



## City of Guelph

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### Water & Wastewater Billings Exemptions Study IC&I Stakeholder Engagement

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Final Report

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Submitted by:



DFA Infrastructure International Inc.

## Table of Contents

<b>1</b>	<b>Background .....</b>	<b>2</b>
<b>2</b>	<b>Methodology .....</b>	<b>2</b>
2.1	Categorizing IC&I Stakeholders.....	3
2.2	Holding IC&I Stakeholder Interviews .....	3
<b>3</b>	<b>IC&amp;I Stakeholder Interviews .....</b>	<b>4</b>
3.1	Stakeholder Participation .....	4
3.1	Results of Interviews.....	6
<b>4</b>	<b>Water Volume Diverted from Sewer System .....</b>	<b>9</b>
<b>5</b>	<b>Conclusions &amp; Recommendations.....</b>	<b>12</b>
5.1	Conclusions.....	12
5.2	Recommendations.....	13

### APPENDICES

Appendix A: IC&I Stakeholder Interview Questions

Appendix B: Sample Email to IC&I Stakeholders

# 1 Background

The City of Guelph (City) is reviewing its water and wastewater rate structures and rates. A component of the review involves a *Billing Exemptions Review Study* to identify and assess potential opportunities to reform the respective rate structures and user fees for water and wastewater services. The objective is to achieve fairness and equity to customers, which is a fundamental principle of the rate review, while at the same time ensuring full cost recovery. The study is nearing completion by the City with the assistance of BMA Management Consultants Inc. (BMA), Metroline Research Group (Metroline) and DFA Infrastructure International Inc. (DFA).

This report focuses on DFA's component of the Billing Exemptions Review Study, which is the IC&I stakeholder engagement to gather information and identify opportunities for billing exemptions in the context of fairness and equity. It makes recommendations, for consideration by the City, that are intended to inform billing policy changes.

# 2 Methodology

The methodology used for the market research related to Industrial Commercial and Institutional (IC&I) customers included

- reviewing background information on the IC&I customers;
- developing and administering market research for small and large IC&I customers;
- developing appropriate questions and conducting IC&I customer interviews; and
- analysis of results, recommendations for exemptions and report preparation

Baseline data sources included City files on IC&I customer accounts, 2015 annual consumption, MPAC classification, etc. which were refined based on discussions with staff.

Data presented in the research report entitled "Evaluation of Wastewater Utility Funding Impacts and Opportunities for Impact Mitigation associated with the implementation of Sewer Surcharge Incentives for the Industrial Commercial and Institutional (ICI) Customer Sector, July 29, 2015" prepared by W. Galliher, A.Sc.T was also utilized to supplement information gathered during the stakeholder engagement.

## 2.1 Categorizing IC&I Stakeholders

Categorizing IC&I stakeholders included

- analyzing the existing information such as IC&I customer accounts to categorize customers (stakeholders) by type of business and “small” and “large” based on annual consumption;
- assessing consistency in consumption throughout the year compared to water treatment plant production to assess the extent to which customer demand may contribute to peak plant production and capacity needs;
- identifying customers with over-strength (sewer surcharge) agreements and, to the extent possible, those that could be generating over-strength sewage based on the type of business; and
- reviewing the categorization of customers with the study team.

## 2.2 Holding IC&I Stakeholder Interviews

The objective of the interviews was to gather specific information on the operations and views of up to ten (10) targeted stakeholders. The process included

- identifying stakeholders to be interviewed based on the type of businesses, consumption levels and patterns, exemption requests they may have already made etc. A larger pool of candidate stakeholders was identified for interviews to allow for those that declined participation;
- developing questions to obtain more details on each stakeholder’s operations e.g. purpose of water use, supplementary treatment, periods of increase water usage, volume of water used in process and not returned to the wastewater system, landscaping water use, water conservation efforts, handling of wastewater produced, availability of technical reports, etc.;
- reviewing the questions with study team prior to holding interviews. The final interview questions are included in Appendix A;
- contacting stakeholders to arrange interviews; and
- conducting interviews and analyzing and reporting the results.

