

CITY OF TORONTO SEWER USE BY-LAW AND ITS P2 REQUIREMENTS



Presentation to:

**6th Canadian Pollution Prevention
Roundtable**

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PRESENTATION OUTLINE

- **Background on the new Sewer Use By-law**
- **P2 requirements**
- **Update on P2 implementation**
- **Case studies**

BY-LAW OBJECTIVES

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- ⌘ **to regulate the quality of storm and sanitary discharges into City's storm & sanitary sewers**
 - ⌘ **to continuously improve biosolids quality**

WHY A REGULATORY SEWER USE BY-LAW IS NEEDED




- ⌘ Environmental protection and long term health of receiving waters**
- ⌘ Maintain the treatability of sewage at treatment plants**

WHY A REGULATORY SEWER USE BY-LAW IS NEEDED

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- ⌘ **Maximize the opportunities for bio-solids reuse**
 - ⌘ **Sewer use equity**

BACKGROUND TO THE CITY'S NEW SEWER USE BY-LAW

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- ⌘ By-laws harmonization due to six former cities and a Metro level of government amalgamated into one new city, January 1, 1998**

AMALGAMATION OF SIX MUNICIPALITIES INTO NEW CITY OF TORONTO

CITY OF TORONTO ONTARIO, CANADA



Location - North Shore Lake Ontario
5th Largest City in North America
2.4 Million People



BACKGROUND TO NEW SEWER USE BY-LAW



- ⌘ **Research studies have identified health and environmental risks due to toxic organics and metals**
- ⌘ **Trend toward lower limits, particularly in Europe**

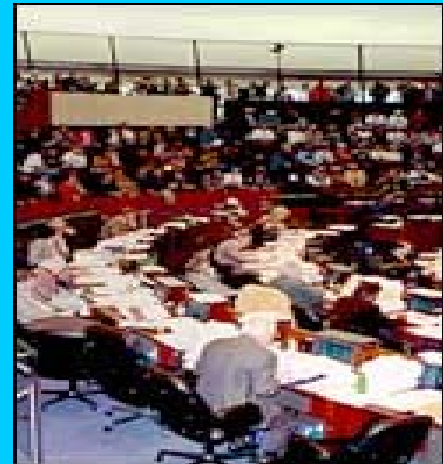
BACKGROUND TO THE NEW SEWER USE BY-LAW



- & U.S. successes in using Pollution Prevention Planning for industrial discharges**
- & City Council's decision to stop incineration and implement 100 % beneficial reuse of biosolids**

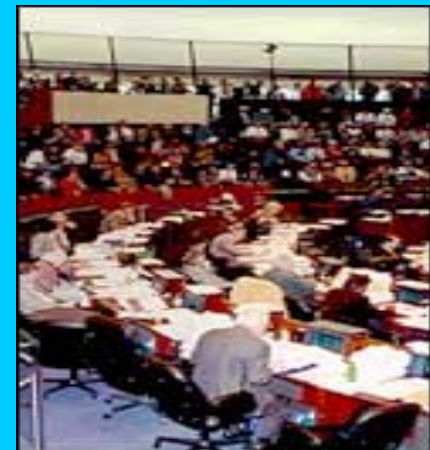
PROCESS FOR COUNCIL APPROVAL OF NEW SEWER USE BY-LAW

- ⌘ **Staff prepared draft By-law in consultation with Federal, Provincial agencies, special interest group (World Wildlife Fund) and relevant research reports**
- ⌘ **Council adopted draft by-law and approved a public consultation plan**




PROCESS FOR COUNCIL APPROVAL OF NEW SEWER USE BY-LAW

- ⌘ **Draft By-law mailed to 6,000 stakeholders on May 12, 1999 and posted on Web site**
- ⌘ **6 months of public and industry sector meetings - started June 1999**



PROCESS FOR COUNCIL APPROVAL OF NEW SEWER USE BY-LAW

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- ⌘ 9 industry/public meetings in June 1999**
 - ⌘ 20 presentations to neighbourhood liaison committees and business associations**
 - ⌘ Draft By-law modified where appropriate**


