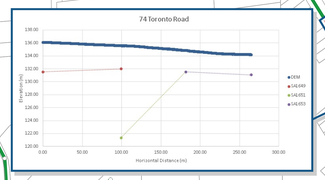
Municipality of Port Hope

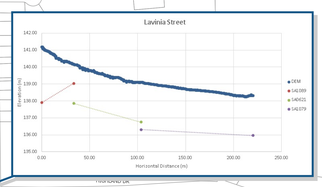
Wastewater System Pipelines Backflow Analysis

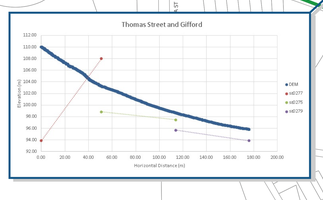
Legend

Pipe Slope
- Smaller than 0 (Good Slope)
- Greater than or Equal to 0 (Backflow)
- No data

Basemap Layers
- Railways
- Highways
- Land Parcels







Lake Ontario

N

0 250 500 750 1000 m

Map designed and created by CARBS GIS Group at Sir Sandford Fleming College in June 2019 using QGIS 3.6.0. Sources: Port Hope: Roads, Land Parcels, Wastewater pipelines2019, Northumberland County: Highways, Railways, Waterbody2019.

Municipality of Port Hope

Wastewater System Pipelines Condition Evaluation

Legend

Highest Severity Level
- 1
- 2
- 3
- 4
- 5
- No Data

3425 PACP Value

Count of Highest Severity
- No Data
- 1 or 2
- 3 or 4
- Greater than 4

Basemap Layers
- Railways
- Highways
- Land Parcels

3425 PACP Value

The PACP pipe condition grading system uses four digits to represent the highest and the second highest severity grade and their total number of occurrences. There are five severity grades from 1 (lowest) to 5 (highest). If the total number of occurrences exceeds 9, then alphabetic characters are used as follows: 10-14 = A, 15-19 = B, 20-24 = C, etc.

First digit (3): The highest severity grade
Second digit (4): The total number of occurrences of the highest severity grade. e.g., there are 4 grade 3 defects were found.
Third digit (2): The second highest severity grade
Fourth digit (5): The total number of occurrences of the second highest severity grade. e.g., there are 5 grade 2 defects were found.

Lake Ontario

N

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Municipality of Port Hope

Wastewater System
Waste Generation and Infiltrtaion

Legend

Waste Generated and Infiltration (L/day)
- 0 - 4363
- 4363 - 10499
- 10499 - 20880
- 20880 - 52200
- No Data

Basemap Layers
- Sanitary Laterals
- Railways
- Highways
- Land Parcels

Waste Generation

The waste generated is estimated at a parcel scale. Each parcel is connected to the nearest pipe and it is estimated that all wastewater generated by the parcel flows directly into the nearest pipe. The laterals were populated with waste generation estimates taken as a function of the zoning, an estimate of house hold members, and an average waste generated value provided by Government of Canada Water Consumption Report, 2016.

Infiltration

Infiltration occurs when water, groundwater and stormwater enter the wastewater system through sump pumps, downspouts, and/or holes and cracks in the pipes. Infiltration are problematic to the wastewater system for a number of reasons. On this map, an infiltration rate is derived from the square of the first QSR character. That means, if the pipe's highest severity grade is higher, the pipe will have a higher infiltrtaion rate. Infiltration values are calculated as waste generation times the infiltration rate.

Lake Ontario

N

0 250 500 750 1000 m

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