Community Meeting
Lisgar District Flooding Issues

December 14, 2011
Lisgar Middle School
6:30 pm to 8:30 pm

Agenda

No.	Item	Speaker
1	Opening Remarks	Councillor McFadden Mayor McCallion
2	Presentation: • Introduction • Background to Flooding Problems • Role of City, Region and Conservation Authority • Overview of the 3-Pipe System • Investigations & Inspections Conducted by the City • Physical Work by the City • Engineering Study	Martin Powell City of Mississauga Bob Levesque City of Mississauga Ron Scheckenberger AMEC
3	Answers to Questions Received from Residents	Martin Powell City of Mississauga
4	Q & A	Wendy Alexander City of Mississauga
5	Closing Remarks	Councillor McFadden Mayor McCallion

Presentation

1. Background to the Flooding Problems
2. Role of the City, Region and Conservation Authority
3. Overview of the 3-Pipe System
4. Osprey Marsh Stormwater Management Pond
5. Investigations & Inspections Conducted by the City
6. Physical Work by the City
7. Scope of Engineering Study

BACKGROUND TO THE FLOODING PROBLEMS

Background to the Flooding Problems

- General Timeline of Flood Occurrences
- Types of Flooding Reported
- Affected Areas

Background to the Flooding Problems

General Timeline

Flooding Reported in:

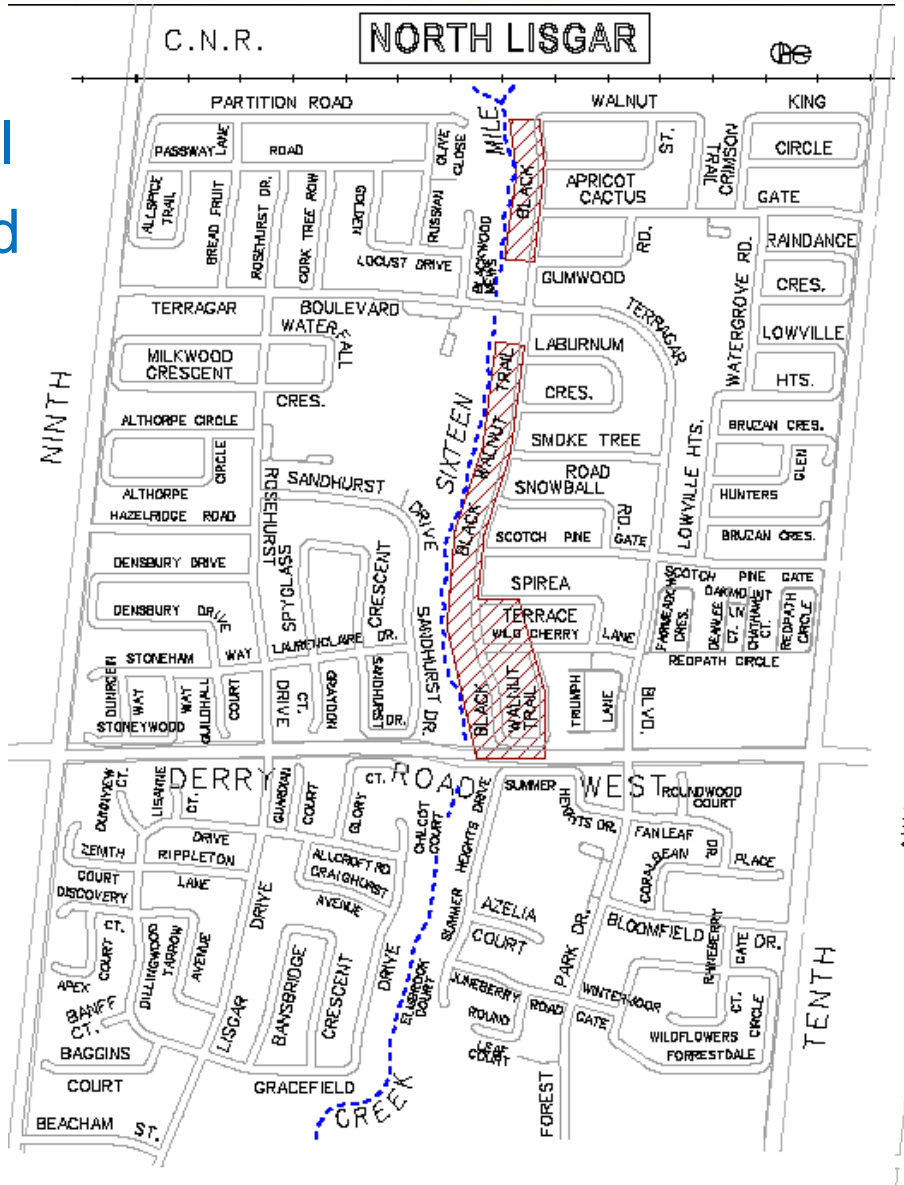
- August, 2009
- June and September, 2010
- October and November, 2011

