



HAMILTON WATER
WATER IS LIFE

Public Works Committee
April 7, 2014
Item 7.3



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Hamilton Water

Proposed Sewer Use By-law

Environmental Monitoring & Enforcement

April 7, 2014

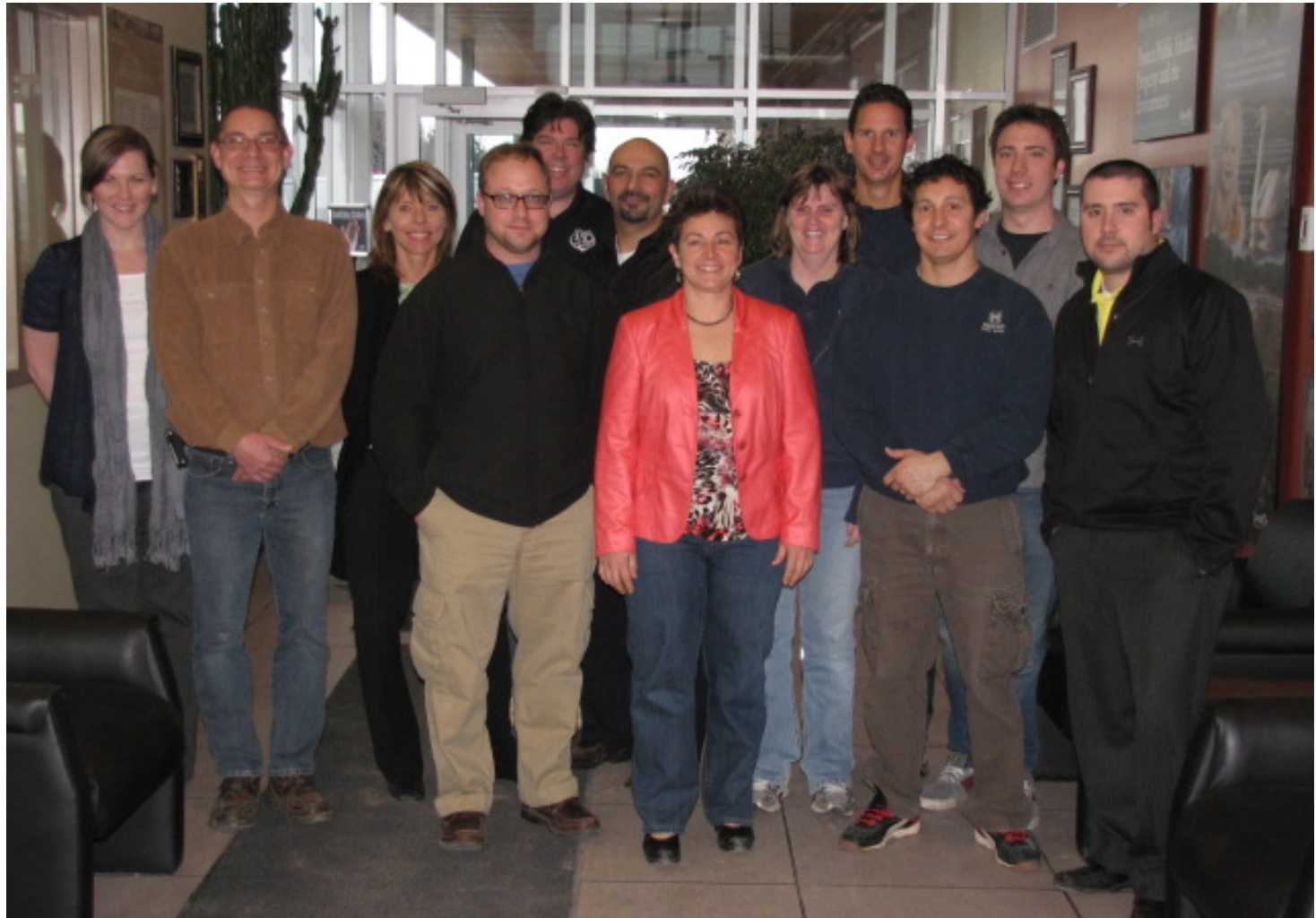
Providing services that bring our City to life!



- Community
- People
- Processes
- Finance



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From Left (Back): Cari Vanderperk, Chris Banitsiotis, Debbie Saunders, Glenn Noble, Mike Fama, Sherrie Colonna, Mike Bown, Adam Gallant

From Left (front): Allan Rodek, Sherry Vanderheyden, Nelson Vidal, Dave Alberton,

Absent: Lisa Young, Hector Quintero

Who are we?

- Public Works Department
 - Hamilton Water Division
 - Compliance & Regulation Section
 - Environmental Monitoring & Enforcement Unit

Team of 13 people:

- 5 Environmental Enforcement Officers
- 4 Environmental Monitoring Technicians
- 1 Environmental Technologist
- 2 Supervisors
- 1 Superintendent



What do we do?

- Sewer Use By-law regulates the discharge of matter to the sanitary, combined and storm sewer systems with the following principal objectives:
 - Protect WWTP and infrastructure
 - Protect natural environment
 - Reduce H&S risks to sewer workers
 - Protect biosolids

How do we do it?

- Discharge Surveys
- Facility inspections
- Sampling & Monitoring
- Progressive enforcement
- Permits
- Spills response





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Existing Sewer Use By-law 04-150

- Current SUB is based on the 1988 model drafted by the M.O.E and adopted by most Ontario municipalities over 25 years ago
- Current SUB has been amended several times, including the following:

Years	Amendments
2004	Amalgamation of the City of Hamilton
2006	Organic parameters, provisions on chlorides and sulphates
2009	Hauled sewage
2009	Removal of phenols as an overstrength parameter
2010	Orders / power of entry provisions

Time for an update!!

