

## **Peoples Road Area Flooding Class EA August 2021 Project Update**

The purpose of this communication is to update interested individuals and agencies regarding the progress of the study. At the time the study was initiated there was a need to gather as much pertinent information as possible to assist in identifying problem locations and probable causes of flooding in the study area.

Initially it was hoped there would be a reasonable amount of information and data available from City sources to assist in diagnosing and characterizing the locations and contributing factors leading to both overland and basement flooding issues.

Unfortunately, as the study evolved it became apparent that there were significant data gaps in the secondary source information which resulted in a need to spend more time gathering information and data. Furthermore, as supplemental data and information became available and was analysed it became apparent that the problems are fairly widespread within the study area. In addition, there did not appear to be specific focal points or areas where problems were concentrated.

Despite these challenges there has been significant progress in defining the problem to be addressed and there has been considerable effort expended in developing wastewater and stormwater collection models to assist in developing alternative solutions to mitigate the problems.

The returned questionnaires coupled with homeowner input confirmed the problems within the study area are widespread and the likely causes of basement flooding including several contributors.

Once the problems were better diagnosed, a review of precipitation records was undertaken to better understand the potential correlation between precipitation events and flooding complaints. Through that review there appears to be good correlation between the majority of flooding complaints and several significant precipitation events. In particular, the flooding problems appear to be prevalent when rainfall events exceed approximately 50 millimeters.

Other observations from the questionnaires received include:

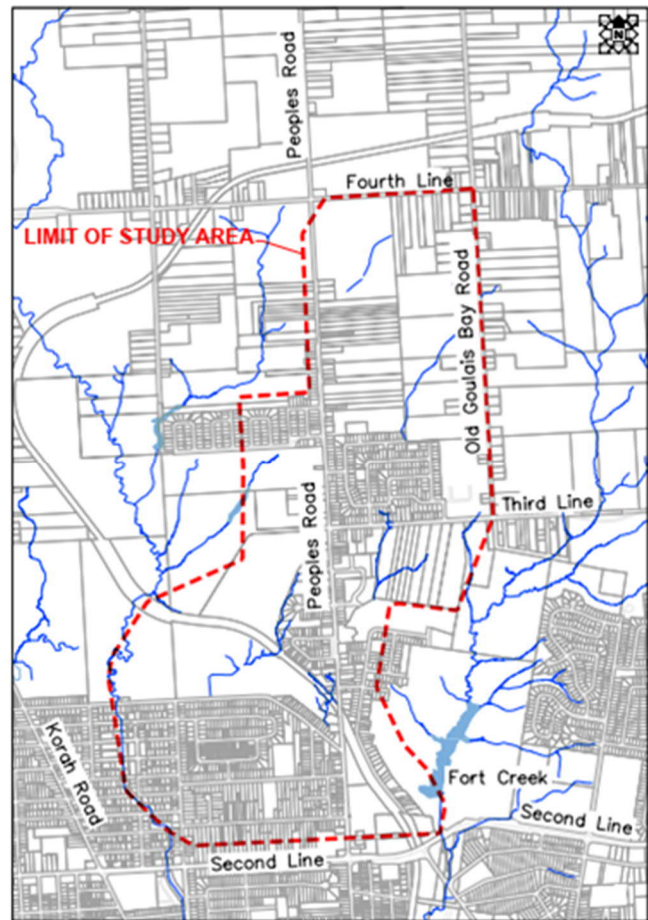
- ✦ Approximately 1/2 of the 215 returned questionnaires identified problems with basement flooding
- ✦ Approximately half of the basement flooding incidents identified that there was an odour associated with the water entering the basement and approximately 60% identified that it was dirty while the remaining 40% indicated it was clear
- ✦ When analyzing where the water was entering the basement 45 indicated it entered through floor drains, 24 indicated it entered through multiple locations, 6 indicated entry through toilets, 15 indicated entry through walls and 6 indicated entry through a window

Based on the input received the problem/opportunity was finalized as follows:

“The study has been initiated to address relatively widespread basement flooding and overland flooding within an area approximately bounded by Peoples Road and Farwell Terrace to the west, Old Goulais Bay Road and Fort Creek to the east, Fourth Line to the north and Second Line to the south (refer to key plan). Throughout the study area, there have been occurrences of overland and basement flooding primarily reported during or following significant precipitation events. The focus of this study is to identify potential causes and develop alternatives to mitigate significant impacts.”

Through the investigative and analytical work completed to date the principle contributing factors to the flooding occurrences likely consist of some or all the following:

- ✦ Potential bottlenecks or flow restrictions in the wastewater and/or stormwater collection systems which may be due to blockages (i.e. system maintenance) and/or conveyance pipe sizes;
- ✦ Limited system storage particularly in relation to stormwater management;
- ✦ Storm laterals directly connected by gravity to the storm sewer system with no backflow valve or a poorly maintained or failed backflow valve;
- ✦ Sanitary laterals connected to the sanitary sewer system with no backflow valve or a poorly maintained or failed backflow valve;
- ✦ Significant inflows and infiltration (i.e. extraneous flows) into the wastewater collection system particularly during more significant precipitation events. Sources of extraneous flows may include (refer also to Figure 2):
  - Groundwater infiltration into the collection system due to high groundwater and system leaks (i.e. broken or cracked pipes),
  - Inflows into low lying manholes or uncapped or leaky sanitary lateral cleanouts; and
  - Foundation and/or roof drains connected to the wastewater collection system.



**Study Area Key Plan**

The study is now focussing on alternative solutions and mitigation measures to reduce the impacts associated with the identified problems. A Public Input Session will be conducted in the fall to disseminate the project information including alternative solutions to property owners in the study area and interested individuals. Alternative solutions that have been identified to date and are being investigated include but may not be limited to:

- ✦ Enhanced system maintenance;

- ✦ Stormwater management pond(s);
- ✦ Increased conveyance capacity in the sanitary and/or storm water collection system(s);
- ✦ Addition of storage in the sanitary collection system;
- ✦ Removal of cross-connections to the sanitary collection system;
- ✦ Removal or modification (i.e. properly installed, reliable backflow valve) of gravity storm laterals directly connected to the storm sewer system; and
- ✦ Modification (i.e. properly installed, reliable backflow valve) of sanitary laterals.

The first four items would be a municipal responsibility while the latter three (highlighted in yellow) would be a property owner responsibility.

### Figure 2 – Typical Sources of Extraneous Flows

(Note: not aware of any storm cross-connections in this area as shown in the lower right of the figure below. and highlighted in yellow)

