

# Council Report – Source Control Program & Updated Sewer Use By-law April 21, 2010.

## **1. Executive Summary**

At the Priorities Committee meeting of May 21, 2008, Council authorized staff to update the existing “City of Sudbury Sewer By-law” dated 1973. The updated By-law is now in its final stages of development.

This report will provide Council with the following information:

1. Background to the Sewer Use By-law including goals, objectives, major issues to be dealt with,
2. Source Control Program to introduce, educate and develop an implementation plan, and
3. Monitoring and Enforcement of the Sewer Use By-law.

Greater Sudbury has more than 300 lakes within its boundaries. With our commitment to environmental leadership, protecting these lakes and the natural environment is a main priority for the City of Greater Sudbury. Recent concerns have continued to manifest regarding pollution of lakes and creeks. Specifically, wastewater by-passes that contribute to the pollution of our environment are largely the result of extraneous flows<sup>1</sup> caused by excessive inflow and infiltration during heavy rains and snow melting. In many cases these excessive flows exceed sewer system capacity that may potentially cause treatment plant flooding and system back-ups into residences and businesses if not by-passed.

Also, contaminant discharges into our sewer systems such as fat, oil and grease (FOGs) and toxic chemicals have a very negative impact on our environment and infrastructure systems. They

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<sup>1</sup> Stormwater “clean water” that enters the sanitary sewer system by inflow and infiltration is called extraneous flow

reduce the life cycle and limit the capacity of our systems to convey design flows. They cause clogging of the collection sewer system that requires more frequent cleaning which in turn increases operating costs. Alternatively, required routine maintenance has to be deferred. In addition, chemicals that are discharged into the sanitary systems may upset the efficiency and operation of the treatment plant and/or contaminate the environment. These contaminant or chemical discharges largely originate from the commercial and industrial sectors.

Implementing a Source Control Program is a proven and efficient way to control contaminants at the source and eliminate them from being discharged into the sewer system. Source Control provisions in the proposed By-law will limit extraneous flows and pollution by setting up allowable limits to minimize potential detrimental impact on either our system and/or the environment.

The proposed updated Sewer Use By-law is based on the Canadian Council of Ministers of the Environment (CCME) model Sewer Use By-law and mirrors closely similar Sewer Use By-laws of other municipalities. The updated By-law will bring Greater Sudbury into line with best practices currently in use in many other municipalities including Thunder Bay, Kingston, Cornwall, Barrie, Niagara, Waterloo, Ottawa, and Toronto. The Source Control Program will help protect our environment for existing and future generations, safeguard public health, and minimize costs through effective wastewater management practices.

It is proposed to introduce the proposed Sewer Use By-law and Source Control Program to the community through extensive media advertising and public information and education sessions. The proposed program including implementation schedules, long term monitoring and testing and sampling program and enforcement will also be discussed.

Once the public input has been received, staff will finalize the By-law and return to Council for approval of the final By-law and Source Control Program. Any impact in future operating and capital budgets will be presented to Council as necessary in the future.

## **2. Background**

Years ago, wastewater discharge into creeks, rivers and lakes without treatment was a common practice. This practice is no longer acceptable or tolerable by the community and regulatory agencies. In fact, we now see more organizations and citizens demanding responsible stewardship and protection of the environment.

The updated Sewer Use By-law will regulate allowable discharges to the City's sanitary and storm sewer systems. The requirements laid out in a sewer use by-law provide the foundation for a Source Control Program that aims to ensure that both the sanitary and storm systems operate efficiently and effectively protect the environment.

The City's current Sewer Use By-law was developed in 1973. Since then, significant changes have occurred not only in the wastewater service expectations of a more environmentally aware community, but also in wastewater sector standards and regulations.

The framework defined in the updated Sewer Use By-law enables the development of a Source Control Program which targets contaminant discharge reductions at the source before they enter the City's storm and / or sanitary sewer systems.

Source Control Programs assist system operations to improve the consistency of service to meet customer, environmental, and regulatory requirements. They also help contain and reduce operating costs and capital requirements.

The Source Control Program will have three key components described as follows:

1. Reduce the amount of Inflow and Infiltration (I/I) entering the sanitary sewer system.
2. Eliminate contaminants from sanitary sewer system which plugs our collection system and/or cannot be treated at the Wastewater Treatment Plants. These contaminants cause major disruption to the operation and performance of the plants and could bring the City into non-compliance with current Ministry of the Environment (MOE) regulations. These contaminants ultimately end up in the downstream environment.
3. Hauled Liquid Waste (HLW) is currently discharged at three sites. There is no treatment at these sites. It is proposed to close these three sites and handle all HLW at our main Sudbury Wastewater Treatment Plant which has the capacity to handle these volumes by building a septage receiving station. Environmental Services has already identified funding for the capital cost, for closure of the three sites and building a receiving station, of approximately \$115,000 and \$150,000 respectively. This action will minimize potential significant contamination to the environment.

A brief explanation of each key component is as follows:

### **Inflow and Infiltration (I/I) Reduction Program**

Inflow and infiltration occurs when either ground water or storm water enters the sanitary sewer system. The estimated annual cost to treat I/I was approximately \$300,000 in 2008. Similarly, I/I reduces the capacity of our current sewer system to handle new growth and development.

Consequently our sanitary treatment system will have to be expanded to handle the I/I flows if these flows are not reduced. There would also be a corresponding increase in annual operating costs for the expanded system. Our goal is to minimize I/I throughout our entire system and ultimately eliminate the need for related capital expenditures and operating costs.

