

Welcome

Class Environmental Assessment *for* The Old Dundas Road Sewage Pumping Station (HC005) Wet Weather Relief

Public Information Centre No.1

Please complete the sign-in sheet and review the display materials.

Your Input is valued! Please fill out a comment sheet.

The Project Team are on hand to answer your questions and address any concerns.

The Study Area

- The study area is bounded by Mohawk Road to the south, Wilson Street East to the west and north, and Filman Road to the east. The area is defined by the homes where sanitary sewage is conveyed to the Old Dundas Road Sewage Pumping Station (HC005).
- The area is made up primarily of residential properties mixed with commercial properties.



The area is serviced by a separated sewer system



Separated Sewer

Existing Environmental Conditions

- Tiffany Falls Environmentally Significant Area (ESA) is located within and east of the Study Area
 - Significant ecological function
 - Significant flora and fauna
 - Contained within the above ESA is the regionally significant Tiffany Falls Earth Science Area of Natural and Scientific Interest (ANSI)

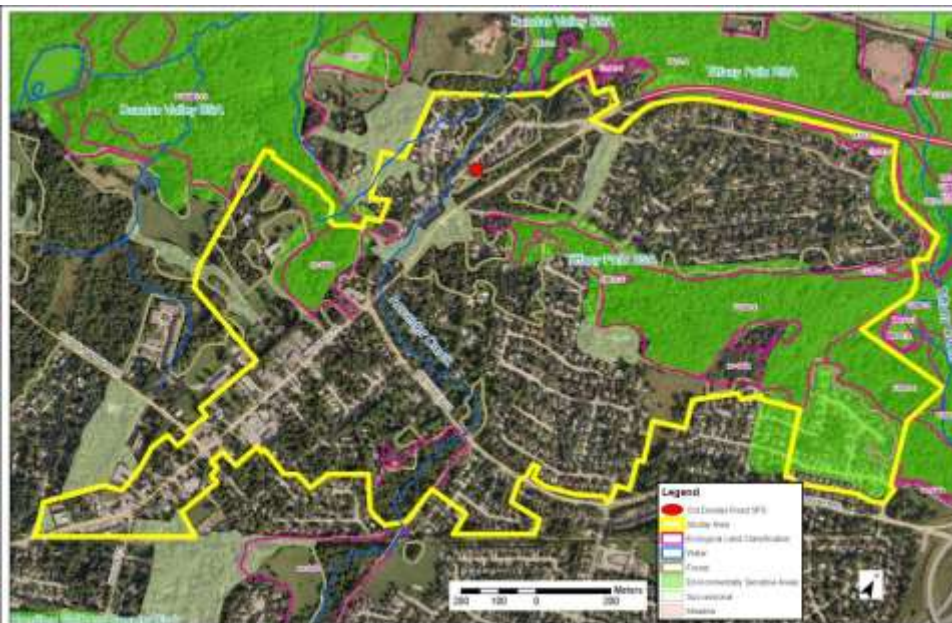
- Dundas Valley ESA is located within and west of the Study Area
 - Significant ecological function
 - Significant flora and fauna
 - Highly diverse native plant species and biotic communities
 - High-quality upland woods
 - Significant hydrologic function
 - Area helps maintain hydrologic balance over a large area and maintains surface water quality in the many streams that flow through it
 - Contained within the above ESA is the Dundas Valley Earth Science ANSI and the Dundas Valley Life Science ANSI

- Study Area is located within the Niagara Escarpment Planning Area

- Study Area contains a portion of Ancaster Creek
 - Cold water system
 - Permanent watercourse
 - Sewage Pumping Station located in “Upper valley” catchment

- Study Area is located west of Tiffany Creek
 - Warm water baitfish community
 - Coldwater groundwater inputs in downstream reaches – rainbow trout migration in lower reaches of the creek

- Waterfalls are a barrier to fish migration/passage.