Background to the Flooding Problems

Types of Flooding Reported

- Creek
- Roads
- Basements

General Affected Areas



ROLE OF CITY, REGION AND CONSERVATION AUTHORITY

Role of City, Region and Conservation Authority

City of Mississauga

- Responsible for planning, operation and maintenance of storm drainage systems including:
    - storm sewers and overland drainage network (e.g. roads, easements)
    - stormwater management ponds (e.g. Osprey Marsh)
    - creek corridors (e.g. Sixteen Mile Creek)
- Sets design standards and performance criteria
- Reviews and approves development plans for new storm and roadway infrastructure and site grading

Role of City, Region and Conservation Authority

City of Mississauga

During a Flood:

- Dispatches crews to ensure that critical public infrastructure is operating as designed before, during and after large storm events (i.e. road flooding or culvert overtopping)
- Focused on community safety and emergency management

Role of City, Region and Conservation Authority

Region of Peel

- Responsible for planning, operation and maintenance of sanitary systems
- Sets design standards and performance criteria
- Reviews and approves development plans for sanitary infrastructure

Role of City, Region and Conservation Authority

Region of Peel

During a Flood:

- Responds to basement flooding inquiries
- Ensures that sanitary infrastructure is operating as designed before, during and after large storm events
- Focused on customer service

Role of City, Region and Conservation Authority

Conservation Authority (Conservation Halton)

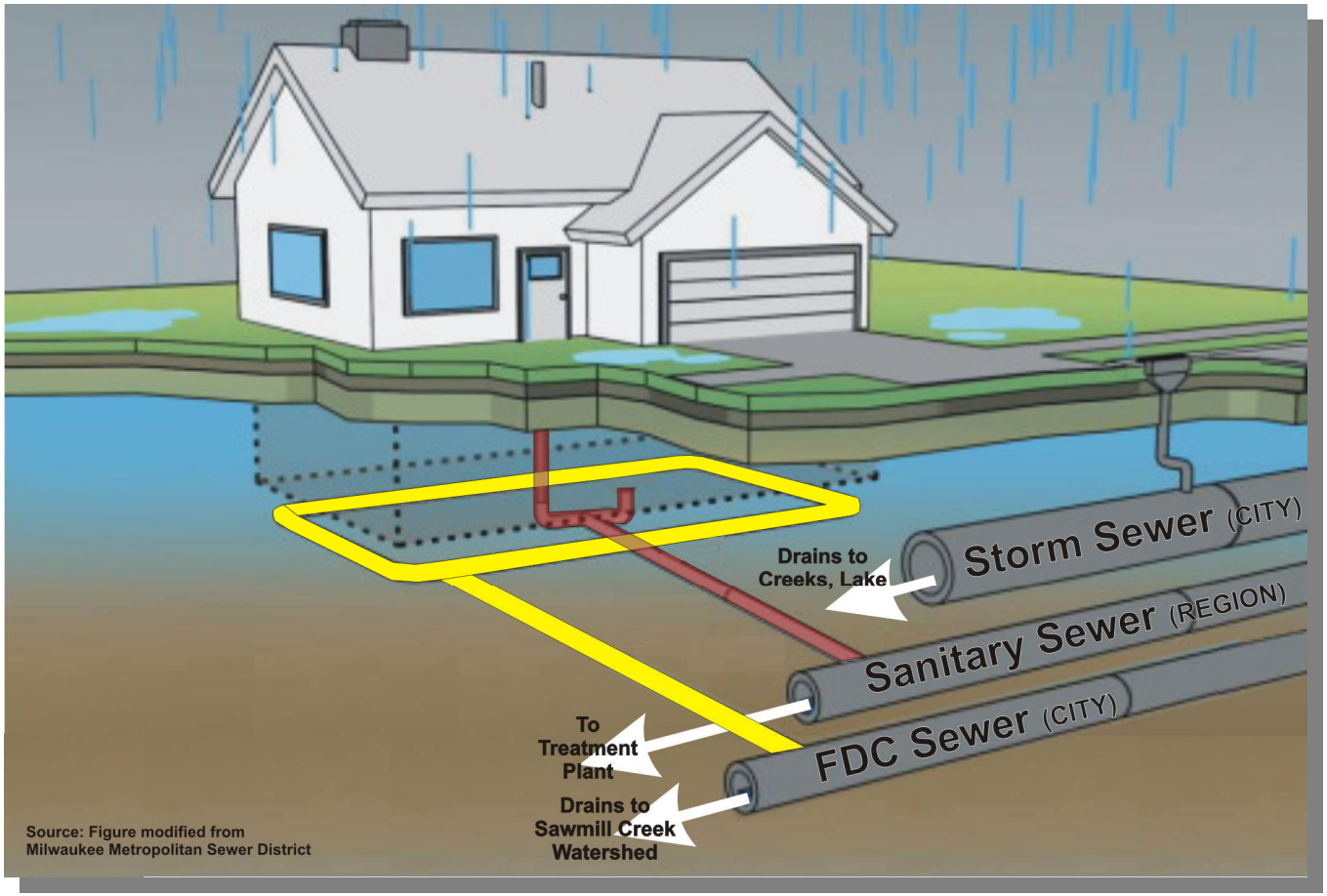
- Regulates activities within creeks, floodplains and other hazard lands
- Reviews development applications within the regulated area