2009 CCME Model By-law

In 2009 the CCME produced a model SUB to assist Canadian municipalities with addressing sources of contaminants in wastewater

- based on the SUB of several municipalities
- Intended as a guidance and reference model for industry standards
- Municipalities can adapt provisions that suit their unique circumstances
- Addresses wastewater issues that have been faced collectively

Comprehensive Review of Existing By-law

HW staff retained the services of several consultants to review the existing by-law and recommend any enhancements:

- 2009 OCETA/C2P2 – implementing a P2 Program
- 2009 R.E. Poisson Engineering – review of Hauled Sewage Program
- 2010 CH2M Hill – technical review of restricted substance list and administrative review of Agreement process

HW staff also consulted with neighbouring municipalities to ensure harmonization

Gap Analysis on Existing By-law

- **Language requiring installation of grease, oil and sediment interceptors and dental amalgam separators is not included in the current By-law**
- Language surrounding hauled sewage is unclear and lacking provisions to support the current program
- Language supporting the current Pollution Prevention Program not included in the current By-law
- Lacking the ability to issue Part 1 tickets for offences
- **The Sewer Discharge Agreement program under the current By-law has become cumbersome and difficult to administer – many recommendations from Audit Services 2007 internal audit.**
- Multiple amendments make the current By-law difficult to navigate
- Several language ambiguities were identified in the current By-law
- Lack of transparency/guidance documents for users

Discharge Parameters and Limits

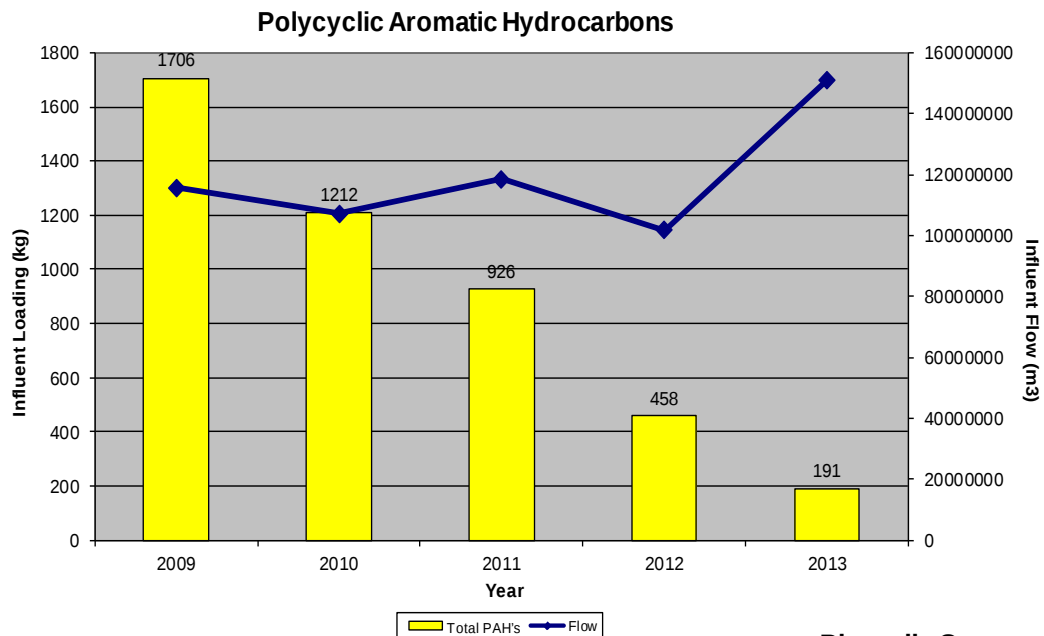
Parameter *	Limit (milligrams/litre)	Parameter (cont'd)	Limit (milligrams/litre)
cBiochemical Oxygen Demand (cBOD)	300	Aldrin/Dieldrin**	0.0002
Total Suspended Solids (TSS)	350	Benzene	0.01
Total Phosphorus	10	Bis(2-ethylhexyl)phthalate	0.012
Total Kjeldahl Nitrogen (TKN)	100	Chlordane**	0.1
Oil and Grease (animal/vegetable)	150	Chloroform	0.04
Oil and Grease (mineral/synthetic)	15	DDT**	0.0001
Phenolic Compounds	1	1,2-Dichlorobenzene	0.05
Chlorides	1500	1,4-Dichlorobenzene	0.08
Sulphates	1500	3,3-Dichlorobenzidine**	0.002
Aluminum (total)	50	cis-1,2-Dichloroethylene	4
Iron (total)	50	trans-1,3-Dichloropropylene	0.14
Fluorides	10	Di-n-butyl phthalate	0.08
Antimony (total)	5	Ethylbenzene	0.16
Bismuth (total)	5	Hexachlorobenzene	0.0001
Chromium (total)	5	Hexachlorocyclohexane**	0.1
Cobalt (total)	5	Methylene Chloride	2
Manganese (total)	5	Mirex**	0.1
Silver (total)	5	PCBs	0.001
Tin (total)	5	Pentachlorophenol	0.005
Titanium (total)	5	1,1,2,2-Tetrachloroethane	1.4
Vanadium	5	Tetrachloroethylene	1
Zinc (total)	3	Toluene	0.016
Cyanide (total)	2	Total Xylenes	1.4
Copper (total)	2	Total PAHs	0.005
Lead (total)	2	Trichloroethylene	0.4
Nickel (total)	2		
Arsenic (total)	1		
Molybdenum (total)	1		
Selenium (total)	1		
Cadmium (total)	0.7		
Mercury (total)	0.01		