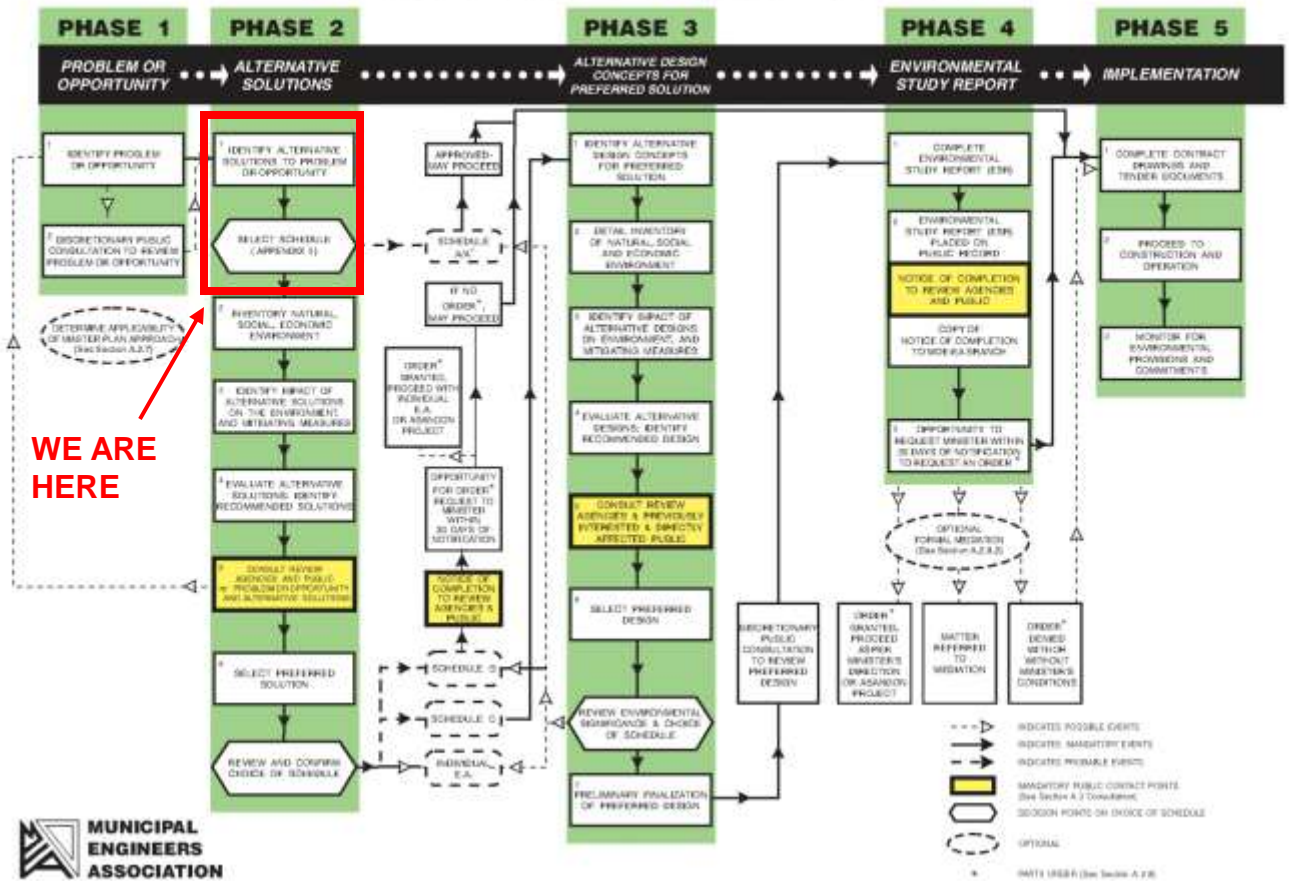
**Map:
Natural Heritage
Features within and
adjacent to the Study
Area**



Overview of the Class Environmental Assessment Process

EXHIBIT A.2 MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA



Municipal Class Environmental Assessment (EA) Process

- A Class EA Study is prepared to consider potential environmental, economic, social and technical impacts of alternatives to a proposed project.
- EA Studies will result in the recommendation of an alternative which provides the best overall solution for the community.
- Input from community residents and agencies is a key component of EA Studies.
- Information gathered during this Study will be shared with residents and agencies in a Project File Report which will be available for review by all parties.
- This Study considers the alternatives to relieve the wet weather flows at the pumping station.
- This is a Schedule 'B' Class EA Study.