<u>During a Flood</u>:

- Issues flood advisories and high water bulletins

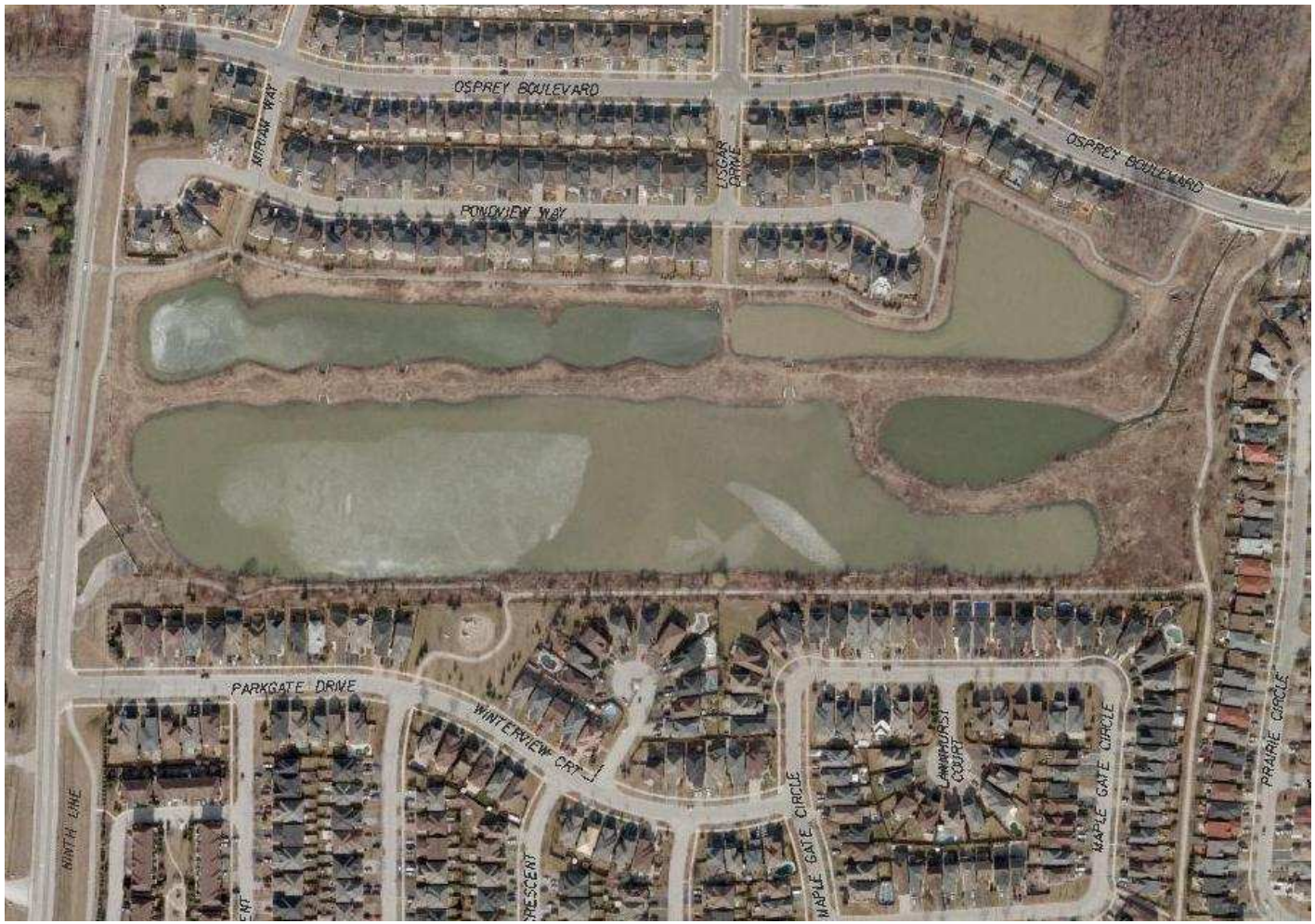
OVERVIEW OF THE 3-PIPE SYSTEM

Overview of the 3 Pipe System



OSPREY MARSH STORMWATER MANAGEMENT POND

Osprey Marsh Stormwater Management Pond



INVESTIGATIONS & INSPECTIONS CONDUCTED BY THE CITY