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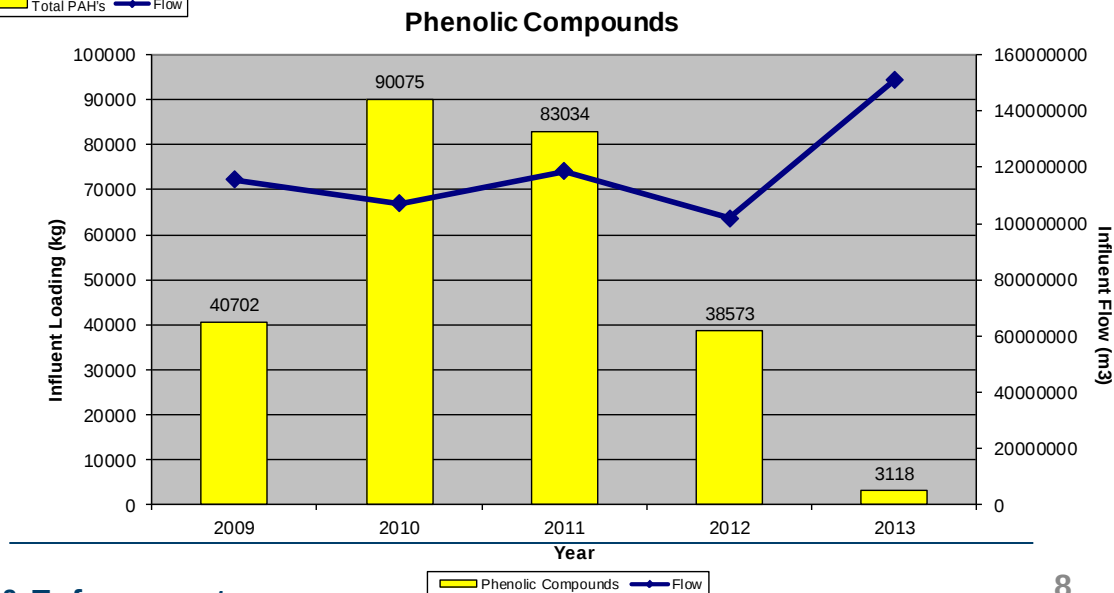
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Woodward Ave WWTP Influent Loading

