

Elisha Hewgill

Subject: Preliminary First Submission Review Report - Wilder's Lake Subdivision - Southgate

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Sent: June 23, 2020 3:24 PM

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Clinton and Randy

R. J. Burnside and Associates Limited (Burnside) have completed a cursory review of all the **First Submission** documents related to the Wilder's Lake Subdivision in the Township of Southgate and our preliminary comments, pending a more detailed review, are as follows:

Stormwater Management

Burnside's preliminary review of the SWM report and the hydrology model noted the following that will need to be addressed:

- The use of Low Impact Development (LID) options are considered which is a good approach to stormwater management from both an environmental and cost perspective. The hydrogeology report notes coarse grained materials allowing for high infiltration rates generally supporting LID SWM practices. At the feasibility stage a hydrogeological review of the current SWM plan is recommended to specifically comment on the risk of adverse impacts to wells from road de-icing salt use.
- Hazard area setbacks should be shown on the drawings and referred to in the SWM Report for Wilder Lake and Camp Creek to delineate flooding setbacks as these setbacks impact lot layout and grading.
- Drainage blocks or easements to provide legal outlets for stormwater. For example, SWM pond block 30 appears to drain to an existing wet area and then overland across private property; also a portion of a proposed culvert on Lot 2; other examples may surface as Burnside proceeds with the review.
- The existing and Regulatory Lake Levels for Wilder Lake were not prominently noted.
- A "zoomed out" catchment map will need to be included to confirm if there are any external drainage areas to the site.
- Additional information/comments regarding fisheries and ecology from approval agencies such as the Saugeen Valley Conservation Authority (SVCA) and Department of Fisheries and Oceans (DFO) as applicable should also be provided as the feasibility of the design will be contingent on their comments, as the SWM design relies on enhancements to existing water features. Approval Agency comments may place constraints on these water features. Treatment levels for water quality for discharging runoff to natural watercourses or lakes will need to be confirmed.

Hydrology Report

Burnside's preliminary review of the hydrogeology report noted the following that will need to be addressed:

- Since the development will use individual on-site systems for sewage disposal there is a potential for impacts to the groundwater and surface water in the area. Here is an excerpt from the report:

Shallow groundwater flow often correlates to topographical features and typically flows towards nearby lakes, streams, and wetland areas, except where modified by service trenches. Based on the area geology and topography, the shallow groundwater flow is inferred to be primarily to the west congruent with the Camp Cree drainage system. Although Wilder Lake is a major surface water feature in the area, it has been created by anthropogenic disruption (damming along the west), and is inferred to create a groundwater mounding scenario whereby groundwater flows are from Wilder Lake to the west. Groundwater flow on the south, east, and northeast of Wilder Lake, are inferred to be towards Wilder Lake.

These expected groundwater flows are consistent with the water levels measured during the monitoring program. The inferred direction of shallow groundwater flow is shown on Figures A, B1 and B2 (representing fall 2011 conditions) and the measured groundwater elevations are summarized in Table 4. The mounding effect associated with Wilder Lake is consistent with a reservoir type setting with gradients away from the discharge area (i.e. Camp Creek).

- The copy of the hydrogeology report reviewed by Burnside does not contain the figures A, B1 and B2 as referred to in the report.
- A measurement of lake levels is important to include so that it can be used to confirm the mounding effect.
- The direction of groundwater flow is also required to predict the impacts of nitrate and phosphorous on surface water features.
- The report uses the MECP D-5-4 Guideline to calculate the expected concentration of nitrate in the groundwater. This is appropriate, however Burnside would like to see an estimate of phosphorous loading in nearby surface water features. The infiltration estimate appears to be quite high, and although use of a lower rate will not impact the number of lots allowed based on nitrate loading, it may have an effect on the amount of setback required between the sewage systems and surface water features (a lower infiltration rate will reduce the amount of dilution between the septic bed and the receiver).
- One of the water wells (A227593) that was tested has very limited available drawdown (about 2m). This may be a function of only screening a small portion of the overburden aquifer. Burnside requests that a cross section through the area be provided to establish the depths and extents of aquifers in the area.

General

- It is noted that Traffic Impact Study has not been included in the submission. This is noted to ensure there are no issues or concerns in this regard on the part of the Township or County
- A Street lighting design is not provided with this submission. Please confirm if street lighting will be considered and how much lighting is expected such as throughout the entire subdivision or at intersections only and what level of lighting is proposed (ie: Dark Sky Lighting).

Please note that this review of the First Submission documents is preliminary only and is only intended to provide a high level overview of the various reports and drawings provided to date. We are in the process of completing an in-depth review of all of the documents received and will provide more detailed or additional comments once completed.

If preferred the detailed review of the First Submission could be delayed and significant cost and perhaps time savings could be realized for the Second Submission review if the documents could be revised to reflect the above comments at this time.

If you have any questions please contact our office

Thanks.



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COVID 19: We remain open for business

The health and safety of our employees and clients is of paramount importance. Most of our staff are working remotely and continue to serve clients using our well established collaborative technology platforms. For our full COVID 19 response please [click here](#).

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