Investigations & Inspections Conducted by the City

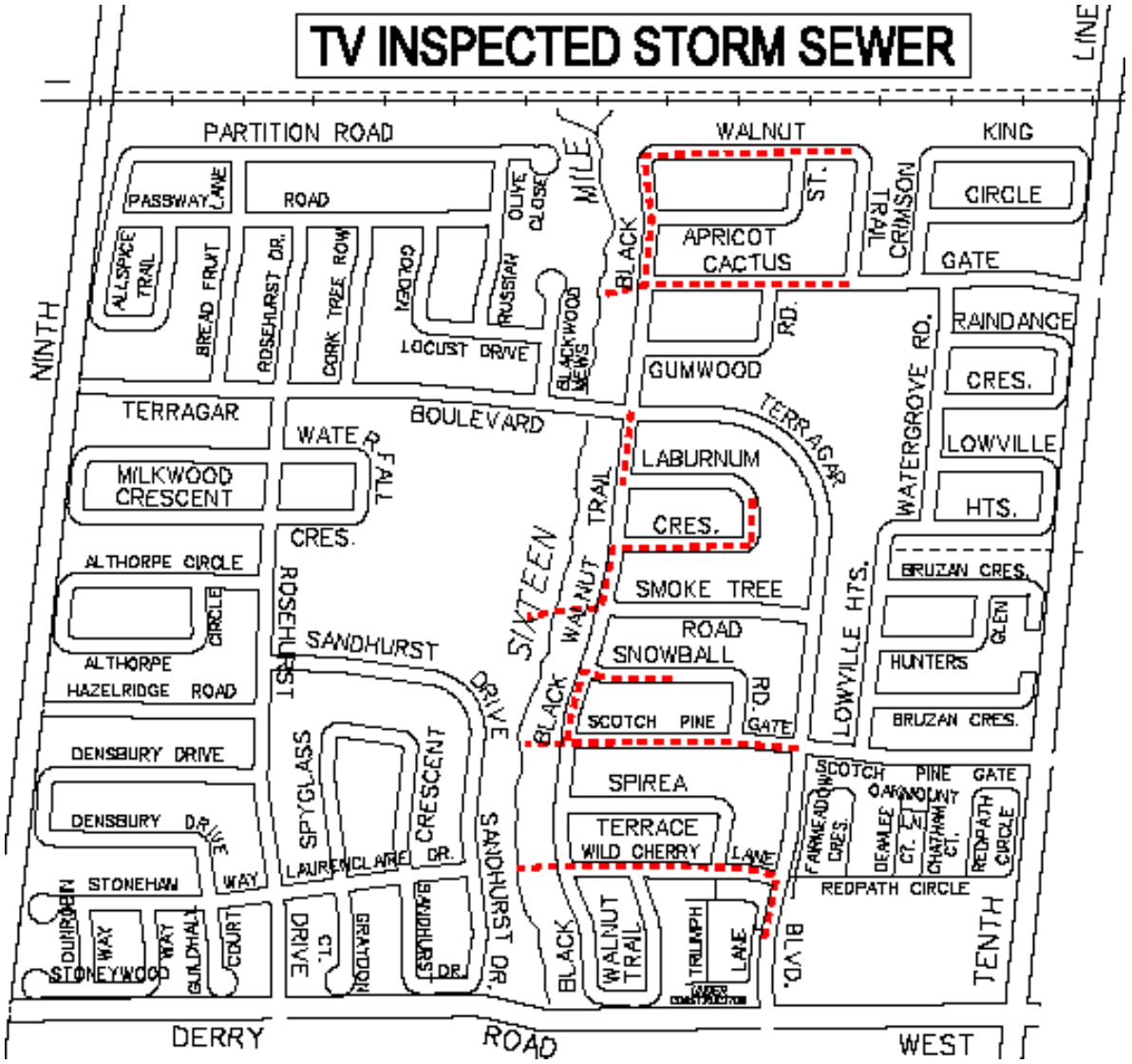
- Reviewed plans of infrastructure
- Closed Circuit TV (CCTV) of storm and FDC sewers
- Smoke and dye testing
- Topographic survey of Sixteen Mile Creek corridor
- Creek inspection with Conservation Halton

