



Hamilton

BEACH BOULEVARD COMMUNITY STORMWATER PONDING STUDY

September 30, 2019

Historical Background of the Area

Area Flooding:

- Flooding in the area has been documented back to 1943.
- Long-term residents in the area have indicated that flooding has historically occurred.

Historical Drawings / Studies in the Area:

- Original drawings/photos show ponding prone side streets once flowed directly to the bay.
- 1999 – City of Hamilton Master Drainage Plan
 - Lake levels above 75.2 MASL resulted in flooding on streets
- 2008 – Ministry of Transportation – Existing Conditions Drainage Investigation & Preliminary Design Flood Protection for the Beach Boulevard Community
 - Field Investigations revealed as-built end-of-street drainage systems deviated from MTO contract drawings due to high groundwater levels during construction.
 - Hi Lake levels greatly influence the capacity of the storm sewer system.

Historical Background of the Area

June 26, 2019– Hamilton Spectator – Waiting for The Wave: What can Hamilton do to stave off climate-change flooding?

“Basement flooding is the price you pay to live on the beach. I’ve seen worse.

Worse includes “tiptoeing” precariously on wood planks across sewage-flooded streets when hurricane Hazel and Connie swamped the low-lying beach community in the 1950s. Or two decades later, when her son was able to float toy boats in the basement during a particularly violent storm.”



1913 – Photo Beach Area

November 27, 1950 – Globe and Mail – Winds Roar Defiance as Volunteers Fight Burlington Area Flood

“The worst flood disaster in Burlington Beach history was over. But it left in its wake more than 500 homeless people, scores injured and homes battered to the ground or washed away by the rampaging lake waters.”



Historical Photo – Lakeland area



GIS Detail – Hamilton Shoreline 1900 to 2000 (Yellow – Infill areas)

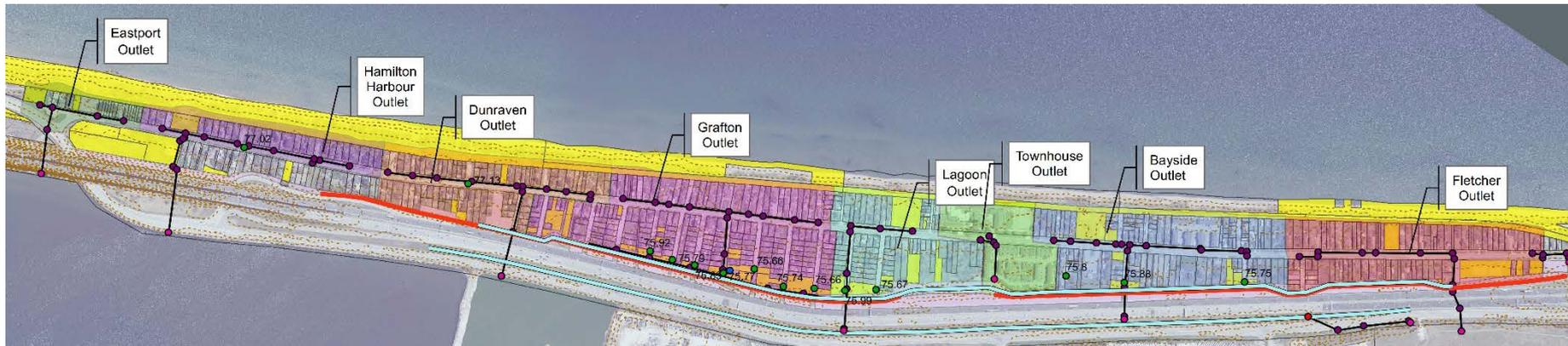
Recent Stormwater Ponding Events

2017 / 2019



Beach Boulevard Community Stormwater Ponding Study

- The Beach Boulevard Community Stormwater Ponding Study was initiated by the Hamilton Water Division in 2017.
- Dillon Consulting was retained by Hamilton Water to complete the following:
 - Provide a detailed list of solutions the City could choose from to address Stormwater Ponding in the ROW.
 - Conduct 2D PCSWMM Modelling to refine solution to individual outlet catchment areas.



2 Year Storm - 75.88 MASL

5 Year Storm - 75.88 MASL

100 Year Storm – 75.88 MASL 5

General Study Recommendations

Category	Responsibility	Recommendations	Next Steps
General	City/MTO	<ul style="list-style-type: none"> Confirm existing conditions (e.g., Eastport Ditch capacity, outlets under QEW). 	<ul style="list-style-type: none"> Acceptance of Council Report and Dillon Study: <ul style="list-style-type: none"> Land Transfer Alteration of Zoning By-Laws Development of programs Confirm existing condition of assets. MTO CCTV Inspection of culvert under QEW (2019). Development of City/MTO Maintenance Agreement. Conduct EA (e.g., Storm Sewer and Pumping Station recommendations).
	City/MTO	<ul style="list-style-type: none"> Work with MTO on a Cost Sharing Plan for the proposed recommendations. 	
Legislative	City/MTO	<ul style="list-style-type: none"> Transfer ownership of landlocked properties (QEW side of the noise wall) to MTO. 	
	City	<ul style="list-style-type: none"> Educate the Committee of Adjustments/ public why basements /crawl spaces are prohibited. 	
	City	<ul style="list-style-type: none"> Consider a “basement filling” program. 	
	City	<ul style="list-style-type: none"> Change Zoning By-Laws to prevent installation of below ground structures and alter minimum allowable ground floor elevation from 76.0 MASL to 76.5 MASL. 	
	City	<ul style="list-style-type: none"> Halt the sale of City owned property until the EA is completed. 	
Lot Level	City/MTO	<ul style="list-style-type: none"> Develop a Maintenance Agreement between the City/MTO for assets in the area. 	
	City	<ul style="list-style-type: none"> Develop an incentive program for installation of lot level stormwater practices. 	
	Resident	<ul style="list-style-type: none"> Install backwater valves on sanitary lines of private residences to protect from risk of system surcharging (Protective Plumbing Program). 	
Infrastructure	City	<ul style="list-style-type: none"> Install direct storm sewer connections when undertake stormwater system upgrades. 	
	City/MTO	<ul style="list-style-type: none"> Conduct regular maintenance of catch basins, ditches and outlets. 	
	City	<ul style="list-style-type: none"> Upgrade all stormwater pipes to handle the 5 year storm (in conjunction with major road work). 	

Outlet Catchment Recommendations

Sub-Catchment	Recommendations	Next Steps
Eastport	<ul style="list-style-type: none"> Gravity system with current outlet capacity. 	<ul style="list-style-type: none"> Acceptance of Council Report and Dillon Study. Confirm existing condition of assets. MTO CCTV Inspection of culvert under QEW (2019). Conduct EA (e.g., Storm Sewer and Pumping Station recommendations).
	<ul style="list-style-type: none"> Determine if new outlet is required. 	
Hamilton Harbour	<ul style="list-style-type: none"> Gravity system with increased outlet capacity under the QEW. 	
	<ul style="list-style-type: none"> Confirm required size/quantity of additional pipes to meet desired service level. 	
Dunraven Lagoon Bayside Fletcher	<ul style="list-style-type: none"> Install a pumping station that outlets to Lake Ontario / Hamilton Harbour. 	
	<ul style="list-style-type: none"> Confirm capacity of pumping station and if combining sub-catchments is feasible to minimize number of required pump stations. 	
Grafton	<ul style="list-style-type: none"> No additional catchment specific recommendations. 	
Townhouse	<ul style="list-style-type: none"> Confirm flow path of discharge water from catchment. 	



Hamilton

QUESTIONS?