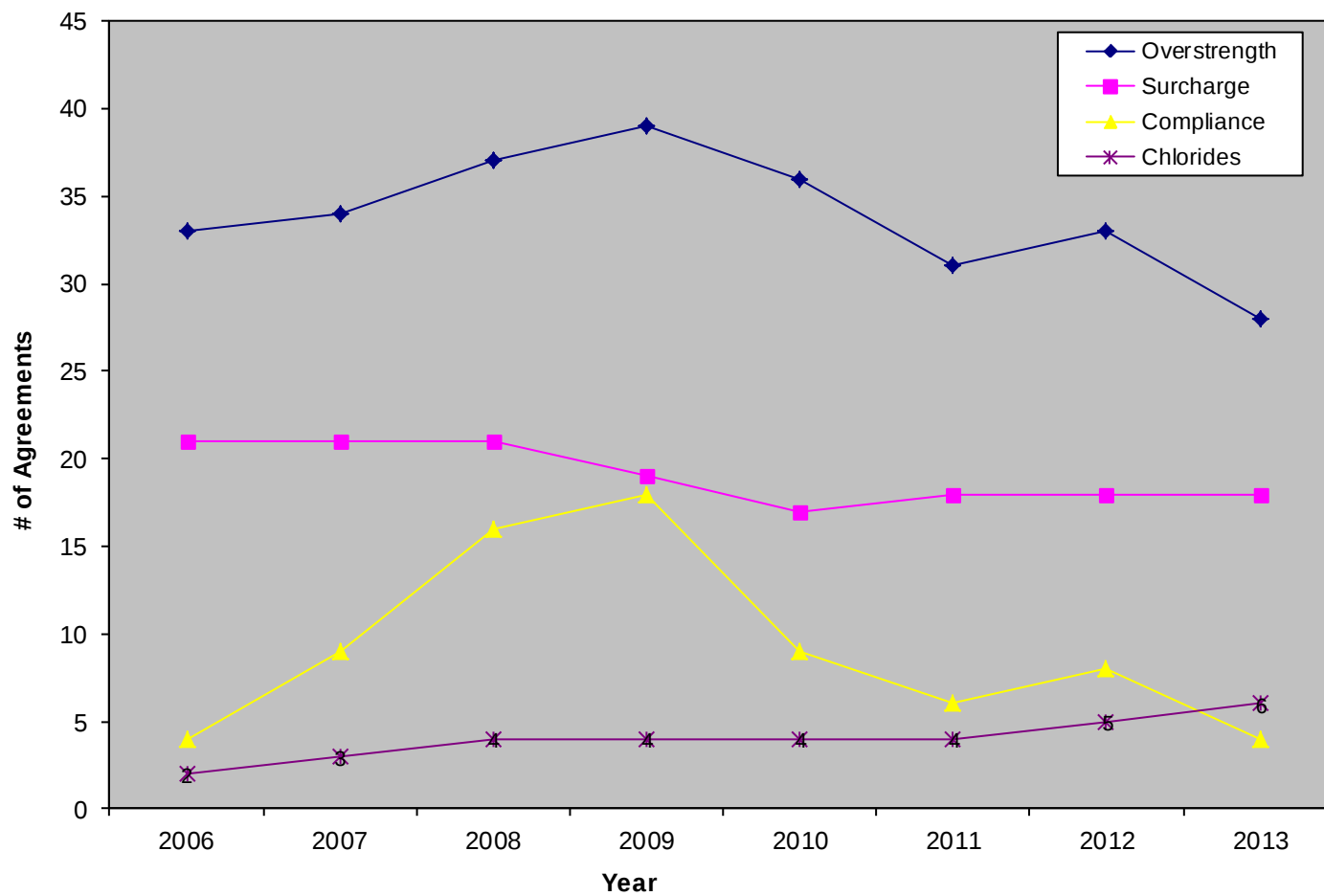


89% PAH loading reduction since 2009

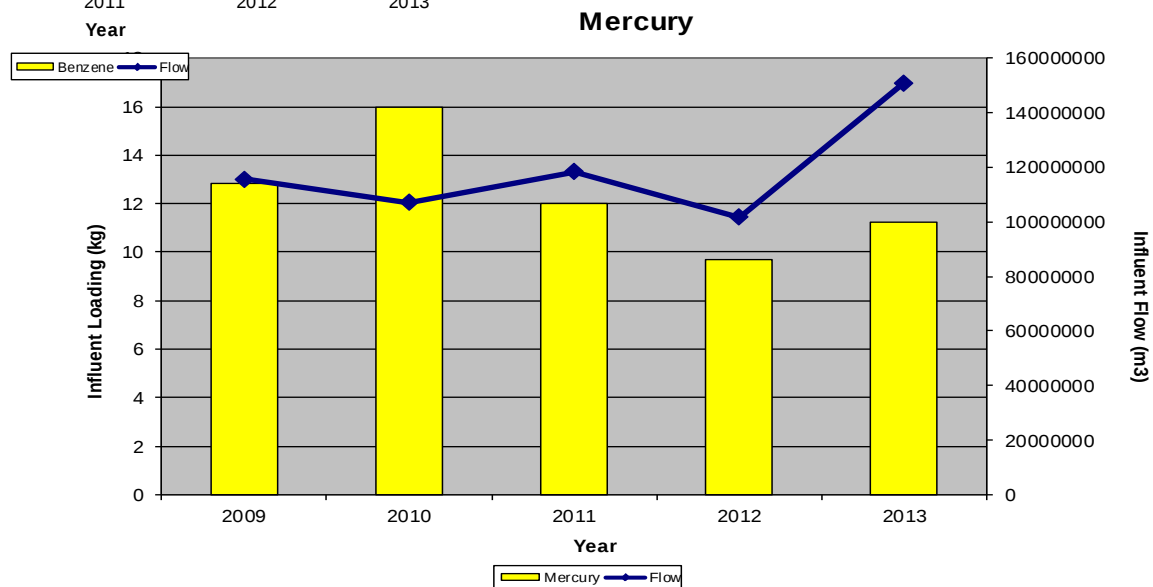
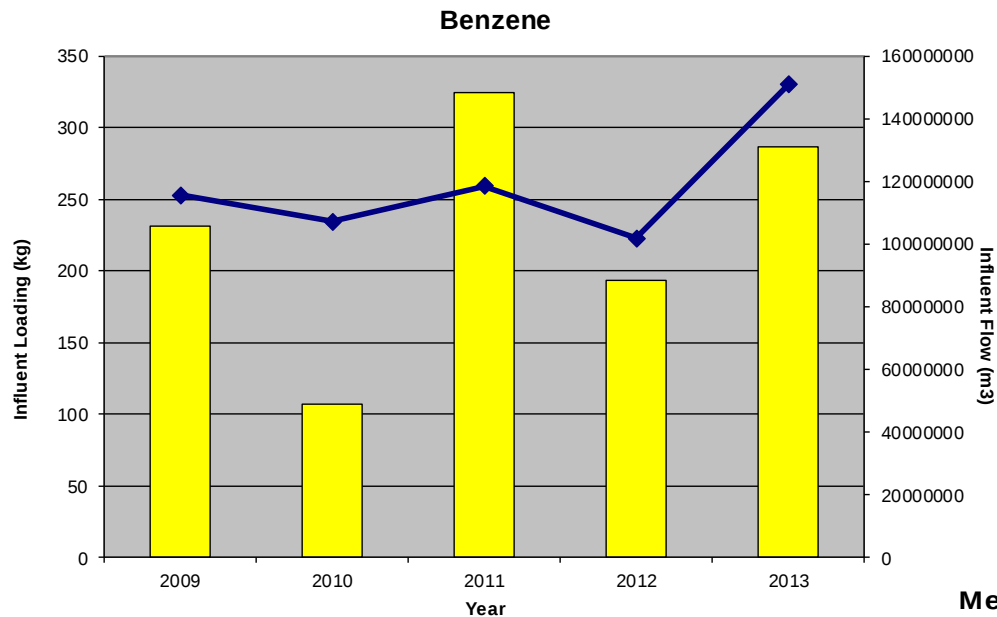
99% Phenolic loading reduction since 2010