Investigations & Inspections Conducted by the City

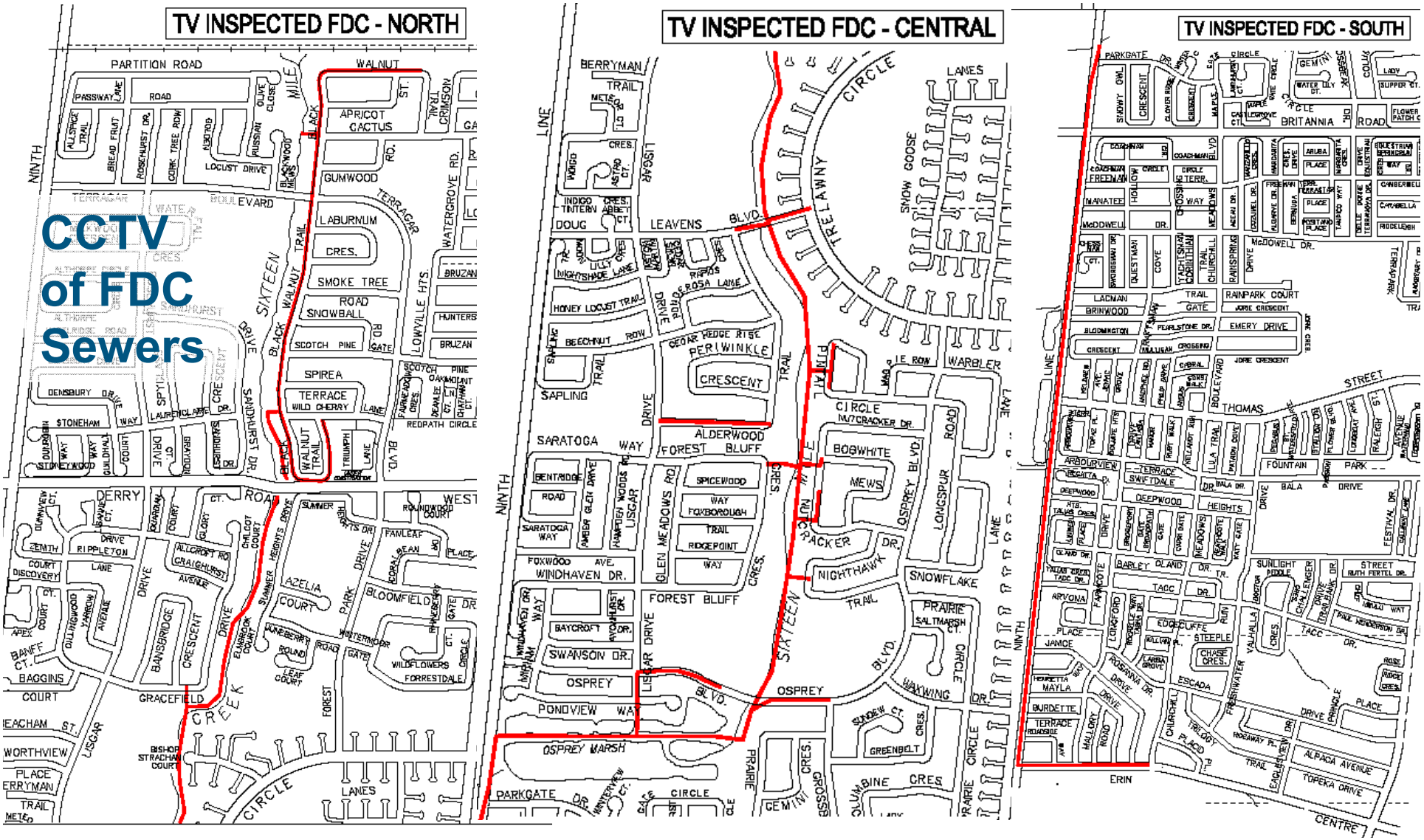
Reviewed Plans of Infrastructure

- Storm sewer plans
- FDC plans
- Grading plans
- Stormwater management reporting
- Area development plans

