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SEWER USE BY-LAW ENFORCEMENT PROGRAM

The Transportation and Works Committee recommends the adoption of the recommendation contained in the following report, April 26, 2006, from the Commissioner of Transportation and Works:

1. RECOMMENDATION

It is recommended that this report be received for information.

2. PURPOSE

This report provides an overview of the Sewer Use By-Law Enforcement Program that has been in place since 1992 and provides a summary of activity in 2005.

3. BACKGROUND

In December 1992, York Region Council adopted Sewer Use By-Law No. S-57-92-155, in compliance with provincial requirements under the Municipal/Industrial Strategy for Abatement (MISA) Program. The MISA program requires York Region staff to monitor the wastewater discharge from industrial and commercial (non-residential) sources within York Region to ensure dischargers comply with the sewer use by-law limits, conditions, and prohibitions.

Subsequently, in January 2005, York Region Council passed and enacted our current Sewer Use By-Law No. S-0064-2005-009. This revised version introduced more stringent metal limits, new organic limits, and definitive conditions regarding acceptance of hauled sewage and hauled waste for disposal at regional facilities. It further addresses pollution prevention planning, ISO 14001 environmental certification for dischargers, and dental amalgam waste disposal issues.

3.1 Sewer Use By-Law Program

The Sewer Use By-Law is a document designed to regulate the discharge of wastewater to sanitary sewers, storm sewers, and land drainage works. The by-law provides the authority for designated municipal staff to enter industrial/commercial premises for the purpose of inspections, taking measurements and obtaining representative samples from the discharge entering the sewer system.

Sewer use by-law enforcement protects the sewer system infrastructure and the receiving wastewater treatment plants from:

- potentially toxic industrial/commercial discharges.
- discharge of material which may block or damage sewers, and,
- discharges that may produce noxious or toxic gases.

Sewer use by-law enforcement also protects streams and other natural water bodies from impacts caused by storm water discharges and runoff from industrial/commercial sites.

York Region has an estimated 19,000 non-residential wastewater sources that are subject to regulation by the Sewer Use By-Law and Enforcement Program. Enforcement activities are aimed at identifying potential overstrength industrial/commercial dischargers by means of distributing waste survey reports, performing inspections, and monitoring wastewater discharges where necessary to determine by-law compliance.

These activities, directed at dischargers we suspect may be in non-compliance with the by-law, are completed to establish a preliminary profile on a potential overstrength discharger. The profile as a result, provides information regarding contacts, type of industrial process, wastewater treatment systems employed by the industry, chemicals and materials stored/used on site, water consumption records, wastewater discharge qualitative data, the general appearance of the sewer lateral (in terms of discoloration, odours, and discharge volumes), the structural integrity of the lotline manhole, and evidence of chemical spills near loading docks and storage areas.

Once a discharger profile is established and sample results indicate the discharger is in non-compliance with one or more of the limits, conditions, or prohibitions within the by-law, further enforcement actions are initiated. Enforcement actions frequently involve compliance meetings and by-law contravention notifications, leading to a compliance action and approval process.

4. ANALYSIS AND OPTIONS

Over the years, the Sewer Use By-Law Enforcement Program has evolved from its initial objective of identifying and documenting potential dischargers through basic information collection, to more emphasis on enforcement activities. As the preliminary task of discharger identification was completed, the annual number of inspections stabilized at current levels. However, the continuing industrial growth at the Region resulted in new potential dischargers entering the wastewater system and continues to expand the program.

4.1 Program Findings

4.1.1 Information Collection

The program conducts ongoing waste report surveys and inspections (generally 45 per year) on a needs basis, supplemented by a region wide sweep (initiated in 2005, resulting in 183 inspections) every other year to ensure a complete capture of any new potential dischargers.

To date, the program has identified approximately 125 industries that are on a regular monitoring schedule. The more substantial surcharge dischargers are sampled monthly, whereas the remaining dischargers are generally sampled on a quarterly basis. Samples are obtained without prior notification to dischargers; this ensures that the wastewater characteristics of the discharge are accurately represented.

