Presentation to:
Neighbourhood Liaison Committee
Highland Creek Treatment Plant
November 12, 2012

Toronto Water:
Overview of Sewers Bylaw

Vijay Ratnaparkhe
Supervisor, Environmental Monitoring & Protection
Toronto Water
Toronto Water Structure

General Manager

District Operations

Water Treatment & Supply

Wastewater Treatment

Operational Support

Water Infrastructure Management

Business Operations Management
Environmental Monitoring and Protection (EM&P)

- 51 FTEs
- Management, Engineer, Provincial Offences Officers
- Sewers & Water Supply Bylaws

3 Key Sections:
- Industrial Waste Control Group
- Stormwater Quality Group
- Backflow Prevention Group:
  - Administers Backflow Program
  - Premise Isolation BFP devices at ICI (after water meter)
Sewers By-law (Municipal Code Chapter 681) Objectives

- Regulate the quality of storm and sanitary discharges into City’s storm & sanitary sewers
- Improve WWTP bio-solids quality
- Protect natural environment and long term health of receiving waters and to protect public health and safety
- Maintain sewer systems and wastewater treatment processes
- Comply with Federal and Provincial legislation
City of Toronto

4 Wastewater Treatment Plants

<table>
<thead>
<tr>
<th>Plant</th>
<th>Capacity</th>
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<tbody>
<tr>
<td>ABTP</td>
<td>818,000 m³/day</td>
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<tr>
<td>NTTP</td>
<td>35000 m³/day</td>
</tr>
<tr>
<td>HCTP</td>
<td>220,000m³/day</td>
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<tr>
<td>HTP</td>
<td>473,000 m³/day</td>
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Lake Ontario

14th largest fresh water lake in the world
City of Toronto
4 Drinking Water Treatment Plants

R.L. Clark Water Treatment Plant
Harris TP
F.J Horgan TP
Island TP

Lake Ontario
14th largest fresh water lake in the world
Toronto Sewers By-Law **Highlights**

- **Discharge Limits and requirements for the Sanitary, Combined, and Storm sewers**
  - Inclusion of 27 organics compounds (i.e. chloroform) and lower limits on 11 heavy metals = 38 Subject Pollutants
  - Requirement for: advanced waste amalgam separators in dental clinics; oil/water; sediment interceptors for auto repair, car washes
  - Best Management Practices for some commercial sectors and residential swimming pools

- **Pollution Prevention (P2) Plan Requirements**
  - Industrial, Commercial, Institutional (ICI) facilities require a P2 plan for 38 subject pollutants (i.e. Mercury, Chloroform)
TORONTO MUNICIPAL CODE § 681 SEWERS Limits

• **Table 1 — Limits for Sanitary and Combined Sewers Discharge**

• **Table 2 – Limits Storm Sewers Discharge**
Sewers By-Law Highlights

- Surcharge Agreement fees generate ~$8 - 9 Million annually

- Compliance Agreements - where dischargers are commencing correction of discharge but require time &/or equipment

- Report spills ASAP & Submit Spill reporting within 5 days

- Restaurants and food processors required to install and properly maintain grease Interceptors

- Penalties and Fines – up to $100K per day
EM&P - Stormwater Quality Group

• Outfall Monitoring Program
  • Monitor storm outfall discharges; find cross connections and correct/eliminate
    • 6 Tributary Watersheds and Lake Ontario

• Beach & water quality monitoring

• Special Stormwater Projects
EM&P – Industrial Waste Control Group

• Enforce Sewers & Water Supply Bylaws

• Monitors industrial discharges & on-site P2 plans & inspects for Backflow Prevention Devices & Water theft

• Respond to water pollution complaints, industrial- commercial spills
  – 24/7 Spill & Complaint Response
EM&P – Industrial Sampling & Inspections

- Industries classified according to impact to sewer system:
  - **High Potential** – e.g., Metal platers sampled once per month, inspected minimum yearly and frequently as required
  - **Medium Potential** – e.g., Bakeries, sampled every 3 months, inspected yearly
  - **Low Potential** – typically commercial operations and inspected once every 3 years
EM&P – Spill Response
How EM&P interacts with food service establishments

- Fats Oil & Grease (FOG)

• Typical Problems:
  • no grease interceptor; improperly sized grease interceptor &/or poor maintenance
  • Using additives in grease traps, drains – pump-out is still required; may cause other problems
  • Site washing outdoors leading to storm sewer via catch basins and leading to nearest creek/river
    • cover catch basins with mats and use vac truck for pick up
Backflow Prevention Group

- Over 30,000 Industrial Commercial, and Institutional facilities impacted.