CCTV of Storm Sewers



CCTV of FDC Sewers



Investigations & Inspections Conducted by the City

CCTV of FDC Sewer

Smoke Testing of FDC Sewers

Investigations & Inspections Conducted by the City

Smoke Testing

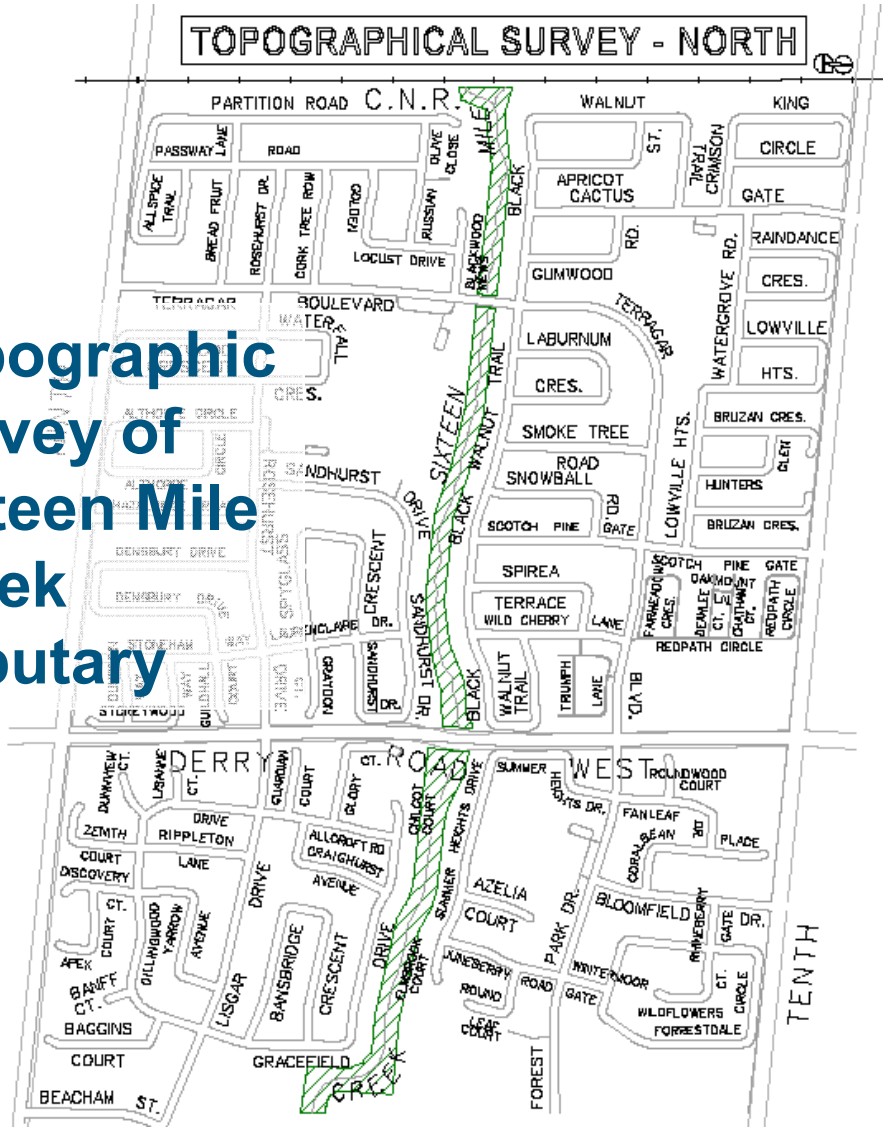
Investigations & Inspections Conducted by the City

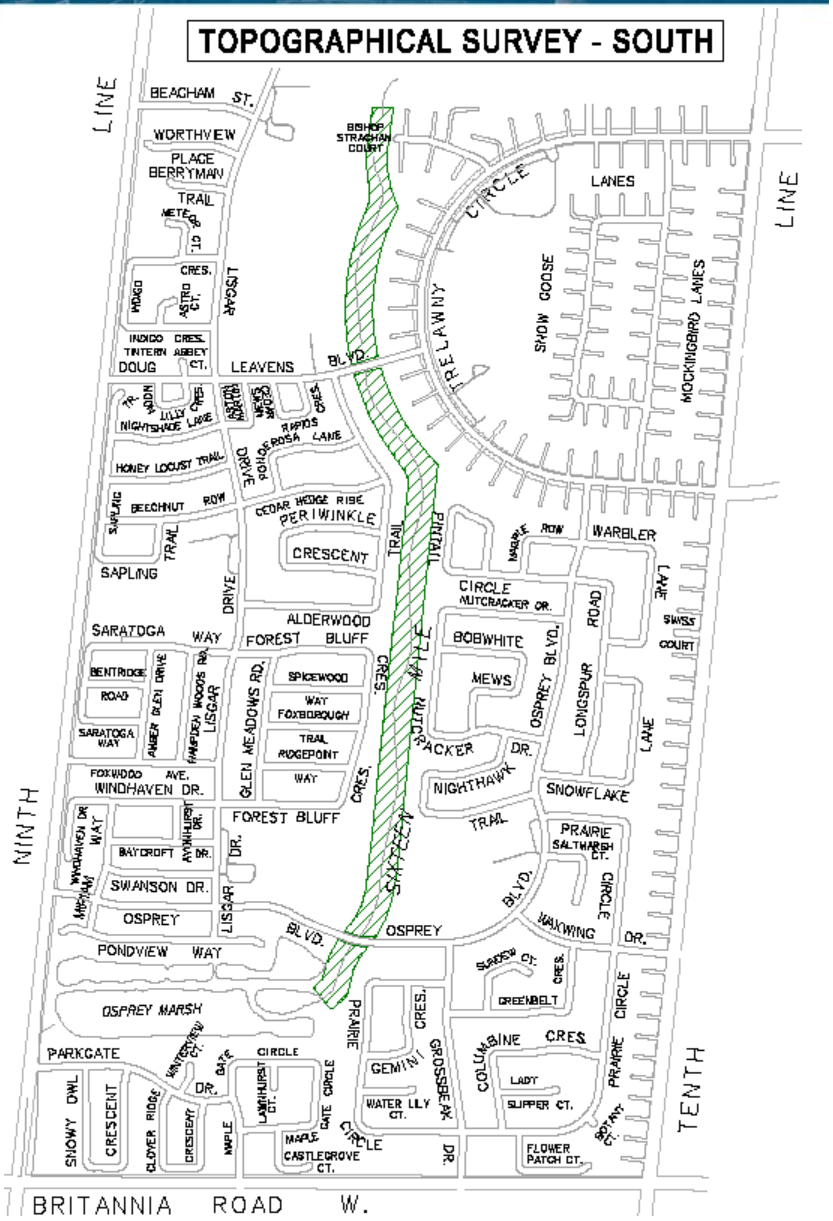
Creek Inspection with Conservation Halton