Sewer Discharge Agreements



Woodward Ave WWTP Influent Loading



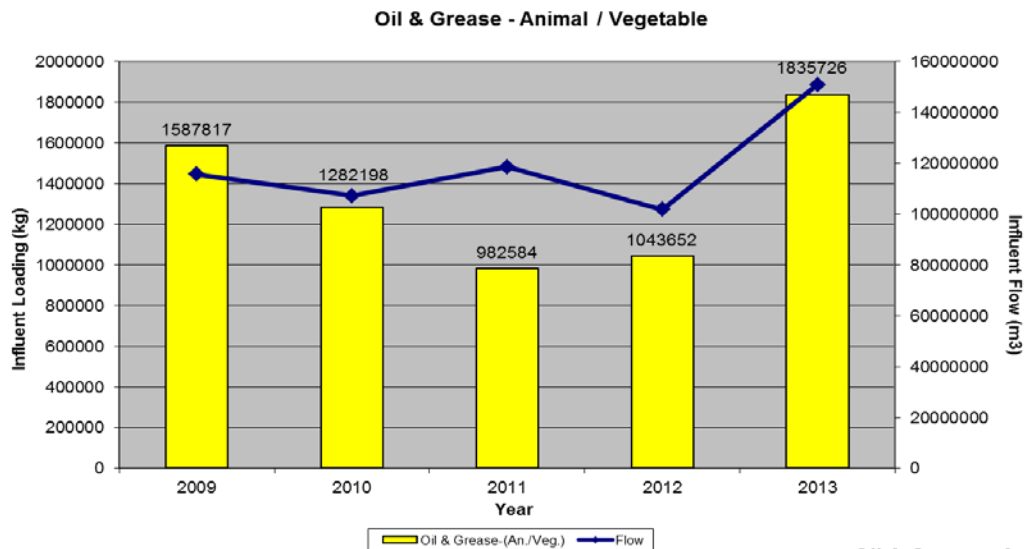
Sources: Restaurants, Vehicle Service Facilities, Dental Offices, Car Washes, Parking lots

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WWTP Influent Loading: Oil & Grease (An/Veg)

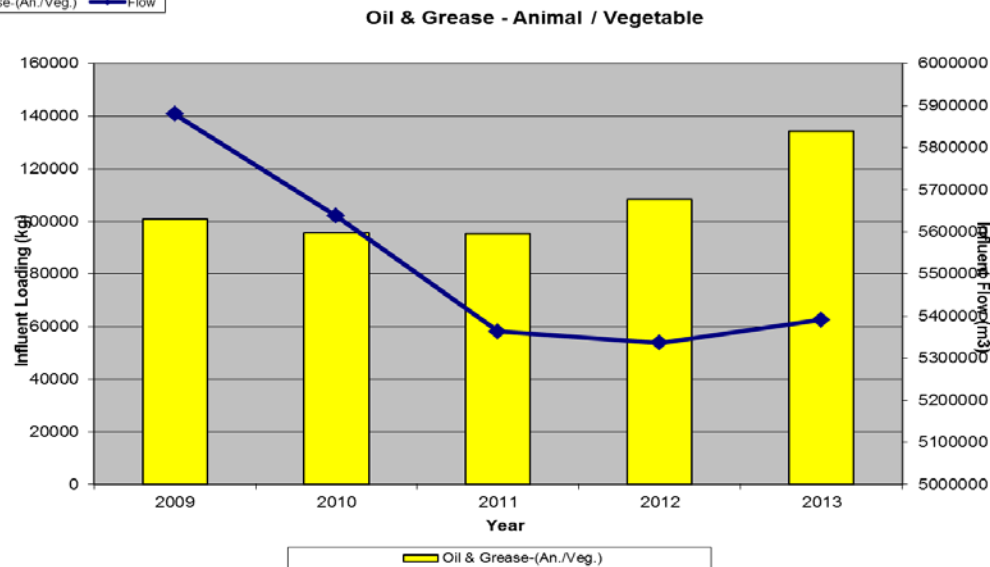


Woodward Ave

43% O&G loading increase since 2012

Dundas

26% O&G loading increase since 2012



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Dundas WWTP – Grease at Primary Clarifier