## 3 IC&I Stakeholder Interviews

### 3.1 Stakeholder Participation

The number and type of customers (by MPAC Classification) that were identified for interviews are summarized in Table 3-1. This list was based on the obtaining as broad a representation of the types of businesses and consumption levels as possible and was reviewed by the study team prior to finalizing.

**Table 3-1: IC&I Stakeholders Contacted**

<b>No. of IC&amp;I Stakeholders</b>	<b>Types of Businesses</b>
19 Industrial	<ul style="list-style-type: none"><li>• Automotive Parts</li><li>• Agricultural Parts</li><li>• Machining/ Fabrication</li><li>• Fibreglass</li><li>• Plastics/Resin</li><li>• Food /Beverage</li><li>• Dairy</li><li>• Pharmaceutical</li><li>• Bricks/Stone</li><li>• Wholesale Industrial</li></ul>

<b>No. of IC&amp;I Stakeholders</b>	<b>Types of Businesses</b>
1 Commercial	<ul style="list-style-type: none"> <li>• Lab Testing</li> </ul>
3 Institutional	<ul style="list-style-type: none"> <li>• Primary/ Secondary Education</li> <li>• Tertiary Education</li> <li>• Health Care</li> </ul>

Approximately 23 stakeholders were contacted by telephone and/or email to indicate our interest in and purpose for meeting with them to discuss their operations. These included nineteen (19) industrial, one (1) commercial and three (3) institutional customers. The Guelph Chamber of Commerce was also contacted to participate in the interviews. Our request was directed through the Chamber's Industrial Committee for consideration by its members.

Stakeholders were given the choice of in-person or telephone meetings to accommodate their respective schedules. Most opted for the telephone interviews. The interview questions were emailed to the stakeholders in advance of the interviews as a guide to discussions. A copy of the introduction e-mail requesting an interview is included in Appendix B.

Eight (8) stakeholders (comprising seven (7) industrial and one (1) institutional) participated in the interviews including one (1) respondent through the Chamber of Commerce Industrial Committee that was already on the interview list. All others did not respond although follow-up phone calls were made and emails sent. One (1) declined to participate.

One of the responding stakeholders is a parent company in the auto manufacturing industry representing twenty four (24) high consumption customer accounts including three (3) of those listed for interviews. Information was provided by the parent company for all twenty four (24) locations.

### 3.1 Results of Interviews

The results of the interviews with seven (7) stakeholders representing thirty (30) IC&I water and wastewater customer accounts are summarized in Table 3-2. It reflects the main themes from discussions with the stakeholders

**Table 3-2: IC&I Stakeholder Interview Results Summary**

No.	Discussion Item	Summary of Stakeholder Responses
1.	Water Uses	<ul style="list-style-type: none"><li>• Drinking &amp; sanitary uses (washrooms, hand washing, etc.)</li><li>• Cafeteria (cooking, washing, etc.) where applicable</li><li>• Most use water for process cooling with losses through evaporation particularly during the summer.</li><li>• Two use steam for product manufacture</li><li>• One uses water as a product ingredient.</li><li>• Most stakeholders use water for plant /facility washing/cleaning.</li><li>• Limited irrigation by industrial customers. Irrigation more prevalent at schools with sports fields and irrigation systems</li></ul>
2.	Water Treatment	<ul style="list-style-type: none"><li>• Most industrial stakeholders adjust the water received from the city to suit their specific process requirements. Typical treatments include deionization, reverse osmosis, water softening</li></ul>

