

2014-0300-12

December 5, 2018

Ms. Kaitlyn Rosebrugh
Resource Planner

Grand River Conservation Authority
400 Clyde Road
Cambridge, ON N1R 5W6

Dear Ms. Rosebrugh:

**RE: Official Plan Amendment Application No. 20
Zone Change Application Z-18-04
40 Blue Springs Drive, Waterloo
Club Willowells
Response to Grand River Conservation Authority (GRCA) Review Comments**

Further to your correspondence of April 9, 2018, regarding the subject application, we provide below our responses to the comments made during your review.

4) The amount of imperviousness used in the Functional Servicing and Stormwater Management Report for post-development condition (0.54 hectares impervious and 0.45 hectares pervious) is not consistent with the Site Data provided by ABA Architects (0.64 hectares impervious). As such, both the hydrology and water balance calculations must be revised to reflect the proper value for impervious area.

The report has been revised to match the site data chart by ABA Architects. Hydrology and water balance calculations in the report also now reflect this change. It should be noted that WalterFedy has matched the total pervious and impervious areas provided by ABA, since the landscaped area in the Site Data sheet includes concrete sidewalk.

5) Discussions regarding the seasonally high ground water table has not been provided. Boreholes were drilled in early September of 2017 and may not appropriately represent seasonally high ground water levels

The report has been updated to note that additional measurements of ground water will be undertaken prior to detailed design. It is understood that the GRCA required additional investigations as the applicant (i.e. current owner) may not be responsible for future development of the site. However, the current application is only to re-zone the site and, regardless of the applicant, the GRCA will have an opportunity to review the design in much greater detail at site plan stages. The extent of additional investigations (i.e. additional water level readings vs. a full hydrogeological report) can be better understood when the design is more advanced.

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The current measurements indicate that the ground water level is consistent with the water level of Four Wells Lake. Based on this comparison, there is still approximately 2.8 m separation between the underside of the parking garage and the ground water level.

Given that the underside of the parking garage is also 0.5 m above the Regulatory Flood Elevation in this area, we request that the GRCA revisit the ground water levels at the detailed design stage.

6) For review of a development application, the GRCA typically requires a monthly budget for water balance. In addition, estimation of evapotranspiration values must be based on local meteorology parameters, not by selecting a value from the MOE tables. Based on sensitivity tests conducted, GRCA may be satisfied with the current water balance pending adjustment of pervious and impervious area proportions.

As this is a functional submission, the water balance calculations are based on impervious areas at this stage. As the design progresses, a more detailed analysis on a monthly water balance will be conducted. GRCA will have the opportunity to review, in detail, the revised calculations at the Site Plan Approval stages.

Additionally, with reference to an e-mail from John Brum, dated June 5, 2017, we note that the Regulatory Flood Level (RFL) on the drawing has been revised to incorporate cross section #1141.1 and #1107.1; this new RFL has been plotted on the drawings.

We trust that the responses provided herein will allow you to continue the approval process for our submission. Should you have any other questions or concerns, please do not hesitate to contact the undersigned.

Respectfully submitted,

WALTERFEDY



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