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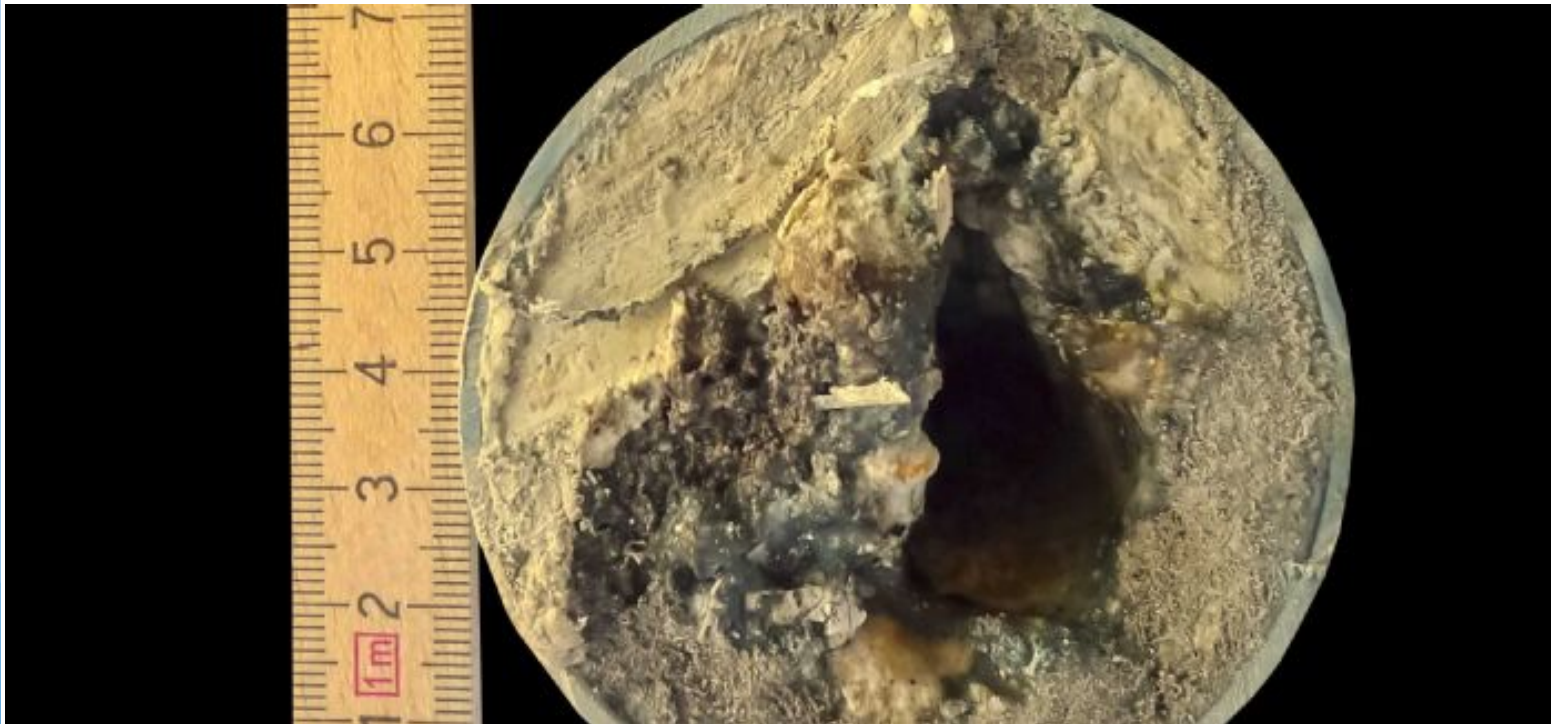


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Grease Clogged Sewer Pipe (cross-section)



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London, England's "Fatberg"



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Solution: Grease Control Devices (Grease Traps)



Grease Control Devices

Proposed new By-law provisions for Food Premises:

- New provisions requiring the installation, operation and maintenance of food related grease control devices in food premises
- Prevents Fats, Oils and Grease (F.O.G.) from entering the sewer works.
- These requirements are mandatory in most Sewer Use By-laws, CCME Model By-law and the building code (only new or change of use food premises)

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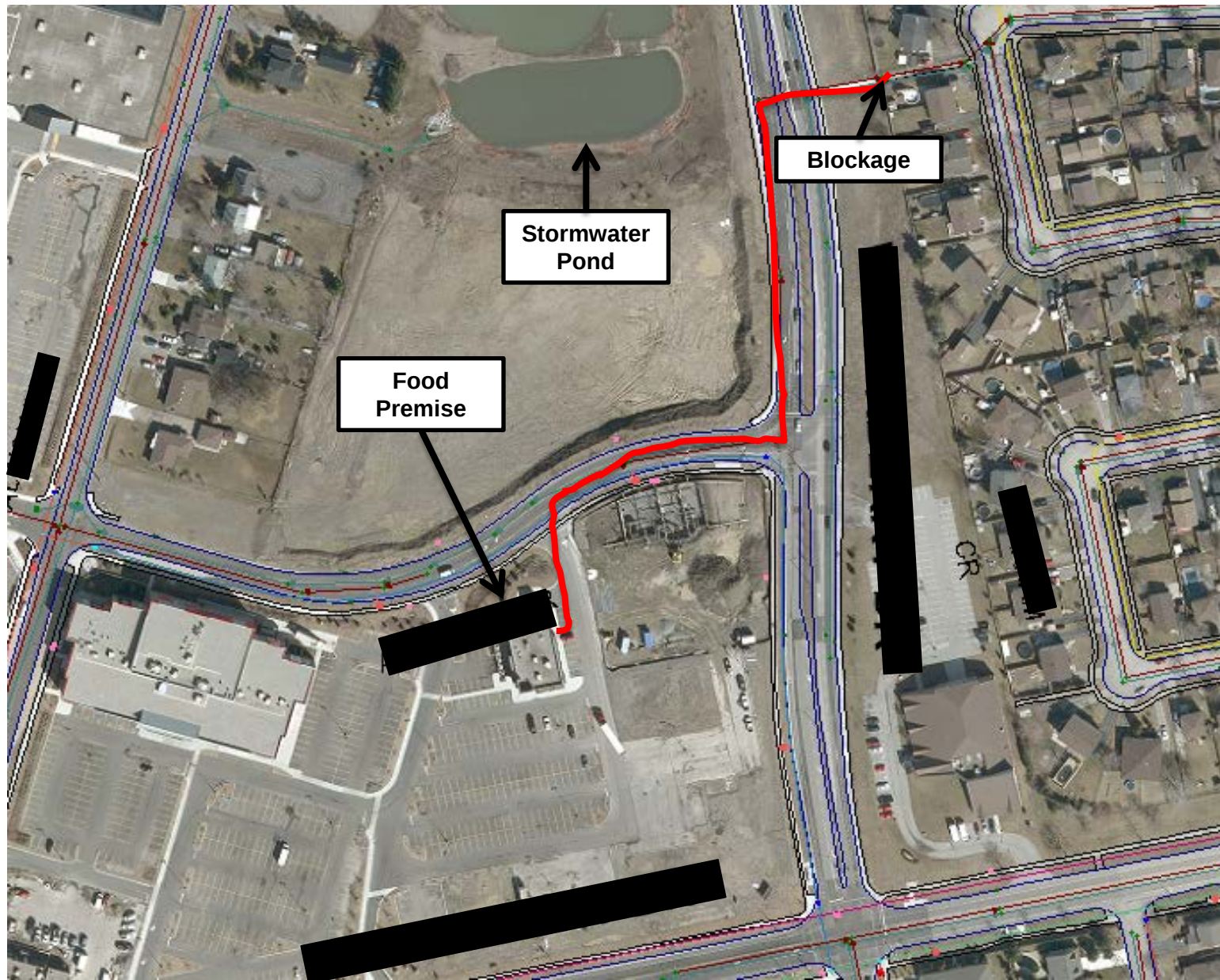
Full Grease Control Device at a
coffee shop



