




INFORMATION UPDATE

TO:	Mayor and Members City Council
DATE:	May 23, 2017
SUBJECT/REPORT NO:	Damage from recent rainfall and high water levels
WARD(S) AFFECTED:	City Wide
SUBMITTED BY:	Dan McKinnon General Manager Public Works Department
SIGNATURE:	

Dear Mayor Eisenberger and Members of Council,

This Information Update is to provide you with a summary of the ongoing efforts of Public Works in response to the damage caused by the unusually high water levels in Lake Ontario, and the significant rainfall events occurring in Hamilton recent weeks. Photos have been included wherever possible to provide you with a visual representation of the damage.

Beach Blvd Area Flooding

Water levels in Lake Ontario are extremely high and Environment Canada is predicting they will remain high and could even continue to rise in the coming weeks.

At this time, due to the high lake levels, Public Works staff and contractors are working together to pump water off several roadways in the neighbourhood near Beach Blvd, with a goal of reducing basement flooding impacts. Current lake levels are higher than the elevation of the roadway in some areas, and it is expected that this pumping will be required until the lake levels recede. The approximate cost for pumping and remedial grading work in the area is expected to exceed \$130,000.

OUR Vision: To be the best place in Canada to raise a child, promote innovation, engage citizens and provide diverse economic opportunities.

OUR Mission: WE provide quality public service that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Values: Accountability, Cost Consciousness, Equity, Excellence, Honesty, Innovation, Leadership, Respect and Teamwork

All existing water infrastructure in the area is working as intended, although the sanitary sewer system in the area is experiencing increased flows due to lake and storm runoff infiltrating the system.

Public Works staff will be undertaking a drainage study to determine potential medium and long-term solutions to managing lake levels and drainage issues in this neighbourhood over the longer term. More information on timelines and details of the study will be brought to Council when available. It is anticipated that the study will cost approximately \$75,000.

Continued Overflow on Combined Sewer Overflow Tanks

During the April 20, 2017 storm, all combined sewer overflow tanks in the City experienced very high flows and were overflowing for between one and 39 hours. After the rain subsided, most of these tanks were drained to prepare for future use. However, crews are presently unable to drain two of the tanks – Strachan and Eastwood – as they remain submerged due to high lake water levels.

Additionally, as a result of the combined sewer overflow tanks and associated infrastructure being submerged, staff are seeing evidence of fish entering the sewer system. They are being removed at the wastewater treatment facility. This situation is quite unusual and staff do not have any previous records of fish appearing in the sewer system in this manner.

York Road Closure

An emergency closure of York Road occurred on the afternoon of Thurs, May 5, 2017. The roadway was closed in the interest of public safety after the rain caused a culvert to collapse, resulting in flooding and potential



Figure 1: Fish that have made the 8 km journey from Lake Ontario through submerged pipes to the Woodward Avenue Wastewater Treatment Facility. May 10, 2017.



Figure 2: Collapsed culvert on York Road. May 5, 2017

undermining of the roadway.

York Road requires significant rehabilitation, including a completely new culvert and will be closed until approximately mid-June. Public Works is working with the Conservation Authority to ensure proper permits and procedures are followed, given the environmental sensitivity in the area surrounding the roadway.

The estimated cost for this repair is approximately \$350,000.

Confederation Beach Park Front Damage

Along the shoreline at Confederation Beach Park, the high water levels have dislodged trees, exposed roots and significantly eroded the beach. In this area, east winds are causing large crashing waves that are resulting in ongoing erosion and problems along the shoreline.

Public Works is continuing to work with the Hamilton Conservation Authority to examine



Figure 5: Erosion along the shoreline at Confederation Beach Park. May 10, 2017.



Figure 3: Work that has occurred on the collapsed culvert on York Road. May 8, 2017.



Figure 4: Erosion along the shoreline at Confederation Beach Park. May 10, 2017.



Figure 6: Erosion along the shoreline at Confederation Beach Park. May 10, 2017.

what can be done to protect the shore in the short, medium and long-term, including hiring a consultant who specializes in shoreline management.

Costs for these repairs are currently unknown.

Waterfront Trail Closure

The Waterfront Trail was closed on April 30, 2017 after high water levels and significant winds flooded the pathway and began to erode many areas along the trail.

Crews did clean up the debris from this initial wind storm on April 30, 2017, but the trail is continuing to be flooded with water and debris when there are east winds – even as recently as May 22, 2017. High water levels and significant winds are continuing to cause flooding, washout and undermining of the asphalt on the trail.

Public Works has contracted specialists in shoreline erosion to assess the condition of the trail and provide recommendations on repairs.

Staff are working with the Hamilton Conservation Authority and Fisheries and Oceans Canada to ensure proper permits and procedures are followed, given the natural sensitivity in the area surrounding the trail.

At this time, it is expected that the Waterfront Trail will be closed for several weeks. Currently, the estimated cost for this repair is approximately \$700,000 - \$1,000,000, pending future weather.



Figure 7: Waterfront Trail near Bayfront Park. April 30, 2017.