4.1.2 Compliance Actions

The by-law allows dischargers in non-compliance (28 by-law contraventions in 2005) to initiate a compliance action plan for our approval (for example, develop and implement a treatment or abatement plan) to ensure that the discharger attains compliance with by-law requirements. The enforcement program typically administers between 15 and 20 compliance actions per year (23 compliance actions in 2005).

Each industry is dealt with on a site specific basis, as each has their own unique characteristics such as chemicals used, volume of discharge, level of sophistication, training, and staff education. For some locations, simple process corrections or improved housekeeping will reduce the waste profile to establish by-law compliance. Others, with more complex processes, require on site waste treatment systems often employing the services of consultants to ensure that treatment or abatement equipment is designed and operated correctly. The discharger is entirely responsible for determining what compliance actions are required to comply with the sewer use by-law.

4.1.3 Surcharge Industries

Industries which discharge conventional (treatable at the sewage plant) pollutants in excess of by-law limits are permitted, without pre-treatment, to discharge to the sanitary sewer system in return for payment of additional sewage service rates to compensate the region for any additional costs of sewage treatment operation, repair, and maintenance of the sewage works. Our current by-law permits surcharge agreements for the following conventional parameters: suspended solids, biochemical oxygen demand, phenolics, animal/vegetable oil & grease, phosphorus, and total kjeldahl nitrogen. In 2005, the program captured 43 industries with surcharges.

The amount of the surcharge billing to an industry is determined using the Region's surcharge formula. The surcharge formula determines the total annual loading (kilograms of waste) by correlating the average contaminant concentration (in excess of the by-law permissible limit) to the total wastewater discharge volume. The surcharge formula is as follows:

$$\text{Surcharge \$} = [\text{average parameter concentration (mg/l)} - \text{bylaw limit (mg/l)}] \times \text{discharge volume (cubic meters)/1000} \times \text{Surcharge Rate (\$/kg)}.$$

The by-law also has a provision for a minimum surcharge fee (\$300 plus an administrative fee) applied to dischargers with a calculated surcharge amount of less than \$300.

Surcharge billings (billing data summary, invoice request, correspondence) are progressively tracked throughout each year by our Program Data Management System, resulting in a yearly summary of surcharge sources and revenues. Surcharge billings are generated at the close of each year and forwarded to our finance department for processing and collection.

The Sewer Use By-Law Enforcement Program also administers to other routine wastewater administrative responsibilities to assist operations. A summary of basic program statistics for the year 2005 is presented in Table 1 below.

Table 1
2005 Program Statistics

Discharger Monitoring	
Site Sampled	126
Sites on Regular Monitoring Schedule	116
Monthly Surcharge Samples	14
Quarterly Samples (incl. Surcharge)	102
Spot Samples	10
Enforcement Activities	
Contraventions	28
Enforcement Actions	28
Surcharge Billings	43
New Agreements	6
Site Inspections	183
Discharger Compliance Actions	23

5. FINANCIAL IMPLICATIONS

One of the program objectives is to recover regional wastewater treatment costs resulting from overstrength sewage discharges into the sewer system from surcharge industries. The total surcharge revenue can vary considerably each year depending on industry circumstances such as compliance initiatives, and the arrival and departure of surcharge industries to and from York Region.

Program expenses include staff salaries, equipment, purchase/maintenance vehicles, plus annual fuel and laboratory costs. In 2005 for example, surcharge revenues and program expenses were roughly equivalent, as noted in Table 2 below.

Table 2
Surcharge Revenue and Program Expense
Summary of 2005 Revenue and Expenditures

Surcharge Revenue	\$234,363.00
Program Expense	\$232,965.00

The following (Figure 1: Surcharge Revenue & Program Expense) graph provides an historical perspective for revenues and expenses. It indicates (1) that surcharge revenues are progressively decreasing. This clearly outlines the success of the program, as decreasing revenues are a direct result of reductions in overstrength sewage loading to the sewer system; and, (2) that program expenses are gradually increasing due to continued growth of the program, and generally rising costs.