City and Conservation Halton staff inspected the entire creek from the CP tracks to Osprey Marsh to discuss:

- The condition of the creek, including vegetation and flow characteristics
- Potential vegetation and sediment removals
- Possible channel modifications
- Study requirements to support permits for works

Topographic Survey of Sixteen Mile Creek Tributary





PHYSICAL WORK BY THE CITY

Physical Work by the City

Maintenance works completed to date:

- Improvements to overland flow routes
- Debris removal from creek (e.g. garbage, furniture, shopping carts)
- Sediment removal in front of storm sewer outlets
- Sealing FDC manholes
- Flushing the FDC sewer
- Pruning vegetation in creek corridor
- Maintenance of Osprey Marsh SWM pond outlet

Physical Work by the City

Debris Removal

Physical Work by the City

Planned Works:

- Reconfiguration of the outlet to improve flow from the Osprey Marsh SWM pond (January 2012)
- Vegetation and sediment removal in Sixteen Mile Creek (subject to Conservation Authority approvals) (Winter 2012)
- On-going maintenance and repairs as identified

Major Storm Response:

- As a preventative measure utilizing stand-by pumps in FDC sewer during High Water Bulletins
- Dedicated flood response crew for the Lisgar area will be on-site.

SCOPE OF ENGINEERING STUDY

Scope of Engineering Study

- AMEC Environment & Infrastructure retained Fall 2011
- Study focused on developing an understanding of the operation of the four (4) separate systems
    1. Roadway Storm Sewer (minor system)
    2. Overland flow routes (major system)
    3. Sixteen Mile Creek Tributary
    4. Foundation Drain Collector (FDC)

- Objective to determine the interaction between the four systems and the potential causes associated with the area's flooding problems

Scope of Engineering Study

Two different components of the study:

i. Field Work

ii. Analysis/Assessment

Scope of Engineering Study

i. Field Work

Intent to collect local data on:

a) Rainfall
b) Streamflows
c) Storm Sewer Levels
d) FDC Levels
e) Groundwater Levels, temperature and characteristics

Scope of Engineering Study

i. Field Work

a) Rainfall

- Rainfall is the core driver of storm runoff hence collecting local rainfall depths (intensity) is important to better understand system performance
- The gauge will be sited in a local public building (early 2012), complemented by information from other City gauges

Scope of Engineering Study

i. Field Work

b) Streamflows

- The water levels (and flow rates) in the Sixteen Mile Creek Tributary and its tributaries at, prior and after local flood occurrences is required to determine its potential influence on the local storm sewers outlets and FDC's

Scope of Engineering Study

i. Field Work

c) Storm Sewer Levels

- The Lisgar Area storm sewers convey locally generated runoff from residential lots and roadways to the Sixteen Mile Creek Tributary
- Knowing the water levels in the storm sewer at a variety of key locations can provide data on potential inter-system contributions

Scope of Engineering Study

i. Field Work

d) FDC Levels

- These systems collect foundation drainage directly from around the basement foundations of area homes
- Knowing the levels in a variety of key locations in response to local rainfall can provide valuable insight into the hydraulic performance of the system

Scope of Engineering Study

i. Field Work

e) Groundwater Levels

- Groundwater levels usually change more slowly when compared to surface drainage and associated collection systems, however in some circumstances the changes can be more rapid and levels can reach a key threshold resulting in problems
- Observation wells with continuous data loggers will be installed throughout the area drainage systems to characterize the level and movement of groundwater