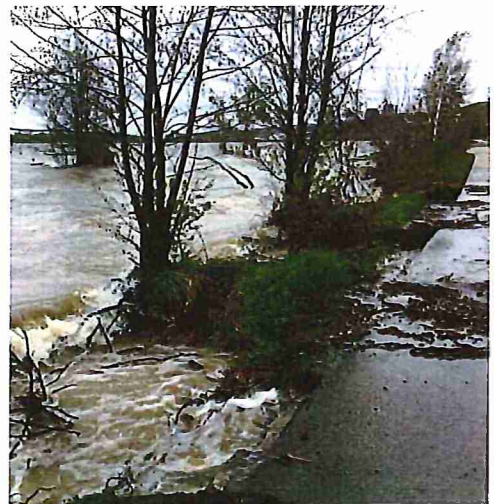


Figure 8: Waterfront Trail near the Desjardins Bridge. April 30, 2017.



Figure 9: Waterfront Trail near Bayfront Park. May 14, 2017.

Rail Trail Closure

The Rail Trail was closed in the interest of public safety on Tuesday, May 9, 2017 between Wentworth Street S and the Kimberly Stairs. The section of trail that runs along the side of the escarpment was showing signs of movement, cracking and sinking of the asphalt. To date, there are four separate areas along the trail with similar issues to those pictured here.

Public Works has contracted specialists in geotechnical engineering to assess the trail. The contractor has identified a strategy to temporarily repair the path and staff re-opened the trail to limited traffic on Friday, May 19, 2017. There will still be five areas coned off with signs and caution tape to make the trail as safe as possible for pedestrians and cyclists. No vehicle traffic will be permitted.

Longer-term repairs will be needed, and may require a future closure.

Kenilworth Access

A mudslide occurred near the hair-pin turn of the Kenilworth Access on the afternoon of Friday, May 5, resulting in emergency closure of all up-bound lanes on the upper portion of the access.

Recent maintenance in the area, which included clearing the catchment area directly below the mudslide area, significantly reduced impacts of debris on the roadway. Contractors cleaned up the debris from the roadway and catchment on Saturday, May 6, but the lanes remained closed until the morning of Sunday, May 7, 2017 as a safety precaution.



Figure 10: Asphalt along the Rail Trail between Wentworth Street and the Kimberly Stairs showing signs of cracking and sinking. May 5, 2017



Figure 11: Asphalt along the Rail Trail between Wentworth Street and the Kimberly Stairs showing signs of cracking and sinking. May 5, 2017



Figure 12: Mudslide on the up-bound lanes of the Kenilworth Access. May 5, 2017.

Kenilworth Access onramp from the Sherman Access (East Leg)

The connection between the East Leg of the Sherman Access and the Kenilworth Access was closed on Friday, May 5, 2017 due to concerns about falling rocks. It re-opened on Sunday, May 14, 2017 after contractors completed rock scaling to remove rocks that were exposed during the significant rain events.



Figure 13: Onramp from the Sherman Access

Sherman Access (West Leg)

The West Leg of the Sherman Access was closed for the day on Sunday, May 7 so crews could safely complete repairs caused by washout of the shoulder. It was re-opened on Sunday, May 7 as scheduled, and returned back to the existing one-lane set up west of the Wentworth Stairs, due to unrelated concerns about the retaining wall. There will be a full closure of the West Leg of the Sherman Access for much of the summer and fall while the retaining walls are repaired and replaced.



Figure 14: Washout on the shoulder of the West Leg of the Sherman Access

Recent remedial work along all of the escarpment roadways is estimated to cost approximately \$50,000.

Fifty Point Parkette

The concrete viewing platform at Fifty Point Parkette was closed on Friday, May 5 due to damage caused by high water levels.

The high water levels in the area have resulted in damage to the shoreline retaining wall, which caused material under the concrete viewing platform to be eroded away. Crews will be demolishing the viewing platform and removing planters, benches and fencing as they are unsupported and are a significant safety concern. Repair and replacement of the parkette is estimated to cost between \$300,000 to \$600,000.



Figure 15: The material under the platform at Fifty Point Parkette has been eroded away, leaving it vulnerable to collapse.

Sydenham Creek Dredging

The April 20, 2017 storm caused significant flooding in Dundas near Sydenham Creek. Some of the flooding was caused by a substantial blockage of the inlet at Cootes Drive and King Street E. The blockage was caused mostly by an accumulation of debris from upstream in Sydenham Creek.



Figure 16: Inlet from Sydenham Creek at Cootes Drive and King Street E. April 21, 2017.

Generally, the City monitors creeks for erosion and significant debris but does not interfere with the natural processes within these areas, which are often regulated by a conservation authority.

However, the City has requested permission from the Hamilton Conservation Authority and Fisheries and Oceans Canada to do emergency dredging in Sydenham Creek to prevent further potential flooding in Dundas. This will include the removal of sediment and rubble. The dredging is expected to cost approximately \$150,000.

Grants & Financial Impacts

Staff are tracking and monitoring costs and repairs required due to rainfall and high water levels. At this stage, the estimated cost of the known remedial actions will total approximately \$1.8 to 2.5 million. Staff will share more information related to required remedial actions and costs with Council as appropriate.

Staff are also investigating the Municipal Disaster Recovery Assistance program, offered by the provincial government to municipalities that have incurred extraordinary costs because of a natural disaster. However, at this stage it seems unlikely that the cost of damage in Hamilton will meet the threshold to apply for the program.

To date, the City has received 38 liability claims with respect to flooding in recent weeks.