No.	Discussion Item	Summary of Stakeholder Responses
		and carbon filtration
3.	Consistency of Use	<ul style="list-style-type: none"> <li>Industrial water use is generally consistent throughout the year. There may be some increased demand depending on the production levels and processes that are active at the time.</li> <li>Industrial peak consumption and month of peak use varies by facility but generally within a reasonable range of the with plant peak production (factor of 1.21). One stakeholder's operation is more seasonal and tends to have much higher peak demand during the summer.</li> <li>Water use at schools is consistent during the school year but drops off during summer except for those schools with sports fields requiring irrigation.</li> </ul>
4.	Water Sources	<ul style="list-style-type: none"> <li>Most stakeholders use City water only.</li> <li>One stakeholder supplements City water with remediated ground water which accounts for approximately 10 percent of water used.</li> </ul>
5.	Water Conservation	<ul style="list-style-type: none"> <li>Most industrial stakeholders have water conservation programs in place. These are typically driven by cost reduction objectives related not only to the cost of water but also chemical and energy costs.</li> <li>Programs include water reuse and recycling and very limited ground irrigation. One has also installed more efficient updated washing equipment</li> </ul>
6.	Water Smart Business	<ul style="list-style-type: none"> <li>Most are not aware of the program.</li> </ul>

No.	Discussion Item	Summary of Stakeholder Responses
	Program	<ul style="list-style-type: none"> <li>Those that are aware of the program believe that the administrative requirements are too time-consuming for the potential payback and of the opinion that participation is not worthwhile. Therefore future participation is unlikely.</li> </ul>
7.	Water Use Measurement & Reporting	<ul style="list-style-type: none"> <li>Approximately 50 percent of industrial stakeholders measure water use through meters at key locations within their respective processes.</li> <li>Water use at schools is measured by the respective water meter at each property location.</li> <li>Almost all industrial stakeholders would be willing to install additional meters as part of a City program if there is a reasonable payback</li> <li>Most prepare monthly, quarterly or annual reports on water use for internal purposes (and ISO 14001 requirements in one case)</li> <li>Most would be willing to prepare and submit a report to the City if required as part of a rebate program. One stakeholder suggested that the contents of the report should be prescribed to avoid any disagreements with the City regarding assumptions made, etc.</li> </ul>
8.	Discharge to Sanitary Sewer	<ul style="list-style-type: none"> <li>Most industrial stakeholders discharge approximately 50 percent to 60 percent of their water volume back to the sanitary sewer.</li> <li>In a few cases discharge can be up to 70 percent to 80 percent depending on the time of year, the processes that are in operation and level of evaporation.</li> <li>One stakeholder does pH adjustment prior to discharge.</li> <li>One stakeholder has a portion of its wastewater (mostly oily water/ coolant mixtures) taken</li> </ul>

No.	Discussion Item	Summary of Stakeholder Responses
		offsite for treatment outside of the City.
9.	Support for Low Income Residential Customers	<ul style="list-style-type: none"> <li>• Many are non committal regarding paying more for water to provide relief to low income residential customers.</li> <li>• One stakeholder indicated that it is already paying a premium rate.</li> <li>• Some indicated that there are other support programs already available to assist low income residential customers</li> <li>• Some indicated that their respective companies have programs that provide support to community causes.</li> <li>• One may be willing to pay more but would require proof that the funds are used for relief to low income residential customers</li> </ul>

## 4 Water Volume Diverted from Sewer System

The primary purpose of sewage rebate programs is to provide rebates to customers who divert a high percentage of the volume of water they purchase from the City, from the sewer system. In these cases the water is used in such as manner that reduces the volume returning to the sewer system so the rebates are offered on the basis of fairness and equity to these customers.

High level estimates of the volume of water that is diverted and may qualify for rebates under a sewage rebate program were made by first identifying customers who would potentially participate and secondly estimating the percentage of water that is diverted. Assumptions were made based on our assessment of the results of the interviews that:

- Only the high volume customers that consistently divert a significant portion of water would participate. These would be mainly high volume manufacturing and food and beverage customers;
- Customers who have already been communicating with the City about cost exemptions (regardless of water consumption levels), would be interested in participating; and
- The sewage rebate program would apply mainly to industrial customers which is a common feature of most programs in use in other jurisdictions.

