TORONTO

STAFF REPORT
ACTION REQUIRED

Sewers By-law Administration – Response to Request for Information

Date:	September 27, 2012
To:	Public Works and Infrastructure Committee
From:	General Manager, Toronto Water
Wards:	All
Reference Number:	P:\2012\Cluster B\TW\pw12008

SUMMARY

The purpose of this report is to respond to a request from the Public Works and Infrastructure Committee for additional information on several specific items relating to the administration of the Sewers By-law.

The report also describes proposed changes to the City's industrial waste surcharge program including the addition of Total Kjeldahl Nitrogen (TKN) as a treatable parameter, the introduction of new rates for treatable parameters and a new formula for the calculation of fees. It further seeks authority for staff to consult with water stakeholders on the feasibility of adding hexavalent chromium as a subject pollutant, under the Sewers By-law for pollution prevention (P2) planning purposes.

RECOMMENDATIONS

The General Manager, Toronto Water, recommends that:

1. City Council approve the proposed changes to the City's industrial waste surcharge program, including the addition of Total Kjeldahl Nitrogen (TKN) as a treatable parameter, the introduction of new rates for treatable parameters and a new formula for the calculation of fees, as outlined in this report.

2. City Council authorize staff to consult with the City's water stakeholders on the feasibility of adding of Hexavalent Chromium as a subject pollutant, under the Sewers By-law for pollution prevention (P2) planning purposes and report back through the appropriate Committee in 2013.

3. This report be forwarded to the Budget Committee for its meeting on November 7, 2012 to be considered concurrently with the 2013 Water and Wastewater Rates and Service Fees report and Toronto Water's 2013 Operating Budget, along with the appropriate recommendations to amend the Municipal Code, as detailed in this report.

Financial Impact

In 2011, the City had industrial waste surcharge agreements with 154 companies and recovered approximately $8.5 million in costs. The City is not currently recovering its full cost of providing waste water treatment under the industrial waste surcharge program.

Implementation of the proposed changes to the City's industrial waste surcharge program as described in this report would result in an estimated increase in revenue of $3.6 million into Toronto Water's Operating Budget comprised of increases of $0.584 million in 2013; $0.605 million in 2014; $0.605 million in 2015; $0.605 million in 2016; $0.605 million in 2017; and $0.605 million in 2018. Incremental implementation costs related to the addition of TKN as a surcharge parameter are minimal and will be accommodated within the exiting operating budget.

Anticipated revenue increases, phased in over a six-year period, will provide for a full cost recovery by the end of implementation period, while allowing companies sufficient time to make changes to their internal processes and budget forecast.

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its meeting on April 18, 2012, during consideration of report PW14.1 entitled Sewers By-law 2010 and 2011 Compliance and Enforcement, the Public Works and Infrastructure Committee requested the General Manager, Toronto Water, to report to the Public Works and Infrastructure Committee on October 11, 2012, on the following:

a. a proposed policy and user fee changes for industrial waste surcharge agreements for 2013;

b. a summary of compliance agreements including the name of the company, timelines and conditions for compliance;

c. the new process for implementing new authority related to non-compliance and Block 2 rate;

d. the outcome of the review of the "inspection and sampling metrics" as requested by the Auditor General in 2008;

e. the quantities of biochemical oxygen demand (BOD), phenolics (4AAP), total phosphorus (TP) and total suspended solids (TSS), that are discharged into the sewer system that exceed the wastewater sanitary concentration limits as a result of industrial waste surcharge agreements;

f. additional parameters for pollution prevention (P2) planning; and

g. in consultation with the City Solicitor, on mandating the implementation of pollution prevention plans (P2 plans) prepared by businesses consistent with the intent of the Auditor General's recommendation.

A copy of the Committee decision related to this request is available at http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.PW14.1

ISSUE BACKGROUND

To protect aquatic environments, public health and safety, sewage works, wastewater treatment processes and to control biosolids quality, federal and provincial governments regulate the quality and quantity of substances of concern discharged into the environment via the municipal sewer systems. As a result, municipalities have enacted Sewers by-laws.