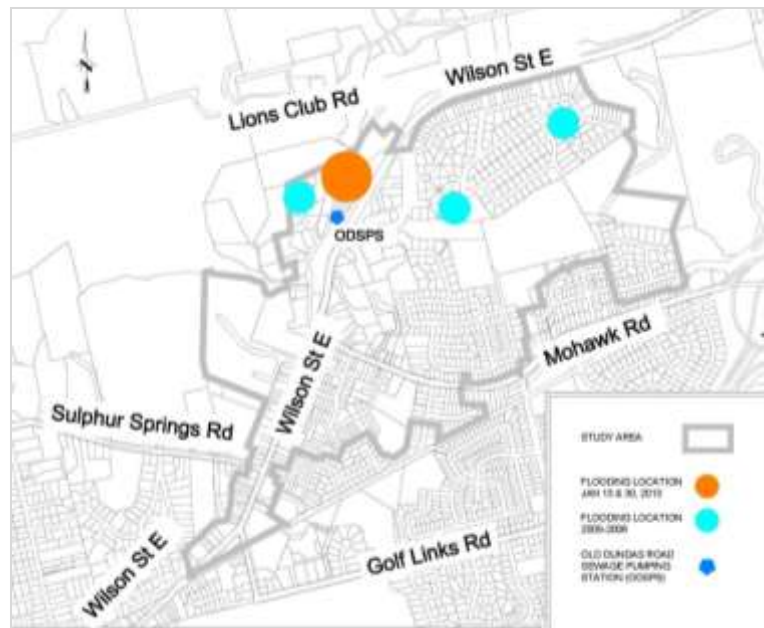
Problem Statement

Basement flooding occurs within the Old Dundas Road Sewage Pumping Station (HC005) catchment area during some wet weather events. The purpose of this study is to identify the causes of basement flooding and propose remedial measures to mitigate future basement flooding.

The accompanying figure illustrates the general location of homes which have flooded during events since 2005.

There are several potential causes of the flooding that has occurred.

This study addresses basement flooding that occurs as a direct result of overloading of the sanitary sewer system during some wet weather events by rainfall, snowmelt and groundwater which can enter the system as inflow and infiltration.



During dry weather and moderate wet weather events, the sewer system and pumping station provide the required capacity.

Purpose of this Class EA

Study Purpose:

The purpose of this study is to identify the cause(s) of basement flooding in the Old Dundas Road Sewage Pumping Station (HC005) catchment area and propose measures and/or infrastructure to mitigate future basement flooding.

Objectives of Tonight's Meeting:

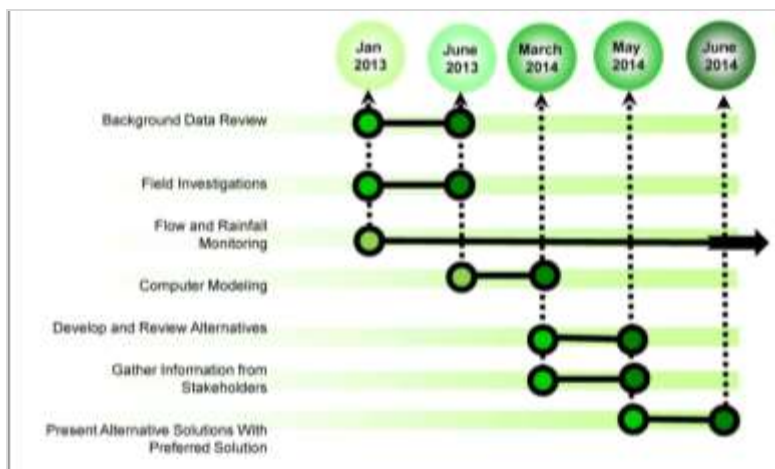
- Describe the study area
- Define any problems or opportunities
- Present some of the initial findings
- Present a long list of alternatives that could be considered
- Present a list of screening criteria which are to be used to evaluate the alternatives
- Solicit feedback from the public