Table 4-1 summarizes the volume estimates by customer class. No commercial customers are included as noted. Commercial consumption is also generally lower relative to industrial and institutional classes and uses tend to be the typical water uses (bathrooms, kitchens, etc.) that return a large percentage of the volume to the sewer system. The volume estimated for the food and beverage sector is based on the discussions with one (1) stakeholder and information contained in the report entitled "Evaluation of Wastewater Utility Funding Impacts and Opportunities for Impact Mitigation associated with the implementation of Sewer Surcharge Incentives for the Industrial Commercial and Institutional (ICI) Customer Sector, July 29, 2015".

It is estimated that approximately 803,000 m<sup>3</sup> of water is diverted from the sewer system. Depending on the threshold volumes established under a sewage rebate program, some of all of this volume may qualify for the rebate.

**Table 4-1: Estimate of Diverted Water Volume**

<b>Customer Class</b>	<b>Annual Water Consumption (m3)</b>	<b>Percentage of Volume Diverted from Sewer System (percent)</b>	<b>Volume Water Diverted from Sewer System (m3)</b>
Industrial (except Food & Beverage)  30 Customer Accounts	1,048,615	50 percent	519,906
Industrial (Food & Beverage Only)  8 Customer Accounts	1,563,136	17 percent	270,154
Institutional  3 Customer Accounts	17,760	75 percent	13,320
TOTAL	2,629,511	31 percent	803,379

## 5 Conclusions & Recommendations

The following are the main conclusions and recommendations based on the interviews held with IC&I stakeholders:

### 5.1 Conclusions

1. Most stakeholders rely on the City as their sole source of water supply.
2. Many make adjustments to the chemistry of City water to suit their unique needs.
3. Water consumption by most stakeholders is fairly consistent throughout the year.
4. Most have already implemented water conservation measures and will continue to do so if there are cost savings.
5. Many are not aware of the Water Smart Business Program. However those that are aware find it too highly administrative with limited payback.
6. Most discharge between 50 percent and 80 percent of purchased water back into the sanitary sewer system but pay for 100 percent discharge. Some also pay additional for third party treatment and disposal.
7. Most have meters or are willing to install meters and report on water use to the City as part of a sewer rebate program
8. There is no onsite wastewater treatment and some offsite treatment by a third party
9. There appears to be no commitment to pay more for water to support low income households.
10. Approximately 803,000 m<sup>3</sup> of water purchased is diverted from the sewer system based on high level estimates of consumption by customers who may participate in a sewage rebate program.

## 5.2 Recommendations

The following should be considered when developing policies on the water and sewer rate structures:

1. Maintaining a single uniform volumetric rate as opposed to block rates. IC&I water consumption is fairly consistent throughout the year and is not likely to significantly influence peak water production. Therefore the need for high volume block rates to encourage reduction in peak consumption by IC&I customers to manage production capacity does not appear to be necessary;
2. Introducing a sewer rebate or similar program to allow IC&I customers the opportunity to pay only for the sewage volumes discharged into the sanitary sewer for treatment by the City. The features of such a program should include
  - a minimum diversion threshold to qualify for a rebate in the 20 percent to 30 percent range because most discharge between 50 percent and 80 percent of their water back into the sewer;
  - a requirement for reporting to the City on water use in order to become eligible to participate in the program;
  - prescribed contents for the water use report for easy review and use as support for rebates to customers; and
  - overall easy administration for both the City and customers
3. Because of the non-committal responses received regarding paying more for water to support low income households the City should consider implementing separate accounting and reporting on funds used for that purpose, should it decide to implement such a program.

The following should be considered regarding the Water Smart Business Program:

4. Taking steps to reduce the program's administrative requirements on the part of the customer to improve the likelihood of participation in the future; and
5. Enhancing promotion of the program to improve awareness.