On July 6, 2000, Toronto City Council adopted a Sewers By-law found in Chapter 681 of the Municipal Code. The By-law was drafted after consultation with Environment Canada, the Ontario Ministry of the Environment (MOE), the Canadian Centre for Pollution Prevention (C2P2), and the World Wildlife Fund. It underwent public consultation to obtain input from industry, industry associations, environmental groups and other stakeholders. The City of Toronto was one of the first municipalities in Canada to incorporate pollution prevention (P2) planning requirements into its Sewers By-law. The Sewers By-law sets strict limits on the quantity of heavy metals and toxic organic compounds in wastewater discharged to the sanitary and storm sewers and natural watercourses. Toronto Water's Environmental Monitoring and Protection (EM&P) unit is responsible for ensuring that all industrial, commercial and institutional facilities comply with Toronto’s Sewers By-law.

Some waste streams discharged into the City's sewers from food processing plants (i.e. breweries, dairies, and meat packers) can be treated at the City’s sewage treatment plants. In these cases, sample data is used to evaluate the amount of waste generated by these companies for the purpose of recovering the costs of providing the treatment service. This is accomplished through surcharge agreements. This makes good business sense for both parties because the City can treat these wastes effectively and at less cost than if the industries had to install their own treatment equipment. In addition, it provides an incentive for the industries to stay within the City.

At its meeting on September 21 and 22, 2011, during consideration of report PW7.6 from the Public Works and Infrastructure Committee, City Council requested the General Manager, Toronto Water, to prepare an annual report to Council on Toronto Water activities, including Sewers By-law compliance and the Outfall Monitoring Program. As requested, Toronto Water submitted an Annual Report to the April 18, 2012 meeting of the Public Works and Infrastructure Committee and at this meeting was requested to report back with additional information on several specific items relating to the administration of the Sewers By-law.

This report was prepared in consultation with the General Manager, Economic Development and Culture, the City Solicitor and the Deputy City Manager and Chief Financial Officer.

COMMENTS

1. Policy and User Fees for Industrial Waste Surcharge Agreements

Companies that have entered into an industrial waste surcharge agreement with the City may exceed sanitary concentration limits, subject to the limitations set out in the agreement and Chapter 681, for any of the four treatable parameters: biochemical oxygen demand (BOD), phenolics (4AAP), total phosphorus (TP) and total suspended solids (TSS). Most companies enter into an industrial waste surcharge agreement to meet the Sewers By-law requirements, as it is generally more cost effective than installing a wastewater treatment system on site. Total Kjeldahl Nitrogen (TKN) is not currently a treatable parameter.

Industrial waste surcharge agreements are to be in a form prescribed by the General Manager, Toronto Water and satisfactory to the City Solicitor. The formula for the calculation of the surcharge amount is prescribed in the agreement itself and refers to a rate for sewage treatment in $/kg excess as established by the City. Currently, companies are charged a rate of $0.57/kg for any of the four treatable parameters.

In 2011, the City had industrial waste surcharge agreements with 154 companies and recovered approximately $8.5 million in costs.

In 2008, the Auditor General's Report on *Protecting Water Quality and Preventing Pollution* recommended that: "The General Manager, Toronto Water, develop a fee policy for all surcharge agreements that reflects the cost of sampling and testing and that all companies subject to surcharge agreements be billed on a cost recovery basis." The Auditor General's Report also stated that: "the surcharge rate used to calculate surcharge fees has not changed in over 10 years whereas costs to treat have increased. At this moment it is not possible to determine whether program costs are fully being recovered".

In April 2011, City Council requested the City Manager to undertake a User Fee Review to establish a user fee policy and framework that will ensure consistency in developing and administering the City's user fee program and report the outcomes to Executive Committee.

The fundamental premise for charging user fees is that where a service provides a direct benefit to specific users or groups of users, the full cost of providing the service should be recovered from those users through user fees. Also in April 2011, the Toronto Industry Network (TIN) requested the City to consider adding Total Kjeldahl Nitrogen (TKN) as a surcharge parameter under the industrial waste surcharge program.

In response to the requests and in consideration of a new City-wide User Fee Policy, Toronto Water retained Stantec Consulting Ltd. (Stantec) as an independent third party to evaluate the user fees charged under the industrial waste surcharge program and to evaluate the feasibility of adding TKN as a surcharge parameter. Stantec's final report, entitled *"Over Strength Surcharge Review for Toronto Water, City of Toronto"* is provided in Appendix A.

