



April 20, 2017

Via: Email

Mrs. Jane Wilson
Clerk Treasurer
Township of Amaranth
374026 6th Line
Amaranth ON L9W 0M6

Dear Jane:

**Re: Capacity at Wastewater Plant
Project No.: 300034433.0000**

We are hereby reporting on available capacity for additional connections to the wastewater plant. Our last update was our letter of August 5, 2016, at which time we reported that 61 units were available for distribution to the development community. Since that time, there have been two updates, discussed as follows:

2016 Annual Performance Report

Flows to the plant in 2016 are shown in the following chart, along with the reported flows in previous years:

	Wastewater	
Year	Average Day (m³/d)	Maximum Day (m³/d)
2011	523	N/A
2012	642	2,601
2013	821	2,254
2014	776	4,671
2015	466	1,123
2016	553	2,597

Capacity is typically calculated on the basis of Average Day Flow. It can be seen that the reported flow received at the plant has declined substantially from previous years. This is not flow per capita and is therefore not explained by newer housed being contributors. There has been no major elimination of flows that would rationalize a reduction in flows as high as 32% from 2013 to 2016.

We believe that the reduction in flows can be attributed to a combination of variation in weather events and questionable recording of data in previous years. On the basis of average day flows, the MOECC Guideline D-5-1 (Calculating and Reporting Uncommitted Reserve Capacity at Sewage and Water Treatment Plants) would support a significant increase in available capacity at the plant.

**Grand Valley WPCP Re-Rating Feasibility Study
Summary of Capacity Assessment and Re-Rating Potential
XCG Consulting, January 24, 2017**

The above noted MOE Guideline includes a section entitled "Plant Performance Characteristics Which May Affect the Use of the Above Formula". This section requires consideration of other factors that may affect the performance of the plant. Some of the findings of the XCG report relate to plant performance during peak flow events.

Specifically, XCG reported that "the capacity of several treatment processes at the Grand Valley WPCP may be limited by maximum day and peak hour flows" (as opposed to being limited by average day flows). It was reported that the peak flows processed by the plant in April, 2014, exceeded the capacity of the Secondary Clarifiers and there have been other high flow events where the peaks have also been at or near the capacity of the clarifiers.

We note that the number of houses constructed in Grand Valley since this peak event in April of 2014, in addition to the houses already made available for future development total approximately 450. In other words if another event occurs in the future that is the same as the one experienced in 2014, then the plant will not only go beyond the capacity of its secondary clarifiers, but it will also be receiving an additional flow from 450 houses.

In light of the reporting from XCG Consultants we are not able to recommend the release of any further allocation to developers at this time.

I look forward to discussing this matter with Council on April 25th.

Yours truly,

R.J. Burnside & Associates Limited



Gord Feniak
GF:js