Full Grease Control Device
bakery



One day after clean-out



Grease Control Devices – Risk Matrix

A Risk Matrix was developed in order to apply fair and consistent requirements for the installation of GCDs

- Risk Based Inspection Priority
 - High restaurant concentration areas
 - Locations of past/recurring blockages
- Inspection Point System
 - Point will be scored for potential sources of F.O.G.
 - Immediate Risk means that a food premise is proven to be in violation of Section 4 of the proposed By-law or is known to have created a blockage within the sewer system



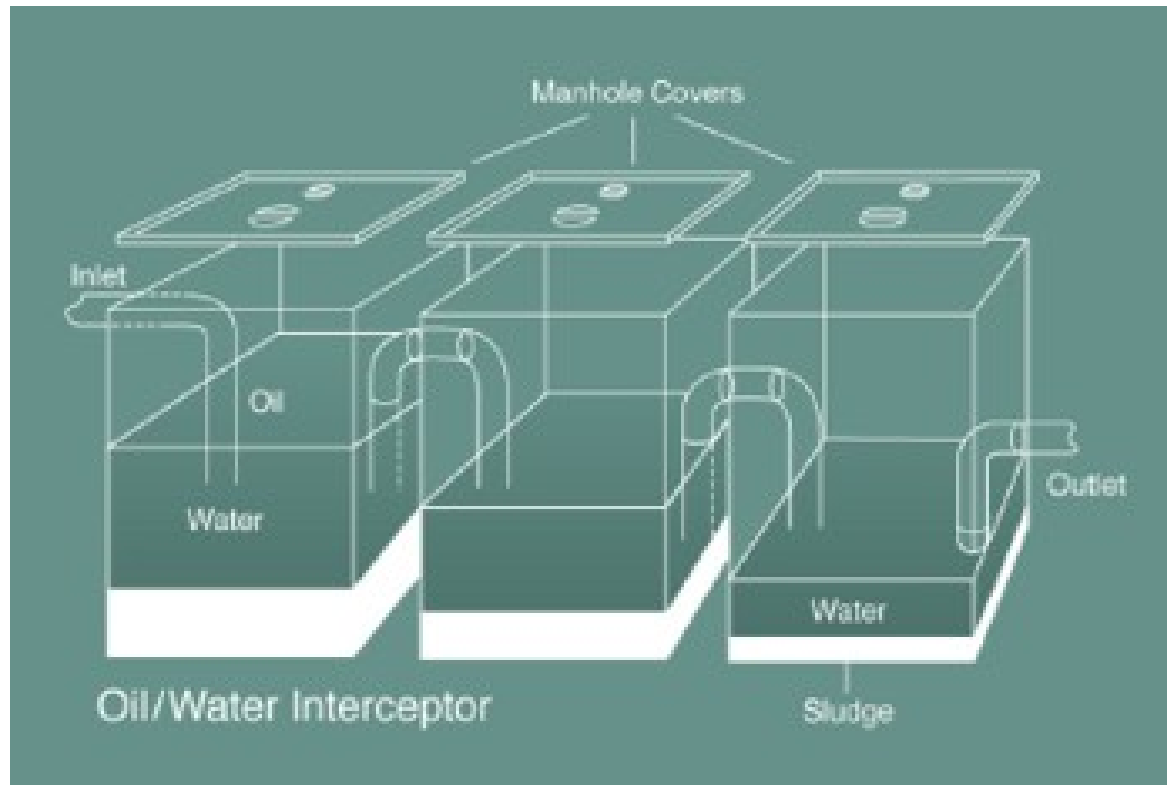
Lateral Line Impacted with Grease

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Risk	Grease Control Device Installation Period
No Risk	No grease control device needed
Low Risk	Installation within 24 months
Medium Risk	Installation within 18 months
High Risk	Installation within 12 months
Immediate Risk	Installation within 6 months

Solution: Pollution Control Devices (Interceptors)

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Comparator Municipalities with Interceptor Language

- Toronto
- London
- Windsor
- Niagara Region
- Peel Region
- Halton Region
- Kingston
- Ottawa

Many others across Canada

Sewer Discharge Permits

2007 Audit Services Recommendations:

- Agreements should be reviewed minimally every 3 years
- Invoicing calculation method should be included on signed agreement

Proposed new provisions for issuing Permits:

- Permits will replace the current Sewer Discharge Agreements
- Current agreement holders will be grandfather into the new system until their Agreement is 3 years old.
- Permits will automatically expire after 3 years – except Compliance
- Insurance requirement changes
- Application, amendment and administrative fees will be applied
- Director HW will be authorized to issue, suspend or revoke permits

Types of permits in the proposed Sewer Use By-law

- Overstrength Discharge
- Chlorides Discharge
- Compliance Discharge
- Surcharge Discharge
- **Temporary Discharge (new)**
- **Conditional Discharge (new)**