Two alternative formulas for the calculation of fees commonly used by Ontario municipalities and detailed in the Water Environment Federation (WEF) Financing and Charges for Wastewater Systems (3rd Edition) were reviewed in this study.

Type I Formula: are fees developed on an individual, compounded parameter weight basis. Type I represents a more complex analytical approach but more accurately captures the relative treatment cost of each surcharge parameter. Application of the Type I Formula produced individual parameter costs similar to other comparable Ontario municipalities surveyed.

Type II Formula: are fees developed on a total volume basis. Application of the Type II Formula produced a volumetric cost value significantly in excess of other Ontario municipalities surveyed.

Based on this analysis, Stantec recommended to the City that the Type I Formula be considered in developing future user fees under the industrial waste surcharge program. They also recommended that TKN be included as a surcharge parameter on the basis that:

(i) current removal of TKN is associated with capital and operational costs at City wastewater treatment plants;
(ii) the cost of TKN treatment is already recovered by other Ontario municipalities through surcharge programs, and therefore addition of this parameter will bring the City into alignment with practices of other municipalities;
(iii) it addresses an industry need; and
(iv) the addition of TKN is easily addressed by the City's existing surcharge program and processes thereby allowing full cost recovery to the City with minimal incremental implementation cost.

Table 1 summarizes the recommended rates for each surcharge parameter, including the unit costs for operating and maintenance, reserve funds for capital improvement projects and program administration and Table 2 provides a comparison between rates proposed for Toronto and those of other Ontario municipalities using the Type I Formula.

Table 1: Recommended Rates ($/kg) for Treatable Parameters

Unit Costs	BOD/4AAP	TSS	TP	TKN
Operating & Maintenance	0.20	0.24	0.72	0.33
Capital Improvement	0.40	0.33	0.92	0.83
Administration	0.02	0.02	0.02	0.02
Recommended Rate ($/kg)	**0.62**	**0.60**	**1.69**	**1.18**

Parameters: Biochemical Oxygen Demand (BOD), Phenolics (4AAP), Total Suspended Solids (TSS),Total Phosphorus (TP) and Total Kjeldahl Nitrogen (TKN)

Table 2: Comparison of Rates ($/kg) for Toronto and other Ontario Municipalities (using Type I Formula)

Municipality	BOD/4AAP	TSS	TP	TKN
Toronto Recommended	0.62	0.60	1.69	1.18
York Region (2012/2013)	0.42 / 0.53	0.42 / 0.53	2.10 / 2.65	0.42 / 0.53
Hamilton (2012)	0.67	0.53	1.43	2.03
Ottawa (2012)	1.44	0.77	2.31	5.75
Durham Region (2012)	0.48	0.48	0.48	0.48

Parameters: Biochemical Oxygen Demand (BOD), Phenolics (4AAP), Total Suspended Solids (TSS),Total Phosphorus (TP) and Total Kjeldahl Nitrogen (TKN)

In general, the recommended rates are in line with the other Ontario municipalities. Toronto's proposed rates compare best with the rates charged by the City of Hamilton. If adopted, the rates would be higher than York Region for BOD and TSS but significantly lower than Ottawa for the same parameters. Toronto's proposed rate for TP is lower than both York Region and Ottawa and the proposed rate for TKN is lower than both Hamilton and Ottawa. Durham Region's rates are lower for every parameter.

Stantec further recommended:

(i) an initial fee of $800 for establishing all new surcharge agreements including permits in order to recover administrative costs;
(ii) a three to five year phase-in period to allow companies sufficient time to plan for the new rates; and
(iii) a consultation process to explain the rationale for re-assessing the current industrial waste surcharge program, to introduce the recommended formula and rates and discuss implementation approaches.

In order to determine the impact of the Type I Formula and rates on individual companies and the City's cost recovery, an analysis was performed using 2011 sampling data. The

154 companies were subdivided into 4 categories (i.e. minimum fee, low volume, medium volume and high volume). Table 3 illustrates the impact on seven specific companies within these four categories. Table 4 compares the cost recovery to the City from all 154 companies using the current method and the proposed method.