Scope of Engineering Study

ii. Analysis/Assessment

- Proposed to use the field data for the various systems, in order to develop a professional opinion on the operative mechanisms causing the area's problems
- Need to simulate the flows and levels using numerical computer models of the creek and related drainage systems
- Will also assess the creek for possible major modifications, therefore a creek specialist called a 'Fluvial Geomorphologist' will be engaged (this is a Conservation Authority requirement)

Scope of Engineering Study

Schedule

i. Completed: Background review of available information

ii. Fall 2011: Some gauges are in-place or in process of being installed including:

- Observation wells with continuous data loggers.
- FDC Gauges

iii. Winter 2012: New hydraulic models of creek system will be developed

Scope of Engineering Study

Schedule (cont'd)

iii. Spring 2012: Initial reporting on winter field work and modeling

iv. Spring 2012: Balance of monitoring equipment to be installed because of winter freeze-up including:

- Rainfall
- Streamflow
- Balance of FDC and Storm Sewer gauges

Possible modifications based on winter results (i.e. more?, less? different locations?)

Scope of Engineering Study

Schedule (cont'd)

vi. Summer 2012: Second set of reporting will depend on weather and system performance

vii. Early 2013: Study findings and recommendations expected

Note: Any potential corrective action identified during the study, regardless of when, will be brought to City staff for possible immediate implementation

ANSWERS TO QUESTIONS RECEIVED FROM RESIDENTS

Answers to Questions Received from Residents

Question:

Will the City pay the full cost to install reverse traps in our basement drains (recommended by Home Inspector)?

Answer:

The Region of Peel has a subsidy program that will assist the homeowner in the installation of a backwater valve on their sanitary lateral. Eligibility for the subsidy is based on the Region performing a free Household Drainage Survey and if no cross connections are found between the foundation drains and the sanitary system the homeowner can proceed to hire a contractor to install the backwater valve and the homeowner will be reimbursed 50% of their invoiced cost up to a maximum subsidy of $1,250 based on a total invoice of $2,500. A building permit is required from the City and the $100 fee will be waived.

Answers to Questions Received from Residents

Question:

Will the insurance deductible be reimbursed by the City?

Will future mould damage be covered by the City?

Will the City compensate for higher insurance premiums?

Will we be compensated for pain and suffering?

When will we hear back from the City regarding the claim forms submitted?

Answer:

Until the results of the study are available, the question of compensation to residents is premature as the issue of responsibility for the cause(s) of the flooding has not yet been determined. The City is conducting a comprehensive effort to find and repair the root cause of the flooding in this area. Once the City's review is complete, claims will be responded to accordingly. Please refer to the City's website regarding questions related to insurance and claims at www.mississauga.ca/insurance

Answers to Questions Received from Residents

Question:

Should sump pumps be installed at the City's expense?

Answer:

Staff report on the Lisgar flooding issues, including the feasibility and effectiveness of a sump pump subsidy program, will be brought forth to both City and Regional Council in the beginning of 2012.

Answers to Questions Received from Residents

Question:

Once the City has "fixed" the cause, will they be guaranteeing future floods to be covered by them, not our insurance?

Answer:

Any municipal drainage system can be overwhelmed depending on the nature and severity of a storm event.

Answers to Questions Received from Residents

Question:

Will the flood be a matter of public record?

Answer:

All flooding complaints and questionnaires received by the City and Region of Peel becomes a matter of public record under the Municipal Freedom of Information and Protection of Privacy Act.

Answers to Questions Received from Residents

Question:

Should the concrete run off be replaced with natural stone to allow drainage?

Answer:

This suggestion will be subject to the consultant's study and recommendations.

Answers to Questions Received from Residents

Question:

Until the "root cause(s)" of the flooding is determined, will the City "put on hold" future development that affect the Sixteen Mile Creek corridor?

Answer:

Any further upstream development will take into account the potential impacts on downstream properties and appropriate design considerations will be made, which may include recommendations made by the consultant.

Answers to Questions Received from Residents

Question:

Is the infrastructure as it is today sufficient to handle the amount of water going into the system considering all of the new developments in our area including homes, businesses and transportation (Hwy 407 and the Go Station)?

Answer:

Yes. The infrastructure has been designed and constructed to accommodate drainage under 'built-out' conditions.

Q & A

Communication

Website

- (www.mississauga.ca/flooding)

DVD of Community Meeting

- (E-mail your request to: water.info@mississauga.ca)

Questionnaire & Comment Sheet

- Please fill out and leave at the Reception Desk
- Envelopes are available if you wish to fill out at later date

Future Communication

- Quarterly updates will be provided

CLOSING REMARKS

Thank you