PROCESS FOR COUNCIL APPROVAL OF NEW SEWER USE BY-LAW

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- ② **Following two days of debate and deputations, on July 6, 2000, City Council adopted a new Sewer Use By-law with lower limits**

HIGHLIGHTS OF NEW SEWER USE BY-LAW

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- ⌘ **More stringent limits on chromium, copper, lead, mercury, nickel, selenium and zinc**
 - ⌘ **27 new organic limits in sanitary and storm sections**
 - ⌘ **11 heavy metals and 27 organics =
Subject Pollutants**

HIGHLIGHTS OF NEW SEWER USE BY-LAW

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- ⌘ **2-year phase-in period for the new limits**
 - ⌘ **P2 planning requirements for any industry discharging subject pollutants in any amount**
 - ⌘ **Submission of updated P2 plan summary every two years and updated P2 plan every 6 years**



HIGHLIGHTS OF NEW SEWER USE BY-LAW

● Subject sector industry

- Metal Finishers
- Industrial Launderers
- Gas Stations/Auto Repairs
- Photo Finishing/Printing
- Dentists/Medical Labs
- Textile
- Organic Chemical
- Soap & Detergents
- Rubber & Plastics



ANY AMOUNT
of Subject Pollutant

↓
Submit
P2 Plan Summary

Every industry discharging



HIGHLIGHTS OF NEW SEWER USE BY-LAW

P2 Plan Summary due dates - phased-in sector by sector

- **June 30, 2001** - **Metal Finishers**
- **December 31, 2001** - **Industrial Launderers**
 - **Gas Stations/Auto Repairs**
 - **Photo finishing/Printing**
 - **Dentists/Medical Labs**
 - **Textile**
- **June 30, 2002** - **Organic Chemical**
 - **Soaps & Detergents**
 - **Rubber & Plastics**



HIGHLIGHTS OF NEW SEWER USE BY-LAW

- **>June 30, 2000 any new business in target sector or discharger of subject pollutant will have one year from date of commencement to initiate P2 process**
- **90 days extension to amend P2 plan summary if not approved**



NEW SEWER USE BY-LAW KEY POINTS

The City may designate:

- **any class of business as a subject sector**
- **any matter as a subject pollutant**
- **any date with respect to which industry discharging a subject pollutant shall be required to prepare a P2 plan and submit a P2 plan summary**
- **a different form for the P2 plan and P2 plan summary with respect to any class of ICI premises, or with respect to any class of industry**

P2 PLAN and P2 PLAN SUMMARY FORMS

P2 Forms Designated by Council

- ◆ **Generic P2 Plan and P2 Plan Summary forms for manufacturing industries**
- ◆ **Sector specific P2 forms for commercial/institutional sectors**
 - ✓ **Photo Finishing**
 - ✓ **Printing**
 - ✓ **Dental**



P2 PLAN and P2 PLAN SUMMARY FORMS

Other Sector-specific P2 forms

- ✓ **Health Care**
- ✓ **Textile**
- ✓ **Gas Bars, Car Washes, Service Bays**
- ✓ **Auto Body Repair**





P2 Training

INDUSTRY SPECIFIC P2 TRAINING

- ✓ **1 day or 1/2 day training sessions for each subject sector**
- ✓ **Working with industry associations to coordinate training**
- ✓ **Objective is for industry to understand P2 benefits, opportunities and avoid having to hire consultant**