Table 3: Impact on Companies with Industrial Waste Surcharge Agreements

Company Type	Example No.	Fee - Current Formula & Rate	Fee - Proposed Formula & Rates	Increase $ (%)
Min. Fee ($500) 15 companies	1	$500	$500	$0 (0%)
Low Volume (< $5 K) 41 companies	2	$1,517	$2,401	$884 (58%)
	3	$4,623	$5,062	$439 (10%)
Medium Volume ($5K < $75K) 70 companies	4	$36,366	$41,937	$5,571 (15%)
	5	$70,420	$122,236	$51,816 (74%)
High Volume (> $75K) 28 companies	6	$141,237	$251,735	$110,497 (78%)
	7	$1,684,181	$2,254,378	$570,197 (34%)

Table 4: Impact on City's Cost Recovery

Company Type	Current Cost Recovery	Proposed Full Cost Recovery	% Increase Average (Range)
Min. Fee 15 companies	$7,500	$7,500	0% (NA)
Low Volume 41 companies	$74,000	$104,000	41% (9%-167%)
Medium Volume 70 companies	$1,722,000	$2,343,000	36% (5% - 114%)
High Volume 28 companies	$6,685,000	$9,642,000	44% (9% - 123%)
Total 154 companies	**$8,488,500**	**$12,096,500**	**43% (0% - 167%)**

The impact on individual companies varies significantly primarily due to the introduction of the Type I Formula. Under the existing formula, the surcharge fee is based only on the parameter that exceeds the by-law limits the most. Under the Type I Formula, the surcharge fees are based on all parameters that exceed the by-law limits. Therefore, companies with only one treatable parameter will see the lowest increases while companies with two or more treatable parameters will see higher increases.

Based on Stantec's review, the City is not currently recovering its full cost of providing wastewater treatment under the industrial waste surcharge program. The shortfall (i.e. $8.5 million vs. $12.1 million) is approximately $3.6 million (or 30% of 12.1 million).

Two stakeholder consultation sessions were held in June 2012 to present the results of Stantec's review and to receive comments. All companies with industrial waste surcharge agreements as well as the following groups were invited to attend: Toronto Industry Network (TIN), Environment Probe, Citizens for a Safe Environment, STORM Coalition, Riversides Stewardship Alliance, Water Watch, Toronto Environmental Alliance, Pollution Probe, Lake Ontario Waterkeeper, Canadian Environmental Law Association, Environmental Defence Canada and Ecojustice.

Written submissions were received by G&K Services, Norampac Inc., TIN, Viasystems North America Inc. and Select Food Products Limited. All submissions, except G&K Services which did not comment on TKN, are in support of the addition of TKN as a surcharge parameter. Select Food Products Limited stated that the treatment costs for the contaminants as presented are acceptable, comparable in costs and still better than some municipalities. TIN expressed several concerns with the proposed changes including: the proposed pricing models yield cost increases that are unacceptably high; capital improvement charges should not form part of the recommended rate; and that BOD and TSS should not be charged for as the wastewater treatment plants are efficient in processing these items.

Toronto Water staff are recommending that the Type I Formula and rates proposed by Stantec be adopted and phased-in over a six-year period starting on January 1, 2013 using an annual adjustment factor. This recommendation considers all of the comments received from the various stakeholders and works towards achieving the User Fee principle of full cost recovery. Table 5 illustrates how an adjustment factor applied to the new Type I Formula and rates would incrementally increase the City's current cost recovery to full cost recovery by 2018. The average annual increase to companies over this period of time would be approximately 7%.

Table 5: Recommended Implementation of Full Cost Recovery

Year	Formula Adjustment Factor	Estimated Cost Recovery	Annual increase in Cost Recovery	Average Annual % Increase
2012		$8,488,500		
2013	0.75	$9,072,375	$583,875	6.9%
2014	0.80	$9,677,200	$604,825	7.1%
2015	0.85	$10,282,025	$604,825	7.1%
2016	0.90	$10,886,850	$604,825	7.1%
2017	0.95	$11,491,675	$604,825	7.1%
2018	1.00	$12,096,500	$604,825	7.1%
Total			**$3,608,000**	**42.5%**

Draft Council Recommendations – To implement the recommended changes, staff are proposing that the Public Works and Infrastructure Committee adopt in principle the changes to the City's industrial waste surcharge program as described in this report, and then refer the matter to the Budget Committee meeting of November 7, 2012, so that the recommendations can be included as part of 2013 Water and Wastewater Rates and Service Fees report to be considered concurrently with Toronto Water's 2013 Operating and Capital Budgets. A draft of the Council recommendations is as follows:

City Council authorizes effective January 1, 2013, the following amendments to the City's industrial waste surcharge program:

a. *Municipal Code Chapter 681-6 be amended to include Total Kjeldahl Nitrogen (TKN) as a treatable parameter;*

b. *Municipal Code Chapter 441 Fees and Charges, Appendix A, Schedule 3, Wastewater Services be amended to include the following rates for treatable parameters:*

Parameter	*Rate ($/kg)*
Biochemical Oxygen Demand (BOD)/ Phenolics (4AAP)	*0.62*
Total Suspended Solids (TSS)	*0.60*
Total Phosphorus (TP)	*1.69*
Total Kjeldahl Nitrogen (TKN)	*1.18*

c. *Municipal Code Chapter 441 Fees and Charges, Appendix A, Schedule 3, Wastewater Services be amended to include an initial fee of $800 for the establishment of new surcharge agreements;*

d. *Type I Formula as per the Water Environment Federation Financing and Charges for Wastewater Systems (3rd Edition) be used for the calculation of surcharge fees; and*

e. *The following annual adjustment factors be applied to the Type I formula to allow for the gradual transition to full cost recovery over a six-year period in order to allow companies sufficient time to make changes to their internal processes and budget forecasts:*

Year	*Adjustment Factor*	*Year*	*Adjustment Factor*
2013	*0.75*	*2016*	*0.90*
2014	*0.80*	*2017*	*0.95*
2015	*0.85*	*2018*	*1.00*

2. Summary of Compliance Agreements

A company that is in violation of the discharge limit for a parameter (i.e. pollutant) listed under Chapter 681- Sewers Table 1 (sanitary and combined sewers) and Table 2 (storm sewers) will be issued a notice of violation (NOV). The NOV letter requires the company to bring its discharge of a parameter of concern into compliance with Chapter 681. The company must take steps to bring its non-complying discharge of effluent into compliance with Chapter 681 and, where it is unable to do so in an immediate manner, may propose a compliance plan and seek to enter into a compliance agreement with the City to take meaningful steps to address its non-compliance (Compliance Program).

Under the Compliance Program, the company is required to submit a proposed plan providing the list of activities the company will undertake to bring their facility into compliance with the Sewers By-law. Each activity must have a commencement date and a completion deadline. The plan is reviewed by Toronto Water staff, and when approved, a Compliance Agreement is signed by both parties. The Agreement stipulates sampling and reporting requirements for the company and may include pollution prevention techniques or installation of wastewater treatment equipment or a combination of both.

In 2010, there were 30 Compliance Agreements established with 24 companies. Similarly in 2011, there were 32 Compliance Agreements established with 25 companies. Appendix B provides a summary of Compliance Agreements for 2010 and 2011 including the name of the company, timelines and conditions for compliance.

3. Revised Eligibility Criteria for Block 2 Rate

City Council on November 29, 30 and December 1, 2011, adopted, effective January 1, 2012, amendments to Municipal Code Chapter 849-18 "Eligibility For Block 2 Rate" which authorize, among other things, the General Manager, Toronto Water, to resolve a company's non-compliance under Chapter 681, as it affects their entitlement to the Block 2 Rate, generally through a con-compliance agreement under section 681-7 of Chapter 681, provided that the resolution can be achieved within six (6) months.

Prior to this Municipal Code amendment, a company was removed from the Block 2 Rate once it received an NOV for non-compliance with the Sewers By-law. The company was then eligible to be re-instated to the Block 2 Rate once it demonstrated compliance with the Sewers By-law. This approach was administratively burdensome for City staff and problematic for companies. As the sampling and testing process and billing periods generally do not enable an immediate adjustment to the Block 1 Rate in the case of non-compliance, companies often faced a retroactive adjustment to the Block 1 Rate sometimes leading to cash flow issues. Where a non-compliance could be resolved in a relatively expeditious manner, it was administratively cumbersome for City staff to make adjustments back and forth between the Block 1 and 2 Rates.

Under the revised process, if a company receives the first NOV in a given calendar year, depending on the severity of the non-compliance, it will still be entitled to the Block 2 Rate if the company resolves the non-compliance in a timely manner acceptable to the General Manager. However, if a company receives a second NOV in the same calendar year, the company will lose entitlement to the Block 2 rate unless a compliance plan acceptable to the General Manager is submitted by the company and a compliance agreement is entered into and adhered to within six months of the second NOV.