Investigating Basement Flooding: The Steps Involved

Many steps are involved in the study before solutions can be developed. The steps include:

- Collecting and reviewing background data on land use, population, soil conditions, sanitary and storm drainage systems, flooding history, previous reports and operation/maintenance records;
- Undertaking a comprehensive field investigation program to define the condition of the sanitary sewer system as well as identifying potential sources of inflow/infiltration from stormwater or groundwater sources;
- Monitoring sewer system flow and rainfall;
- Developing computer models to analyze the causes of flooding and to predict flows under various weather conditions;
- Developing and evaluating alternatives to address the issue of flooding;
- Gathering input from the community and review agencies; and
- Presenting alternative solutions together with the Preferred Solution (June 2014).

We Are Here



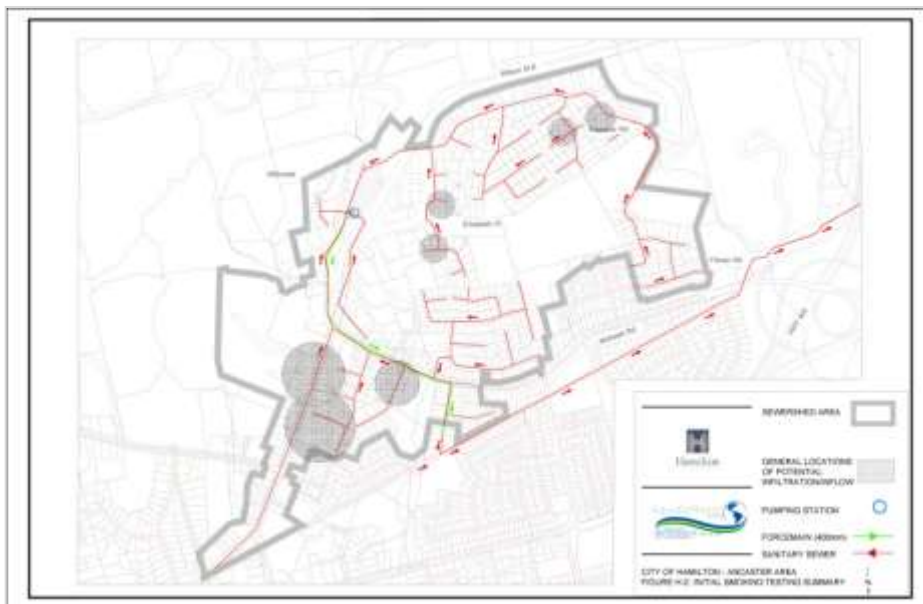
Our Findings

The City undertook a separate study to identify potential sources of infiltration/inflow into the sanitary sewer system. Specific work included deployment of flow monitors in the sanitary system, a review of existing CCTV, smoke testing and inspections of the system during wet weather.

Potential sources include:

- Roof downspouts which are directly or indirectly connected to the sanitary sewer system.
- Infiltration/inflow from the sanitary manhole chamber or maintenance hole covers.
- Catch basins which are directly or indirectly connected to the sanitary sewer system.
- Infiltration/inflow from foundation drains which are directly or indirectly connected to the sanitary sewer system.
- Infiltration/inflow from defects in existing sanitary sewers

The accompanying map illustrates potential locations of infiltration/inflow as identified by the field program undertaken by the City.