Proposed Permit Fees and Charges

Existing Fees and Charges	Existing Fee (2014)	Proposed Fees and Charges	Proposed Fee
		<u>Application Fees for Sewer Discharge Permits</u> (*paid upon application) <u>Application Fee (Overstrength, Surcharge, Conditional)</u> <u>Application Fee (Compliance)</u> <u>Application/Administrative Fee (Temporary)</u> -Where City staff obtain Certificate of Status (optional) -Where City staff obtain PIN printout (optional) -Wastewater Characterization deposit (optional) <u>Amendment Fee (all types)</u>	--- \$450 \$450 \$450 \$87 \$70 \$1500 \$250
<u>Administrative Fees for Sewer Use Agreements</u> (Paid per quarter) Overstrength Discharge Agreement Sanitary Sewer Surcharge Agreement Chloride Discharge Agreement	 \$352.20 \$352.20 \$352.20	<u>Administrative Fees for Sewer Discharge Permits</u> (**Paid per Quarter) Overstrength Discharge Permit Surcharge Discharge Permit <u>Compliance Program Permit</u> Chloride Discharge Permit <u>Conditional Discharge Permit</u>	 \$352.20 \$352.20 \$810 \$352.20 \$810

denotes new fee

*multiple permit holders pay only one application fee (for example, if permit holder requests an Overstrength and Compliance permit they will pay \$450)

**multiple permit holders pay the higher administrative fee (for example, if the permit holder has both an Overstrength Discharge Permit and a Compliance Program Permit, they will pay \$810 per quarter)

Public Consultation Results

Four PICs were planned at various locations around the City:

- Stoney Creek Municipal Centre
- Hamilton City Hall
- Ancaster Old Town Hall
- 700 Woodward Ave

Advertised PICs in the following media outlets:

- The Spectator
- Hamilton Community News
- City of Hamilton's Website

Over 1700 formal invitations were delivered to businesses such as:

- Restaurant owners and property managers;
- Dental offices;
- Vehicle service facility owners
- Car Washes

Over 100 email invitations to the PICs were sent to:

- Industries who are currently monitored by the sewer use program;
- Current sewer discharge agreement holders;
- Septic haulers and generators;
- Local non-government agencies
- Various business associations (i.e. HIEA)
- Canadian Restaurant and Foodservices Association (Ontario Chapter),
- Ontario Dental Association.



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Public Consultation Results

Copies of the Draft By-law were available:

- For attendees of the PIC to take away
- On the City's Website

Staff Presented to the following groups:

- Hamilton Industrial Environment Association (HIEA)
- Hamilton Association of Business Improvement Areas

52 People attended the PICs in Total:

Area of Interest	Number of Attendees
Industrial Facilities	17
Restaurants or Food Service Facilities	8
Vehicle Service Facilities (car washes, auto shops)	5
Property Owners/Managers	0
Dental Offices	0
Septic Haulers	1
Associations/Consulting Companies	9
Residents/Other	12

12 Formal Comments were received from various stakeholders, in the form of emails, letters and completed feedback forms.



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Public Consultation Results

- There were a number of valuable suggestions made during the public consultation process for the Draft By-law and the new fees and charges
- some suggestions have been incorporated into the Proposed By-law.
- There was an overall acceptance of the need for an update to the Current By-law, and most of the comments were positive
- 3 of the 12 correspondence pieces identified the following general concern:

Business and property owners were concerned about the potential costs associated with the installation and maintenance of grease control devices.



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Feedback from Restaurant Owners

Excerpts from emails sent to Hamilton Water Managers:

“We also had questions regarding our bacteria product that we felt have never worked to their potential, Mr. Alberton again highlighted the Best Management Practices, we will now be cleaning out our grease trap more frequently. By eliminating the bacteria product we will be saving over \$8000.00 per year. **Last year we have had our plumber come to our site 6 times to flush our drain lines as they had a build-up of grease on them. This plumbing bill in 2011 was around \$2500.00. Since Dave’s visit we haven’t had to call a plumber once.** As you can see we are very excited as **we will be saving somewhere in the range of \$10,000 to \$12,000 this year in proper grease management,** what other meeting with a City group could save you that much money”

“After 9 months we have seen significant savings. Prior to our inspection we were throwing our cooking oil (oil from our deep fryer) in the garbage. **In the 9 months since we have made about \$1100 selling this used cooking oil.** We as a team put resources into implementing the practices in which David recommended. These practices which seem so simple and almost not worth implementing actually work. In the past we would have our grease box cleaned professionally every 2 months at a cost of about \$150 visit. After 9 months we have only needed to clean the box at the 6 month mark and the company said we could have waiting a few more months. Although it is not a huge saving (\$300) every little penny to a smaller business is great. **Finally every 6 months we would have a plumber flush our sewer lines as our drains would slow down. They inspected the sewer lines at 6 months and they were clean. ”**



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Stakeholder Survey Results

Survey Monkey was sent to 150 stakeholders

Purpose was to Measure the following:

- General understanding of the Current By-law;
- Navigability of the Current By-law;
- Need for change;
- Awareness of proposed changes;
- Acceptability of Draft By-law;
- Staff customer service levels.

There was a 32% response rate to the survey.

The Survey Results:

- Confirmed the need for a new sewer use by-law
- Many users have had difficulty navigating the Current By-law
- Many users do not have a clear understanding of their requirements to comply.
- A large majority also felt that the Draft By-law is fair and appropriate
- A large majority were generally pleased with the customer service of the Environmental Monitoring & Enforcement Unit staff of Hamilton Water.

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Questions / Comments

