assist municipalities to develop local sewer use by-laws. Although the MOE committed to update its model, the ministry has not fulfilled its commitment.

Municipalities have looked to each other's by-laws as a means of updating sewer use by-laws. In 1993, the City of Windsor adopted By-law 11446 – a sewer use by-law. At the time, the Citizens Environment Alliance noted several deficiencies in the by-law. More than ten years have passed including 2003, the United Nations Year of Freshwater, yet the by-law has not been revised.

Below is a comparative analysis of the limits on pollutants, pollution prevention and enforcement and monitoring of sewer-use by-laws in the province.² This report is not a comprehensive study of Ontario's regulatory requirements for protection of water quality. However, we hope that this analysis will assist in improving Windsor's sewer use by-law and ultimately reduce water pollution in the Detroit River basin.

Pollutant Limits

Concentration limits are the core of municipal sewer use-by-laws. Both Toronto and Kingston have adopted stringent limits that exceed the recommendations in the MOE model by-law. Windsor's by-law allows greater levels of many pollutants and does not set standards for several of the pollutants identified in the Kingston and Toronto by-laws.

The table below lists the acceptable concentration of selected chemicals that the by-law allows to be released legally into the sewer system.

¹ The provincial government does not require municipalities to implement sewer use by-laws. As of 2000, just over half of Ontario's municipalities had sewer use by-laws.

² Much of the basis of this report and some of the details came from *What's in your Sewers? A Citizen's Introduction to Municipal Sewer Use By-laws in Ontario*, H2infO – The Water Information Network, August 2003.

**Sewer Use By-law Discharge Limits* for a Select Group of Common Contaminants
(figures in mg/L)**

Pollutant	Toronto	Kingston	Windsor	MOE
Arsenic	1	1	1	1
Benzene	0.01	0.01	No limit ^o	0.01
Bis phthalate	0.012	0.012	No limit ^o	No limit ^o
BOD	300	300	400	300
Cadmium	0.7	0.7	2	0.7
Chromium Total	4	4	5	5
Copper	2	2	5	3
Fluoride	10	10	10	10
Hexachlorobenzene	0.0001	0.0001	No limit ^o	No limit ^o
Lead	1	1	5	2
Mercury	0.01	0.01	0.1	0.05
Nickel	2	2	5	3
Nonylphenol ethoxylates	0.02	0.01	No limit ^o	No limit ^o
Oil/Grease – Organic	150	150	120	150
Phosphorus	10	10	30	10
Suspended Solids	350	350	500	350
Trichloroethylene	0.4	0.07	No limit ^o	0.07
Zinc	2	2	5	3

* Limits for sanitary and combined sewers.

^oSpecific limit is not listed in the bylaw. General limit may apply as a result of provincial objectives/guidelines.

Monitoring and Enforcement

Municipal pollution control staffs are primarily responsible for monitoring and enforcing sewer use by-laws. Staff may visit facilities periodically to monitor pollutants being released into the sewer system. If a facility fails to meet the limits for a specific pollutant, usually a municipality will advise implementation of voluntary abatement methods to bring the facility into compliance with the by-law. Most municipalities attempt to work together with the polluter to ensure that pollutant releases are within the prescribed limits within a given timeline. These arrangements are often referred to as “consent accords” or “compliance agreements”.

However, municipalities in Ontario can levy fines for violating sewer use by-laws. Fines generally range from \$5,000 to \$100,000 per violation. Municipalities rarely resort to fines, preferring instead to rely on compliance agreements.

Chronic polluters and a municipality may make arrangements whereby the polluter pays a set fee or rate based upon the quantities of pollutants in excess of the limit. These “over-strength agreements” also exempt the polluter from being charged.

If a municipality fails to sufficiently control what is discharged through the sewer system then it may be prosecuted. Wastewater treatment plants operate under Certificates of Approval (C of A) issued by the MOE. If the conditions of the C of A are violated then a prosecution could take place under the Ontario Water Resources Act.