Ultimately, if a company receives a third NOV in the same calendar year, it will be removed from the Block 2 Rate from the date of the third NOV and will remain off the Block 2 Rate until such time as the company has demonstrated to the satisfaction of the General Manager that the company has been in compliance with the Sewers By-law for at least 1 year since the date of the third NOV.

In certain instances, the company will lose the Block 2 Rate automatically. For example, if a company fails to provide a spill report within 5 days, or if a company is being prosecuted, then the company will lose the Block 2 Rate until the issue is resolved.

4. Review of Inspection and Sampling Metrics

Toronto Water uses an established sampling and inspection target for companies based on risk potential to pollute. To allocate staff resources effectively and ensure attention is given to those companies posing the greatest risk to the sewer system, wastewater treatment plants and the environment, all facilities are categorized as either: High Potential (HP); Medium Potential (MP); or Low Potential (LP) to pollute.

In October 2008, the Auditor General recommended that: "The General Manager, Toronto Water review inspection and sampling targets to ensure that they are reasonable given risks to pollute, and staff resources available and report to City Council by September 2009 on recommended targets and resources required to meet those targets".

In response to this direction, Toronto Water reviewed the inspection and sampling targets identified in its operational practice and implemented a re-organization of the EM&P unit in late 2008. Since 2008, the EM&P unit workload has been reviewed on an annual basis to determine where improvements can be achieved and in 2010 a further re-alignment of work was implemented.

The sampling targets for High and Medium Potential (HP & MP) companies were reviewed in 2011 and it was found that the HP metrics were reasonable. Based on this review, it was determined that the target sampling frequency for MP companies was difficult to achieve and, as a result, was reduced from once every two months to once per quarter year. This change became effective as of October 1, 2011. Toronto Water will be monitoring the effectiveness of the new MP metric in late 2012.

The process of assessing a company's potential to pollute and setting and reassessing sampling and inspection goals is a continuous process. Based on sampling and inspection results, the category for a company's potential to pollute can be changed as required.

Table 6 provides the sampling and inspection tasks performed in the years 2010 and 2011 for High and Medium potential industries. Based on the HP and MP metrics, the resources within EM&P are reasonable as metrics have been collectively met by 80% or more in 2011 for inspections and sampling.

Table 6: Sewers By-law Inspection and Sampling Metrics for 2010 and 2011

	2010 High Potential	2010 Medium Potential	2011 High Potential	2011 Medium Potential
Companies Sampled	83	340	93	379
No. of Sampling Events	878	1052	952	1269

Sampling Events Required (Target)	976	1593	1045	1591
Sampling Completion Rate (%)	90%	66%	91%	80%
No. of Annual Inspections	67	162	75	289
Annual Inspections Required (Target)	83	293	90	342
Inspection Completion Rate (%)	81%	55%	83%	85%

Since 2008, Toronto Water By-law Officers also inspect for compliance with the Water Supply By-law (Municipal Code Chapter 851) for Drinking Water Backflow Prevention Device (BFP) installations and other associated requirements. The Water Supply By-law Backflow requirements are primarily applicable to the property owner (or landlord in many cases) while discharges under the Sewers By-law to the sewer system are the responsibility of the discharger (or tenant in many cases), however parts of Chapter 851-8 C & D can apply to tenants as well as owners and both the occupant and owner may be held responsible under Chapter 681. There are many times whereby repeat visits to the same facility are required to address both By-laws but more so to ensure that the property owners are aware of the Backflow Prevention Program. This is inefficient and Toronto Water has been trying to find ways to streamline and improve this situation.

5. Estimate of Waste Discharged above By-law Limits through Industrial Waste Surcharge Agreements

Most companies enter into an industrial waste surcharge agreement as it is generally more cost effective for the City to treat the waste than installing or expanding a wastewater treatment system on-site. Appendix C lists companies that have entered into an industrial waste surcharge agreement along with the average excess amount of each treatable parameter discharged over the By-law limit.