MERCURY IN BIOSOLIDS

Month	HCTP Raw Sludge Average Hg (mg/kg dry wt)	HTP Digested Sludge Average Hg (mg/kg dry wt)	ABTP Digested Sludge Avg Hg (mg/kg dry wt)	NTTP Digested Sludge Average Hg (mg/kg dry wt)
Jan. 2001	1.9	4.83	2.4	3.86
Feb. 2001	0.7	1.48	1.75	3.47
Mar. 2001	1.1	0.17	1.8	3.93
Apr. 2001	1.2	1.4	1.9	3.08
May 2001	2.0	1.19	2.0	2.45
Jun. 2001	2.4	2.31	2.0	3.08
Jul.2001	1.1	14.36	2.2	3.88
Aug. 2001	1.8	4.48	3.5	2.97
Sept. 2001	0.9	1.81	3.0	3.05
Oct. 2001	1.1	4.4	3.7	2.58
Nov. 2001	0.9	3.17	1.55	3.17
Dec. 2001	1.4	2.02	2.0	3.39
Average	1.38	3.47	2.32	3.24
Jan. 2002	0.75	1.15	0.75	1.68
Feb. 2002	1.1	1.0	1.55	1.3
Mar. 2002	0.5	1.2	1.52	2.32

P2 Implementation

Vijay Ratnaparkhe
City of Toronto



Communication to Industries

- **Direct contact**
- **Associations**
- **Flyers**
- **Workshops**
- **Information booths**



P2 Submission Status

- **Metal Finishing Sector - 95 %**
- **Dental Clinics - 90%**
- **Auto Body - 40%**
- **Automotive Service - 65%**
- **Printing & Graphics - 50%**
- **Photofinishing - 80%**
- **Hospitals - 90%**
- **Industrial Laundries - 70%**



P2 OPTIONS SELECTED BY VARIOUS SECTORS

Auto Body Refinishing

- use of low VOCs paints
- use of solvent recycler
- employee training
- product substitution - switch to water-based paints



P2 OPTIONS SELECTED BY VARIOUS SECTORS

Automotive Service Industries

- **product substitution for nonylphenols and nonylphenol ethoxylates**
- **employee training**
- **spill prevention**
- **good housekeeping**

Dental Clinics

- **installation of amalgam separator**
- **recycling of waste amalgam**
- **using alternatives**



P2 OPTIONS SELECTED BY VARIOUS SECTORS

Textile

- **eliminate NPs and NPEs**
- **reduce subject pollutants through modification of in-house operating systems**

Printing

- **using Clean Print Check Sheets**
- **eliminate subject pollutants through product substitution**
- **process and equipment modifications**



P2 OPTIONS SECLECTED BY VARIOUS SECTORS

Metal Finishing

- **waste segregation**
- **use lower concentration plating solutions**
- **filtration to reduce bath dumps**
- **minimize drag-outs**
- **counter current rinses**
- **spray and fog rinses**
- **capture drag-out before rinsing and recycle into the process**
- **use of flow restrictors in rinse water**



P2 Case Studies

Sectors for Case Studies


- **Metal Finishing Sector**
- **Chemical Manufacturing**
- **Industrial Laundry**



P2 Case Study - Metal Finishing Sector - Coretec

Subject Pollutants

- **Copper**
- **Nonylphenols & Nonylphenol Ethoxylates**
- **Nickel**
- **Lead**



P2 Case Study - Metal Finishing Sector - Coretec

P2 Options for Copper

- **Point source electrowin on static rinse in electroless copper**
 - **Reduction expected - 97%**
 - **Implementation status - implemented**
 - **Cost - \$ 15,000 (US) annually**
 - **Savings - \$ 25,000 - \$50,000 (Can) annually**



P2 Case Study - Chemical Manufacturing - Rohm & Haas Canada Inc.

Subject Pollutants

- **Zinc**
- **NP/NPEs**
- **OP/OPEs**
- **Copper**
- **Molybdenum**



P2 Case Study - Chemical Manufacturing - Rohm & Haas Canada Inc.

P2 Options

- **Zinc - Recycling the rinses**
- **NP & NPEs & OP/OPEs**
 - **product reformulation**
 - **ultra filtration**



P2 Case Study - Industrial Laundry

Subject Pollutants

- **NP/NPEs**
- **Methylene Chloride**
- **Trans 1,3 dichloropropylene**
- **Benzene, Toluene, & Total Xylene**



P2 Case Study - Industrial Laundry

- Cadmium
- Chromium
- Molybdenum
- Lead
- Cobalt
- Copper
- Nickel
- Zinc

**Investigation work is ongoing for
P2 options**