Pollution Prevention

Amongst the hierarchy of environmental protection activities, pollution prevention is at the top and other practices such as pollution control, remediation and disposal below. Pollution prevention is the most effective practice to avoid the creation of waste and pollution and its dispersal into the environment.

The City of Toronto is the only municipality in the province that requires dischargers to prepare and submit pollution prevention plans. Other municipalities, at best, had a requirement for a waste survey and had some form of pollution prevention educational programming.

In Toronto each facility must submit to the City a complete list of pollutants that it releases and provide detailed plans for reducing the amount of pollutants it generates and discharges into the sewer system. Failure to submit a plan is an offence, but failure to comply with the plan is not. The plan is viewed as a powerful educational tool and as evidence of due diligence in meeting the enforceable discharge limits of the by-law.

The importance of pollution prevention strategies has yet to be recognized by other municipalities. Indeed, the Ministry of the Environment’s model by-law does not refer to enforcing pollution prevention planning.

Mercury is considered to be one of the most toxic pollutants discharged into the Canadian environment. In the Great Lakes basin, mercury is considered a pollutant of significant concern. The Detroit River Area of Concern, designated through the Canada-United States Great Lakes Water Quality Agreement, has been inundated by mercury contamination over the years and mercury continues to be discharged into the river system from a variety of sources, including municipal sewer systems.

In the United States, the Association of Metropolitan Sewerage Agencies evaluated seven major municipal wastewater treatment plants to determine and quantify sources of mercury coming into these facilities. Dental uses were identified as “the greatest contributors to the mercury load”³ and “the largest source by far when compared to average contributions from the other sources...”⁴, at all the plants. The dental uses

³ Association of Metropolitan Sewerage Agencies, *Mercury Source Control & Pollution Prevention Program Evaluation Final Report*, (July 2002), p.26.

⁴ Ibid. p.27.

accounted for almost 40% of the load, on average, more than three times the next largest source.⁵

The City of Toronto's by-law requires dentists to install amalgam separators in their sinks to capture amalgam for disposal at a hazardous waste facility instead of entering the city's sewer system. The by-law also requires dentists to prepare and submit pollution prevention plans for reducing mercury waste. All dentists in Toronto must meet the strict discharge limit for mercury of 0.01 mg/L.

Within the first eight months of Toronto's sewer use by-law coming into effect, mercury levels flowing in the city's sewers fell between 40% and 68%.

In Environment Canada's 2002 National Pollutant Release Inventory Report (NPRI), the City of Windsor's Lou Romano Plant reported that 10.5 kg of mercury (and its compounds) were discharged into the Detroit River.⁶ The facility projected similar releases for the next several years. Mercury once released into water bodies can be converted to a far more toxic form called methyl mercury, which bio-accumulates in fish that may ultimately be consumed by humans.

Few other Canadian municipalities have followed Toronto's lead by requiring dental amalgam separators through a sewer use by-law. Windsor does not require the use of dental amalgam separators and the Ministry of the Environment's model bylaw does not require dental amalgam separators.

Another pollutant of concern listed in the 2002 NPRI report of the Lou Romano and Little River plants was lead (and its compounds). The report shows that, combined, the facilities released more than 1,837 kg of lead. The facilities reported that large quantities of this persistent toxic substance would be released in future years. Lead is extremely persistent in water and when humans are exposed to lead it can result in damage to the brain, nervous system and various internal organs such as kidneys.

Significant quantities of arsenic and cadmium are also released from Windsor's pollution control plants. The suggested limits in the MOE guidelines, even when adhered to by municipalities, may not be sufficient to reduce inputs of harmful substances into waterways. For example, Windsor's arsenic limit adheres to the MOE guideline, yet almost 600 kg were released from Windsor's pollution control plants, according to the 2002 NPRI.

⁵ Ibid.

⁶ For mercury and many of the other persistent toxic compounds at both plants, the NPRI report listed significant quantities of these substances in sewage sludge residue. Contaminated sewage sludge that is applied to land is also a water quality concern throughout Ontario and the Great Lakes basin.

