Welcome

Scarborough Waterfront Combined Sewer Overflows, Stormwater Outfall Control & Flood Protection Study
Municipal Class Environmental Assessment Study Addendum

Virtual public drop-in event – November 26, 2020
• Scarborough Waterfront (Area 33)

• Bounded by Brimley Rd to the east, Victoria Park Ave to the west, CN Rail to the north and Lake Ontario to the south.

• Study Area is based on the tributary drainage area for the combined sewer system
Municipal Class Environmental Assessment (EA) Process

- EA was originally completed in 2010
- Current EA update is based on an updated collection system representation
- City is currently completing Phase 3 of the EA Process
- This study is following the Schedule C process since we are proposing a new combined sewage storage facility
Community input – What we heard at Public Events

- Concerns documented through conversations with the project team during the original EA and subsequent meetings were collected and incorporated as part of the current study addendum.
Note: Typical connections shown, however, private drainage systems can be more complex and each one is unique. For example, there could be other combinations of connections shown.
Typical House Connections to the City’s Sewer
Case 2 – Partially Separated Sewer

Note: Typical connections shown, however, private drainage systems can be more complex and each one is unique. For example, there could be interconnection between the combined/sanitary and storm systems or other combinations of connections shown.
Typical House Connections to the City’s Sewer
Case 3 – Separated Sewer – Isolated System

Note: Typical connections shown, however, private drainage systems can be more complex and each one is unique. For example, there could be interconnection between the sanitary and storm systems or other combinations of connections shown.
# Alternative Solutions

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Control Measures</th>
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<tbody>
<tr>
<td><strong>At Source</strong></td>
<td><strong>Conveyance</strong></td>
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<tr>
<td>1. Do Nothing (as reference)</td>
<td>Maintain current measures such as downspout disconnection, street sweeping and other bylaws</td>
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<tr>
<td>2. 2010 EA Preferred Alternative</td>
<td>Maintain current measures such as downspout disconnection, street sweeping and other bylaws</td>
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<td></td>
<td>Encourage other measures such as tree planting, rain barrels, rain gardens and bioretention units on private property (5 to 10% uptake short-term and 20 to 50% uptake long-term)</td>
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<td>3. Aggressive Source Controls</td>
<td>Maintain current measures such as downspout disconnection, street sweeping and other bylaws</td>
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<td>Actively promote other measures such as tree planting, rain barrels, rain gardens and bioretention units on private property (long-term uptake of 30%)</td>
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<td>4. Conveyance Upgrades</td>
<td>Maintain current measures such as downspout disconnection, street sweeping and other bylaws</td>
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<td></td>
<td>Encourage other measures such as tree planting, rain barrels, rain gardens and bioretention units on private property (5 to 10% uptake)</td>
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<tr>
<td>5. Conveyance Upgrades + CSO Storage Tank</td>
<td>Maintain current measures such as downspout disconnection, street sweeping and other bylaws</td>
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<td>Encourage other measures such as tree planting, rain barrels, rain gardens and bioretention units on private property (long-term uptake of 20%)</td>
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Alternatives were evaluated based on their ability to address the Study’s purpose, stakeholder input, and their potential impacts. Evaluation criteria considered included:

<table>
<thead>
<tr>
<th>Natural Environment</th>
<th>Socio-Cultural</th>
<th>Technical</th>
<th>Economics</th>
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<tbody>
<tr>
<td>Potential impacts on:</td>
<td>✓ Land use impacts (parks, ravines, open spaces)</td>
<td>✓ Feasibility of implementation (available space, accessibility, constructability, approvals)</td>
<td>✓ Capital cost</td>
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<tr>
<td>✓ Terrestrial systems (vegetation, trees, wildlife)</td>
<td>✓ Disruption to existing community during construction (traffic, noise)</td>
<td>✓ Effectiveness in reducing surface and basement flooding and improving stormwater runoff quality</td>
<td>✓ Life-cycle operating and maintenance costs</td>
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<tr>
<td>✓ Aquatic systems (aquatic life and vegetation)</td>
<td>✓ Disruption to existing community post construction (visual impact, odour, safety)</td>
<td>✓ Potential impacts on upstream, downstream and surrounding area infrastructure</td>
<td>✓ Asset Renewal Integration Opportunities</td>
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<tr>
<td>✓ Receiving Water Quality</td>
<td>✓ Potential impacts to archaeological, cultural resources and First Nations</td>
<td>✓ Impacts on operating and maintenance requirements</td>
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Preferred Solution – Alternative 5

- **Surface flow management**
  - The diversion of surface drainage away from low lying areas to reduce surface ponding depths on public property
    - Installation of High Capacity Inlets (HCl) at select locations
    - Installation of new catchbasins at select locations
    - Installation of Inlet Control Devices (ICD) at select locations

**Catchbasin modifications:**
- add catchbasins
- change catchbasin type
- use inlet control devices
Preferred Solution – Alternative 5

- Upgrade of Existing Combined, Storm and/or Sanitary Sewers
  - Increase the size of sewer pipe by replacing the existing sewer with a larger one
  - Optimize existing sewer capacity by redirecting sewer flow to new sewers

- Combined Sewer Separation by adding New Storm Sewers
  - “Separate” existing combined sewers by adding new storm sewers
  - Redirect road drainage (catchbasins) away from the combined sewers toward new storm sewers

Storm Sewer Replacement In Road – During Construction
Preferred Solution – Alternative 5

- **Underground Storage**
  - Chine Dr “In-line” Storage: Oversized sanitary sewer installed in-line with existing sewers temporarily stores water and helps relieve overloading during rainstorms.
  - Warden Ave “Off-line” Storage: Tank located adjacent to the existing sewers and is used only during larger storm events to temporarily store runoff and sewage to prevent sewer overflows to the lake. After the storm has passed, a pump dewatered the tank back to the combined sewer system.
Warden Ave Combined Sewage Storage Tank

The required storage volume for the proposed underground storage facility is 1,600m³.

Primary reasons for selecting this location:
• the proposed facility is located within municipal lands
• the impact on existing vegetation will be limited
• traffic disruption during construction will be minimized
• the impact on adjacent residents with respect to service disruption and access/egress will be minimized
• the selected site is cost effective and meets the technical considerations
• odour and noise control issues will be minimized
• temporary access to and from the waterfront may be maintained during construction
• good access for operation and maintenance
Preferred Solution – Map 3
Preferred Solution – Map 4

Proposed Warden Ave Underground Combined Sewage Storage Tank (1,600m³)
Water Quality Improvements

- Combined Sewer Overflows (CSO)
  - Four (4) outfalls currently experience overflows.
  - The proposed solutions eliminate all overflows in the average year, exceeding Ministry of Environment & Climate Change guidelines.

- Stormwater quality improvement measures that can be implemented with the preferred solution:
  - Local Bioretention Filters – vegetated depression with underground trench designed to filter stormwater runoff to remove pollutants and promote infiltration, evapotranspiration and treatment (various configurations possible).

(Source: Green Streets Technical Guidelines, 2017)
Next Steps

- Gather and review public input
- Finalize recommended solution
- Prepare Environmental Assessment Addendum
- Post Environmental Assessment Addendum for 30-day review
- Move to Solutions Implement Stage…i.e. design and construction