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## Appendix A

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### IC&I Stakeholder Interview Questions

## INTERVIEW QUESTIONS – IC&I CUSTOMERS

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1. What is your primary business?
2. How many locations (facilities) do you operate in Guelph?
3. Can you provide an overview of the processes and how water is used at each location (facility) e.g? employee use, heating, cooling, used in product, cleaning, lawn irrigation, etc.?
4. Do you treat the water before it is used in any of the processes? If so, what type of treatment (e.g. reverse osmosis, carbon filters, electrolysis, etc.)?
5. Is your water consumption generally consistent throughout the year or is it significantly greater in some months? If so, which are the months of highest consumption?
6. If consumption is highest during the summer (June to September) is it because of lawn/ yard irrigation?
7. Do you use sources of water other than the municipal supply? If so, what are the sources, how much water is supplied from these other sources and where is it generally used?
8. Did you implement or do you plan to implement water conservation measures? If yes can you indicate what those were or might be (e.g. water reuse, using smart meters for grounds/ lawn irrigation)?
9. Are you aware of and do you plan to participate in the City's Water Smart Business Program (previously called the Capacity Buy Back Program)?

## INTERVIEW QUESTIONS – IC&I CUSTOMERS

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10. If you were aware of the Water Smart Business Program but did not participate, is there a particular reason why you did not participate?
11. How do you measure the volume of water used in each part of the process at each facility? Are there meters for measuring volumes at each process?
12. Would you be willing to install meters (at your cost) at appropriate locations within your operations to more accurately measure water use and volumes discharged to the sanitary sewer in order to support an exemption from sewer charges?
13. Do you prepare a report on water use? If yes, then how often is it prepared? Is it done by staff or externally? Would you be willing to prepare an annual report (at your cost) for the purpose of submitting it to the City to support an exemption on the sewer charges?
14. What percentage of the annual water volume purchased from the City returns to the sewer system as wastewater?
15. Do your facilities discharge wastewater to the sanitary sewer system? If so are you aware of the City's Sewer Use By-Law?
16. Can you provide a reasonably accurate estimate of the wastewater volume that enters the City's sewer system?
17. Where does the wastewater that enters the sanitary sewer come from e.g. washrooms, process waste, etc.?

## INTERVIEW QUESTIONS – IC&I CUSTOMERS

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18. Is there any type of wastewater that is not discharged to the sanitary sewer system? If yes then what type of wastewater? What is the reason for not discharging into the sanitary sewer system (e.g. contaminated, does not meet Sewer Use By-law, etc.)?
19. Is there any on-site treatment? If yes then what type of treatment?
20. Is the wastewater taken off site for treatment? What is the cost of third party treatment? Does any of it end up at the City's wastewater treatment plant through hauled waste service providers?
21. Would you be willing to pay more for water and wastewater to support programs that would be designed to assist low income residential customers (e.g. high water bill exemptions, low income rebates, etc.)?

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## Appendix B

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### Sample Email to IC&I Stakeholders

**APPENDIX B: SAMPLE EMAIL TO IC&I CUSTOMERS**

Dear \_\_\_\_\_,

Thanks for taking the time to speak with me.

A bit of background - our firm was retained by the City of Guelph to engage with industrial commercial and institutional (IC&I) customers regarding water use and discharge to the sewers. The intent of our work is to formulate recommendations for exemptions from certain rates and charges to improve the fairness and equity to customers.

Where we are at this point is setting up meetings/ phone calls with a sample list of IC&I customers to review how they use water and wastewater services, etc. We will be reporting back to the City after these interviews with recommendations for policy changes based on our review of the information we gather and discussions with the customers.

I would like to set up either a phone or in-person meeting with you later this week or early next week. To help guide our discussion here is a list of questions attached. These give an idea of the items we wish to cover. Of course if there is anything else you would like to discuss we will do so. Have a look and call me to discuss and we can go from there.

Please feel free to contact Emily Stahl at the City for confirmation of our role at:

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Our office is (905) 938-0965 or my cell at (905) 321-9874 if you have any questions.

Thanks again and I look forward to hearing from you soon.

Best regards

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