The City has recently increased our I/I reduction programs for our municipal infrastructure.

These reduction programs will have to be increased as our system continues to age and deteriorate.

There is also a significant contribution of I/I into our system generated from private connections.

Private connections include eaves through, weeping tiles and sump pump connections. The proposed Source Control Program will outline detailed programs to encourage residents from voluntarily disconnecting from the sewer system. There will be corresponding reduction in both operating and capital requirements with the success of these programs.

### **Contaminant Reduction Program**

Our sewer system, both collection and treatment, are designed to handle and treat domestic wastewater. Contaminants which are primarily generated by commercial and industrial sectors cause significant distress to both the collection and treatment plants. Contaminants such as fat, oil and grease (FOG) plug the sewer system resulting in reduced capacity of the system to handle design flows, increase the risk of system backups and discharges to the environment. There are also significant increased requirements for cleaning and maintenance of physical systems.

The Source Control Program will outline a program to essentially eliminate discharges of these contaminants into the sewer system. The By-law will allow us to handle some contaminants for a fee that can be treated within our treatment plant without disrupting the plants operation.

### **Hauled Sewage Sites (HSS)**

To reduce the potential discharge into the environment of contaminants from the HSS the City will be decommissioning our existing three sites. This project is being done at the request of the MOE and good environmental stewardship.

All hauled sewage will have to come to our Sudbury Wastewater Treatment Plant for discharges and treatment. The updated Sewer Use By-law will outline the mechanism for implementing this program, including testing and enforcement.

### **Desired Outcomes.**

The objectives of a Sewer Use By-law are as follows<sup>2</sup>:

- ✓ Protect public health
- ✓ Protect the environment, property and infrastructure
- ✓ Enable optimum wastewater system efficiency and use
- ✓ Prevent storm water and 'clear' water from entering the system
- ✓ Protection of wastewater sludge quality
- ✓ Reduce operating cost
- ✓ Enable regulatory compliance

These objectives will be accomplished through the successful development and implementation of a Source Control Program. Such programs have successfully been implemented in many Canadian cities and have been instrumental in accomplishing wastewater system management objectives. Canadian municipalities including Thunder Bay, Cornwall, London, Toronto, Ottawa, Region of Peel, Barrie, Hamilton have adopted similar Source Control Programs and Sewer Use By-laws.

### **Proposed Source Control Program.**

The Sewer Use By-law will define the allowable contents and concentration of chemicals that are allowed to be discharged into the sewer system. It is anticipated that the majority of commercial and industrial customers will be able to meet the proposed limits and concentrations.

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<sup>2</sup>Development of Source Control Best Practices Final Project Report prepared by Hew D. McConnell Ltd., May 31, 2002

The By-law will permit the discharge of overstrength sewage that can be treated at our existing plants without disrupting the operation and/or cause environmental concern. The overstrength sewage will be treated for an additional fee to recover our additional operating costs.

The Source Control Program will also outline required monitoring and sampling and testing programs to be implemented to ensure compliance with the By-law.

Also, there will be enforcement provisions in the Sewer Use By-law to handle those who do not comply.

Pollution Prevention (P2) Plans are available to assist customers not being able to satisfy the requirements of the Sewer Use By-law. Staff proposes to work closely with these customers to ensure successful implementation.

### **Program Implementation Plan and Schedule:**

This chart summarizes actions and approximate duration of the implementation plan process.

### **Program Implementation Plan and Schedule:**

Public Consultation	2 months	
Council Review and Approval	2 months	
Public Education and Outreach	12 months	
Create User Inventory Data base	6 months	
Develop & Implement P2 plans	6 months	
Total Enforcement		Start Enforcement

It's anticipated that the implementation plan will take approximately 12 months. During this period we will focus mainly on education, coaching, and voluntary compliance.

## **Costs**

All costs for the development and implementation of the Source Control Program will be covered from our 2010 Water and Wastewater approved Capital Budget. This program will be implemented with our current staff complement. There will be requirements for annual support costs for materials and supplies, laboratory testing etc. We propose to bring these items forward as part of our upcoming future operating budgets as necessary.

## **Fees and Fines**

It is anticipated that a number of commercial and industrial customers will enter into voluntary compliance agreements to permit them time to comply with the By-law. The anticipated fees for the compliance agreements will be set to offset our administrative costs.

Ultimately, if industrial and commercial customers do not comply with the By-law, appropriate fines as set out in the By-law will be levied. We will provide Council with our estimate of these fees as part of the 2012 Operating Budget once the success of the implementation program is known.

It is however, our objective to achieve full voluntary compliance and not require fines.

## **3. Tangible and Intangible Benefits**

### **Intangible Benefits**

With over 300 lakes within our borders, the intangible benefits of this Program relate to our duty to protect this priceless community asset for both the present and future generations, enhance regulatory compliance and improve public health protection.

### **Tangible Benefits**

In addition to enhanced environmental and infrastructure protection, other tangible benefits are identified as follow:



- Capital deferral by freeing up more sewer capacity and extending the infrastructure life cycle.
- Reduction in operating costs including energy and treatment costs at the lift stations and treatment plants.
- Reduction in maintenance costs.
- Private property protection from reduced potential for basement flooding.
- Protecting the property value of existing residences bordering lakes and rivers by reducing contaminants at the source and protecting water quality of our lakes and rivers.

#### **4. Recommendation**

That Council accept the report and authorize staff to proceed with the development of the Sewer Use By-law and Source Control Program in accordance with the report from the General Manager of Infrastructure Services dated April 14, 2010.