Provincial Role

Provincial governments have not enacted policies and requirements around sewer uses sufficient to protect Ontario's streams, rivers and lakes. The Ontario Municipal Act, while allowing municipalities to enact sewer use by-laws, does not require a consistent sewer use by-law amongst all municipalities. The result is a patchwork of rules across the province and many municipalities have no sewer use restrictions whatsoever.

The provincial government has not implemented several policy commitments, including the Municipal Industrial Strategy for Abatement (MISA) and the Canada Ontario Agreement Respecting the Great Lakes Basin Ecosystem (COA). Both the MISA and COA directly address the volume and toxicity of pollutants discharged into receiving waters through municipal treatment facilities.

The MISA was originally announced in 1988. The MOE proposed that some municipalities would be required to implement and enforce a sewer use control program. The MOE also proposed a comprehensive sewer charge and over-strength surcharge system, the development of a mandatory certification program for municipal sewer use inspectors, and pollution prevention initiatives. Partly as a result of budget cutbacks, the municipal component of MISA was not implemented.

In March 2002, after much delay, the provincial government signed a new five-year COA with the federal government. By this agreement, the Ontario government committed to a number of actions, including: to provide municipalities with technical and/or financial help in pollution prevention and control planning in Areas of Concern; influence reduction in discharges from MISA sectors, and examine and implement new policies and regulations to manage industrial discharges not currently captured under MISA, and; develop best practice guidance documents to help municipalities identify and reduce sources of harmful pollutants and other contaminants discharged into sewers.

The MOE has also committed to implementing recommendation #32 from the Walkerton Inquiry Report, which states, "the provincial government should support major wastewater plant operators in collaborative studies aimed at identifying practical methods of reducing or removing heavy metals and priority organics (such as endocrine disruptors) that are not removed by conventional treatment."⁷

The Environmental Commissioner of Ontario has noted these issues in his annual report and provided further details about sewer use by-laws in Ontario.⁸

⁷ The Honourable Dennis R. O'Connor, *Report of the Walkerton Inquiry, Part Two*, (2002).

⁸ Environmental Commissioner of Ontario, *Choosing Our Legacy, 2003-2004 Annual Report*, (2004), p.37, 39.

Conclusion and Recommendations

Regulating water pollution at the municipal level involves more than one level of government in Ontario. Yet few governments have taken the lead in controlling and reducing pollution from Ontario's sewer systems.

Municipal, provincial and federal governments have not abided by several commitments made to control and reduce water pollution in the Great Lakes basin. Among the fundamental commitments is one contained in the Great Lakes Water Quality Agreement, specifically, to virtually eliminate the input of persistent toxic substances through a philosophy of zero discharge. The discharge of these substances continues and is widespread throughout the basin, as revealed, partially, in the 2002 NPRI report.

Several actions need to be taken by governments in order to reduce and ultimately prevent harm to our streams, rivers and lakes caused by the continual discharge of toxic pollutants through Ontario's sewer systems, including:

1. The provincial government should enact the municipal component of the MISA program with an addition to include consistent standards for sewer use control in all municipalities in the province.
2. The provincial government should move to immediately implement recommendation #32 from the Walkerton Inquiry report.
3. The provincial and federal governments should move quickly to implement the provisions of the COA related to municipal pollution prevention and control planning.
4. The provincial government should implement a requirement for all sewage treatment plants in the province of Ontario to virtually eliminate the discharge of persistent toxic substances as intended in Annex 12 of the Great Lakes Water Quality Agreement.
5. The City of Windsor should revise its sewer use by-law to reflect current environmental standards (up-to-date research), including specific pollutant concentration limits for all toxic substances, and a requirement for industrial, commercial and institutional users to submit pollution prevention plans and abide by the plans, in accordance with the previous recommendations.
6. All current standards, requirements, objectives, guidelines and commitments (including those noted above) should be enacted and rigorously enforced by the appropriate government agencies, including municipalities, the MOE and Environment Canada.
7. Complete annual reports on standards fulfillment and enforcement action regarding municipal sewer uses should be readily available to the public through the Internet.