

**Subject:** Update on Uncommitted Reserve Capacity at the Water Pollution Control Plant

**Department:** Infrastructure Services

**Division:** Environment

**Report #:** IS-Env-2020-013

**Meeting Date:** September 28, 2020

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**Orangeville Forward – Strategic Plan**

**Priority Area:** Sustainable Infrastructure

**Objective:** Plan for Growth

**Sustainable Neighbourhood Action Plan**

**Theme:** Land Use and Planning

**Strategy:** Co-ordinate land use and infrastructure planning to promote healthy, liveable and safe communities

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## **Recommendations**

That report IS-Env-2020-013, Uncommitted Reserve Capacity at the Water Pollution Control Plant be received.

## **Background and Analysis**

Each year Infrastructure Services calculates the uncommitted reserve capacity at the WPCP in accordance with the Ministry of Environment (MOE) Procedure D-5-1, Calculating and Reporting Uncommitted Reserve Capacity at Sewage and Water Treatment Plants. Historically these calculations have been used to confirm the remaining capacity at the Water Pollution Control Plant (WPCP) and as justification for allocations of sewage treatment capacity.

In early 2008, Council passed a new Sewage Treatment Allocation Policy, which tied the number of units that may be allocated treatment capacity prior to an expansion of

the WPCP to the D-5-1 calculations that were based on flows to the WPCP in 2006. The rationale for this was that 2006 was a wet year which resulted in very high flows to the WPCP. The policy assumes that the flows to the WPCP in 2006 constitute a worst case scenario, and that by allocating on that basis, the risk of exceeding the rated capacity of the WPCP is minimized.

With the Sewage Treatment Allocation Policy in place, the importance of these annual calculations is reduced. However, it is important that these calculations are completed annually to confirm that the assumptions that form the basis of the Sewage Treatment Allocation Policy remain valid.

The calculations are completed using a full year of flow data. The results of the calculations using the 2019 flows are provided in Table 1. The complete calculations based on the 2019 flows are in Attachment 1 to this report. It should be noted that the uncommitted reserve capacity flow includes an allowance for industrial, commercial and institutional growth in the same proportion as presently exists in the Town. Based on the water consumption records, the ratio of the residential to non-residential flow to the plant is approximately 75% to 25%.

**Table 1** Flows at Water Pollution Control Plant

	2018	2018	2017	2016	2015
Plant design capacity (m <sup>3</sup> /d)	17,500	17,500	14,400	14,400	14,400
Total flow to the plant (m <sup>3</sup> )	4,095,264	4,252,664	4,554,316	3,824,580	3,738,123
5-year average day per residential unit flow (m <sup>3</sup> /d)	1.03	1.04	1.05	1.03	1.06
3-year average day per residential unit flow (m <sup>3</sup> /d)	1.07	1.06	1.03	1.01	1.05

	<b>2018</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
Actual recorded average day flow (m <sup>3</sup> /d)	11,220	11,651	12,478	10,450	10,241
Hydraulic reserve capacity (m <sup>3</sup> /d)	6,280	5,849	1,922	3,950	3,424
Residential units with committed capacity	161 units	192 units	220 units	380 units	469 units
Committed plant capacity (m <sup>3</sup> /d) *	390	426	449	611	703
Uncommitted reserve capacity (m <sup>3</sup> /d)	5,890	5,423	1,474	3,340	3,456
Uncommitted reserve capacity	5,728 units	5,201 units	1,398 units	3,240 units	3,260 units
Total precipitation (mm)	816.2	952.4	1211.4	890.2	756.2

\* Committed Plant Capacity includes an allowance for the additional flow to the WPCP from the filter backwash at several water treatment sites. While it is no longer planned, an allowance for a Humber College campus on Veterans Way has been included here pending the disposition of the property.

As noted above, higher than average precipitation in 2006 led to high flows to the WPCP, which in turn resulted in the limited uncommitted reserve capacity at the WPCP which now forms the basis of the Sewage Treatment Allocation Policy. In 2019, the flows to the WPCP were less than those experienced in 2006. This confirms that continuing to use the 2006 flows (worst case scenario) as the flow component for the

calculations that are the basis for the Sewage Treatment Allocation Policy is a conservative approach.

The expansion work at the WPCP was substantially complete in June 2018. This increased the available treatment capacity at the WPCP from 14,400 m<sup>3</sup>/d to 17,500 m<sup>3</sup>/d, and increased the number of new residential units that can be allocated sanitary servicing. With this increase in available treatment capacity, sanitary servicing is not expected to be a limiting factor when allocating servicing capacity for the foreseeable future. Staff suggest it would be appropriate to review and update the Servicing Allocation Policy for Council's consideration to reflect this increased capacity.

## **Financial Impact**

There is no financial impact associated with this report.

Respectfully submitted  
Douglas G. Jones, M.E.Sc., P. Eng.  
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### **Attachments:**

1. Water Pollution Control Plant – Available Reserve Capacity as of January 1, 2020