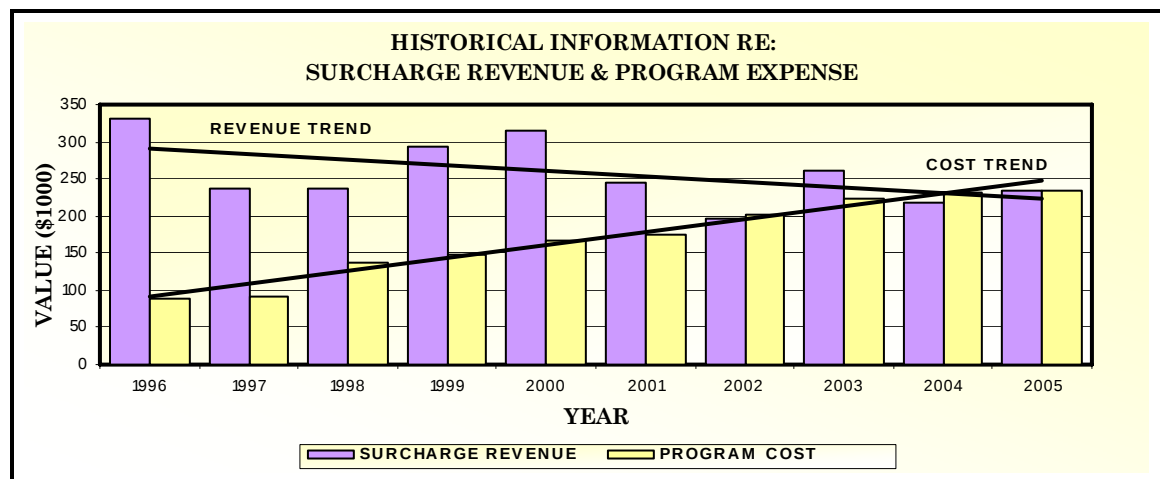


Figure 1. Surcharge Revenue & Program Expense

6. LOCAL MUNICIPAL IMPACT

The program serves the local sewer systems by:

- Protecting the wastewater infrastructure from the discharge of potentially damaging chemical constituents and materials, thus reducing maintenance costs.
- Facilitating cost recovery for sewer line repairs (by providing historical discharger sample results).
- Enhancing the occupational health and safety margins (toxic or otherwise injurious conditions) for employees involved with sewer maintenance or monitoring activities.
- Implementing sewer system investigations to identify contaminant sources and resolve non-compliance issues (on request by municipalities).
- Providing a means of discharger location and identification for emergency related events (for example, spill response, sewer line collapse).
- The local municipalities are not responsible for the cost of the Regional sewer use by-law enforcement program.

The Sewer Use By-Law Enforcement Program addresses Regional concerns regarding overstrength discharges into local municipal sanitary sewer systems that ultimately drain into York Region's sanitary sewer system. The Region is responsible for the treatment of all wastewater collected through the sanitary sewer system.

Local municipalities are responsible for the operation and maintenance of their respective sanitary and storm sewer collection systems; they are further responsible for storm sewer system discharges into the natural environment.

7. CONCLUSION

The Sewer Use By-Law Enforcement Program is an effective instrument to provide long-term benefits regarding sewage treatment plant efficiencies, infrastructure integrity, reductions in infrastructure operational and maintenance costs, and, sewer related occupational health and safety issues.

The net result of this continued vigilance is reduced pollutant loadings to the sewer which benefits the wastewater treatment process, ultimately contributing to the sound stewardship of the environment. This program widely promotes to the general public, and to the business community, York Region's commitment to deal unequivocally with water resources related compliance issues that can impact the integrity of the natural environment.

The Senior Management Group has reviewed this report.