The data used to calculate the fee is based on composite sampling conducted by Toronto Water. The excess amount of each parameter is calculated by taking the average of each company's composite sampling results over 4 quarters and subtracting the By-law limit of each specific parameter to calculate an excess amount. Any non-applicable (N/A) entry means that the parameter is not listed as part of the company's surcharge agreement. An entry of 0 mg/L in the table refers to the average of the sampling results for that specific parameter listed on their agreement not resulting in an excess amount over the By-law limit. Table 7 below provides the estimated combined total for 2010 and 2011 for each surcharge parameter based on mass loadings.

Table 7: Estimate of Waste Discharged above By-law Limits under Industrial Waste Surcharge Agreements

Year	BOD	4AAP	TSS	TP
Combined mass loading totals for 2010 and 2011 (kg)	**29,447,778**	**43**	**7,837,538**	**17,590**

Parameters: Biochemical Oxygen Demand (BOD), Phenolics (4AAP), Total Suspended Solids (TSS), Total Phosphorus (TP)

6. Additional Subject Pollutants for Pollution Prevention (P2) Planning

Biosolids are a nutrient-rich organic material resulting from the biological treatment of sludge generated during the treatment of municipal wastewater. In 1998, City Council approved an end to the incineration of biosolids at the Ashbridges Bay Wastewater Treatment Plant. The biosolids were to be used partly for spreading on agricultural land with the remainder used as fertilizer in the form of pellets. This necessitated improvement in the biosolids quality to meet or exceed the provincial guidelines. Based on the provincial guidelines for biosolids and the federal quality requirements for certain organics, a list of 38 parameters, 11 heavy metal and 27 toxic organics, called "subject pollutants" was created by Toronto Water. These subject pollutants were to be the basis for pollution prevention (P2) planning requirements for facilities to reduce and/or eliminate them and to continuously improve biosolids quality. The list of subject pollutants has not changed since its inception in the year 2000.

The discharge limit in the Sewers By-law for hexavalent chromium is 2.0 mg/L (milligrams per litre); however, hexavalent chromium is not listed as a specific subject pollutant. Instead, total chromium is listed as a subject pollutant which encompasses all states of chromium. Total chromium is the sum of trivalent and hexavalent chromium and has a discharge limit of 4 mg/L in the Sewers By-law.

Toronto Water has been considering adding hexavalent chromium to the list of subject pollutants requiring pollution prevention (P2) plan under the Sewers By-law in light of sampling data it has observed related to this substance. Hexavalent chromium is a carcinogen and a much more toxic chemical than trivalent chromium. Because of its toxicity, it is important to flag hexavalent chromium for reduction and/or elimination from wastewater entering Toronto's sewers and wastewater treatment facilities.

All chromium metal plating operations start off with the use of hexavalent chromium and its pH must be meticulously controlled to reduce the hexavalent chromium to trivalent chromium. In some cases, Toronto Water found the concentration of hexavalent chromium was almost equal to the total chromium, which means that the P2 option of reducing chromium from hexavalent to trivalent was not being implemented properly.

Further, Toronto Water found the pH of the wastewater to not be indicative of proper reduction of hexavalent chromium to trivalent chromium in the discharges of some companies. Toronto Water has enforced the Sewers By-law for those companies who exceed the limits of total chromium. Toronto Water would like to add hexavalent chromium as a subject pollutant to ensure companies are properly monitoring and treating this subject pollutant.

About 70 facilities in Toronto had total chromium results of 0.1 ppm or greater and may be impacted from the addition of hexavalent chromium. It is expected that adding hexavalent chromium as a subject pollutant will have minimal impact to industry as most of these facilities already have P2 Plans for Total Chromium. As noted above, the benefit

of adding hexavalent chromium as a subject pollutant for P2 planning purposes is to focus a company's attention on reducing and/or eliminating hexavalent chromium.

To further explore this matter, Toronto Water would like to hold stakeholder consultation meetings regarding the possible addition of hexavalent chromium as a subject pollutant, under the Sewers By-law for pollution prevention (P2) planning purposes and will report back in 2013 on the results of that process.