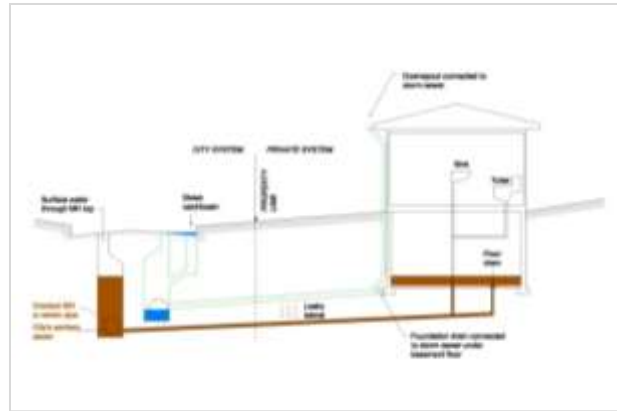


Infiltration/Inflow (I&I) are terms used to describe ways that groundwater and stormwater enter into the sanitary sewer system. Inflows generally are direct sources that enter the system quickly whereas infiltration is an indirect source which occurs over a longer period of time.

Our Findings

Information from the previous tasks were assessed and a computer model was run to analyze the causes of flooding and to predict flows under various conditions. Some of key findings include:

- Flows under dry weather conditions do not exceed either the capacity of the sanitary sewers or the Old Dundas Road Sewage Pumping Station. As such, basement flooding does not occur during dry weather periods
- Flows during wet weather events periodically exceed both the capacity of the sanitary sewers and the Old Dundas Road Sewage Pumping Station. As a result, sewage from the sanitary sewers backs up into basements causing flooding (see figure)
- The flooding is generally limited to low lying areas adjacent to the Old Dundas Road Sewage Pumping Station. (see accompanying map).



General location of basement flooding which is attributed to lack of sanitary sewer system capacity which is attributed to inflow/infiltration rates which exceed City of Hamilton design standards.

Alternative Solutions

The general types of alternatives that may be implemented in order to reduce basement flooding are summarized below.

1. Private Property Works

- Disconnect downspouts
- Improve grading adjacent to the foundation of the home
- Disconnect driveway catch basins



Driveway catch basin

2. Public Property Works

Measures which could be undertaken by the City include:

- Rehabilitating leaky sanitary sewer pipes
- Sealing sanitary manholes and implementing measures to limit infiltration/inflow in manhole covers
- Provide underground storage within the sanitary sewer system to accommodate flows which exceed the capacity of the sanitary sewers and Old Dundas Road Sewage Pumping Station



3. Old Dundas Road Sanitary Sewage Pumping Station

- Increase capacity of sanitary sewage pumping station to accommodate flows which exceed the capacity of the Old Dundas Road Sewage Pumping Station
- Provide underground storage adjacent to Old Dundas Road Sewage Pumping Station to accommodate flows which exceed sewage pumping station capacity
- Provide an emergency overflow to Ancaster Creek to protect homes from basement flooding during extreme wet weather events.



4. Do Nothing



Evaluation Criteria

The following criteria will be used to evaluate each alternative. It will help determine which alternatives should continue to be considered in selecting a preferred alternative or final recommendation.

Natural Environment

- Potential Impact on Terrestrial Systems (Vegetation, Trees, Wildlife)
- Potential Impact on Aquatic Systems, Aquatic Life and Vegetation,
- Potential Impact on Soils, Groundwater and Surface Water

Socio-Cultural

- Impact on Urban Greenspace / Recreational Use (Trees, Parks, Open Spaces)
- Disruption to Community During Construction
- Potential Impact to Archaeological and/or Natural Heritage Sites
- Niagara Escarpment Commission Designations

Economic

- Capital Costs
- Operating/Maintenance Costs

Technical

- Effectiveness of Control Measure in Eliminating Basement Flooding
- Feasibility of Control Measure (available space, accessibility, construction requirements)
- Current Pumping Station Function
- Location / Impacts of Other Utilities
- Permits and Approvals

Next Steps

Following this Public Information Centre, the Project Team will review and consider your comments related to the list of alternatives and evaluation criteria.

The next Public Information Centre (PIC #2) is expected to be held in June 2014 to present the recommended preferred solution.

Questions

For more information on this study, or to provide your comments, please contact:

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