- Requirement to install a Premise Isolation Backflow prevention device.

- Facilities categorized as Severe and Moderate risk of contamination
Backflow Prevention Group

- Installed downstream of Water Meter
- Bypass AND Main Water Supply Protected

To Facility
What’s New Since 2007

• TPH Referral for restaurant non-compliance
• Two dedicated By-Law Officers for restaurant inspections
• Inspections based on TPH referrals or Sewer Blockage issues
What’s New Since 2007

- Added BMPs for Photo finishing operations
- BMPs and Brochures for swimming pool discharges (by-law amendment)
- Fines increased in the by-law
- Authority to issue Orders and Work Orders
Notable Activities

• Found and fixed 551 Cross Connections under the Outfall Monitoring Program

• Significant increase in Enforcement, Surcharge Revenue, and Fines
# 2008 to 2011 Stats

<table>
<thead>
<tr>
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<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
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<tbody>
<tr>
<td><strong>Number of Samples</strong></td>
<td>3029</td>
<td>3565</td>
<td>4187</td>
<td>6523</td>
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<tr>
<td><strong>Number of Inspections</strong></td>
<td>1354</td>
<td>1869</td>
<td>2139</td>
<td>2482</td>
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<tr>
<td><strong>Number of Violation Notices Issues</strong></td>
<td>859</td>
<td>718</td>
<td>1117</td>
<td>982</td>
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<td><strong>Number of Prosecutions</strong></td>
<td>7</td>
<td>14</td>
<td>28</td>
<td>50</td>
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<td><strong>Fines</strong></td>
<td>$38,237</td>
<td>$21,500</td>
<td>$27,500</td>
<td>$181,250</td>
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<tr>
<td><strong>Industrial Waste Surcharge (in Millions)</strong></td>
<td>-</td>
<td>$7.03</td>
<td>$8.61</td>
<td>$9.37</td>
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<tr>
<td><strong>Restaurant Referrals from TPH</strong></td>
<td>-</td>
<td>643</td>
<td>4213</td>
<td>47</td>
</tr>
<tr>
<td><strong>Backflow Inspections</strong></td>
<td>-</td>
<td>381</td>
<td>675</td>
<td>855</td>
</tr>
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Work Done in HCTP Sewer Shed

- Total Inspections ~ 3800 (2008 - 2012)
- Dental Clinic Inspections ~ 300 (2007 - 2012)
- Number of Industries with IWSA  30 (current)
- Number of Restaurant Inspections ~ 470 (2010 - 2012)
Highland Creek Treatment Plant Average Influent Mercury Concentrations from 2005-2012
Highland Creek Treatment Plant Average Dewatering Sludge Mercury Concentrations from 2005-2012

Mercury Concentration (µg/L)

- 2005: 20.26
- 2006: 15.06
- 2007: 13.79
- 2008: 14.26
- 2009: 11.20
- 2010: 8.90
- 2011: 8.66
- 2012: 6.42
Highland Creek Treatment Plant
Influent Mercury Concentrations from 2012

Mercury Concentration (ug/L)

Jan: 0.30
Feb: 0.38
Mar: 0.24
Apr: 0.39
May: 0.26
Jun: 0.17
Jul: 0.12
Aug: 0.15
Major Contributors to Highland Creek Sewershed

• Major contributors of wastewater:
  • Metal finishers
  • Paperboard
  • Food processing
  • Chemical manufacturing
  • Dental clinics
  • Restaurants
Environmental Monitoring and Protection
Questions?

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