



# INFORMATION REPORT

<b>TO:</b>	Chair and Members Public Works Committee
<b>COMMITTEE DATE:</b>	July 10, 2019
<b>SUBJECT/REPORT NO:</b>	Elevated Lake Levels and the Derating of the Peak Flow Capacity at the Woodward Avenue Wastewater Treatment Plant (PW19065) (City Wide)
<b>WARD(S) AFFECTED:</b>	City Wide
<b>PREPARED BY:</b>	Andrew Grice (905) 546-2424 Ext. 1461
<b>SUBMITTED BY:</b>	Andrew Grice Director, Hamilton Water Public Works Department
<b>SIGNATURE:</b>	

## COUNCIL DIRECTION

Not applicable.

## INFORMATION

The main purpose of this update is to make Council aware that the existence of sewage bypass will increase at the Woodward Wastewater Treatment Plant for the durations described below but are necessary to complete this vitally important project.

### Elevated Lake Ontario Levels:

The Lake Ontario – St. Lawrence River Plan 2014 (Plan) lead by the International Joint Commission (IJC) recommended greater fluctuations in lake levels to rejuvenate natural habitat. The Plan was implemented in 2017 and while it intends that the overall average lake level will remain relatively unchanged the high range of permissible operation is approximately one (1) meter above historical averages.

In 2017 municipalities located along Great Lakes were impacted by record setting lake levels that put stress on municipal infrastructure and created localized flooding problems for residents. In 2019 Lake Ontario water levels have exceeded the 2017

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OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

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record highs reaching a maximum daily average elevation of 75.98 meters above sea level as of June 15, 2019 according to data from the Department of Fisheries and Oceans Canada. Hamilton Water staff expect the lake levels to slowly decrease over the months of July and August but the impact to our infrastructure and customers has been significant.

Hamilton Water staff developed contingency plans as a result of the 2017 events and those plans were put into action early in 2019 to combat the rising lake levels. Temporary road side pumping has been set up on the Beach Boulevard strip to move surface water away from the road and residential properties. Numerous sewage pumping stations are struggling to keep up with increased flows and supplemental pumping has been incorporated to support the stations. Finally, temporary control structures have been put into place at strategic locations to minimize harbour water entering the combined sewer system through outfalls and protect the Woodward Wastewater Treatment Plant (WWTP). It is expected this work will continue into August as the lake levels will recede slowly. The final costs are unknown at this time, however, staff have estimated the total cost at \$2.5M - \$3.0M excluding staff time, electricity, and treatment chemicals.

The Beach Boulevard community is particularly vulnerable to rising lake levels given its low lying elevation. This area has been the subject of a strategic study launched as a result of the 2017 experience. A report has been developed specific to this area, complete with recommendations, that are planned to be communicated later this year.

**Temporary Derating of the Woodward Wastewater Treatment Plant:**

The Woodward Upgrade Project (WUP) is a \$315M capital investment into the Woodward WWTP and is a critical component of the Hamilton Harbour Remedial Action Plan. The WUP is being delivered through three construction projects:

- Contract 1 – Main Pumping Station Project;
- Contract 2 – Electrical and Chlorination Project; and
- Contract 3 – Tertiary Treatment Project.

All three contracts are in the construction phase and are on schedule for a completion date of December 2021.

In order to facilitate construction of a new tertiary treatment process as part of Contract 3, portions of the existing WWTP will be offline until project completion in December 2021. From June 2019 through to November 2020 a portion of the secondary treatment system will be unavailable reducing the WWTP's wet weather peak capacity from 614 MLD to 511MLD. From approximately November 2020 until project completion in

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December 2021 the wet weather capacity will be increased from 511 to 562 MLD. Upon project completion the WWTP will return to full rated capacity with the added benefit of tertiary treatment. The addition of tertiary treatment to the Woodward WWTP will have the single largest impact on water quality and the journey towards delisting Hamilton Harbour as an international Area of Concern.

The combination of climate change (elevated lake levels and intensity of storms) and derating of the Woodward WWTP may result in more frequent by-passes during wet weather events. For example, from January 1, 2019 through June 15, 2019 there have been 18 by-passes at the Woodward WWTP which is three (3) by-passes above the annual average from 2014 through 2018 (five (5) years).

**APPENDICES AND SCHEDULES ATTACHED**

None.