7. Mandatory Implementation of Pollution Prevention Plans

The Sewers By-law requires companies discharging certain identified pollutants to prepare pollution prevention (P2) plans. In 2008, the Auditor General's Report on *Protecting Water Quality and Preventing Pollution* recommended a reassessment of the City's authority to enforce the implementation of P2 Plans in light of the *City of Toronto Act, 2006* ("COTA"). The Report specifically recommended that: "The General Manager, Toronto Water, in consultation with the City's Legal Division, reassess the City's authority to enforce the implementation of pollution prevention plans. Should it be determined that no such authority exists, the General Manager consider whether seeking such authority is necessary".

In consultation with the City's Legal Division, we have determined that the City has authority to enforce the implementation of P2 Plans.

While the City may have the authority, implementing such authority around P2 Plans may not yield the intended environmental improvements as industry would limit their planned actions for reduction.

A Washington State Department of Ecology Paper addressing implementation of source control and pollution prevention plans concluded that it had the potential to boost implementation of plans dramatically, but could also result in the revision of most plans to address only easily-attainable goals, – the "low hanging fruit" - rendering the net pollution emissions less significant. Washington State Department of Ecology has not made implementation mandatory under its laws.

Similarly, Ontario has adopted a voluntary approach to reduction plan implementation under the *Toxics Reduction Act, 2009* ("*TRA*") because their research indicated that companies tend to set more aggressive goals in non-binding situations. The Canadian Institute of Environmental Law and Policy notes that the Ontario *TRA* was modelled after the successful Massachusetts *Toxics Use Reduction Act*, which similarly does not require the implementation of P2 plans.

The Federal Government's legislation, the *Canadian Environmental Protection Act* ("*CEPA*") allows the government to require a person or class of persons to prepare *and* implement a P2 Plan. However, the Federal government has been hesitant to exercise these powers under the legislation. To date, only seven pollution prevention plans have

been ordered under *CEPA*. A House Standing Committee Report from May 2007 noted that there is no real data to determine whether the legislation is achieving its objectives.

There are a number of additional challenges and difficulties should the City consider requiring implementation of P2 plans. These challenges are discussed below.

In many cases, sewer use matters may involve corrective action that falls under the Province's jurisdiction. For example, a company discharging volatile organic compounds listed in the Sewers By-law with a specific limit may require air treatment technology to remove the VOCs from the wastewater stream. In this case, a company must apply to the Ontario Ministry of the Environment for an Environmental Compliance Approval (formerly known as Certificate of Approval) and demonstrate that the company can meet the MOE's air quality standards.

City staff are not experts in each individual manufacturing process and would have to contract with experts in the multitude of manufacturing fields to validate whether the implementation plan of a company is to the satisfaction of the City. Also, if a business chooses not to implement a particular option, or fails to achieve a particular target, does this mean that it has failed to implement its P2 Plan as a whole? This raises issues in how the City would address the matter. If it were to approach the courts with enforcement, it is not clear that the City would be successful in its efforts.

Another consideration is whether mandatory implementation could discourage businesses from operating in Toronto, or create the perception that operating in Toronto is more onerous than elsewhere. Many companies have already expressed concerns that the City's Sewer Use By-law is too restrictive as compared to other municipalities.

Finally, there would be additional administrative costs to the City of mandating the implementation of P2 plans. Extra staff resources would be required at various stages including the inspection of facilities, reviewing compliance targets and increasing enforcement activity. It is also reasonable to anticipate that there will be increased legal costs of defending challenges to a new approach.

These costs can be a barrier to meaningful enforcement of a new implementation approach if not properly resourced. Toronto Water currently prioritizes it work based on risk to the sewer system, wastewater treatment plants and the environment. Additional resources would be required for Toronto Water to ensure that all business owners submit plans or comply with due dates and to follow up on all identified violations.

In addition, a new implementation approach would impose new costs on the various facilities themselves. While the current By-law allows facilities flexibility in times of financial hardship, a legal requirement to implement the P2 plan could make survival for small and medium sized enterprises difficult as they face more barriers to P2 implementation than their larger counterparts. It is not clear that there would be significant added value to making mandatory the implementation of P2 Plans versus the

costs to Toronto Water and potential litigation challenge it could face for enforcing a mandated P2 implementation program.

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SIGNATURE

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ATTACHMENTS

Appendix A: Over Strength Surcharge Review for City of Toronto, Final Report
Appendix B: List of Facilities with a Compliance Program in 2010 and 2011
Appendix C: Summary of Waste Discharged above By-law Limits through Industrial Waste Surcharge Agreements for 2010 and 2011