March 18, 2022

Our File: 2019-4803

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**Attn: Michael Jones**
**Engineer, Water Resources Engineering**

**Stephanie Dore**
**Planner, Development Planning and Permits**

**RE: 1899 Brock Road, City of Pickering (OPA 20-003/P, Zoning A 07/20 & SPA S 06/20)**
**TRCA Submission Comment Response (TRCA Comments July 27th 2021)**

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Pursuant to the comments regarding the above captioned project and application, please find below a response letter prefacing the revised submission package for your review and approval. To expedite the review, we have provided responses to each comment on a point-by-point basis. The respective comments are noted below in *italics*, followed by our responses in **bold** font.

**TRCA General Comments – Comment Memorandum dated July 27th, 2021**

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| 6. | *For Phase 1, an irrigation tank is proposed for irrigation purposes to achieve the 5 mm on site retention for all impervious areas. However, this option should only be used if infiltration is not feasible. This is not the preferred option because there must be a need for the water after each storm event. Please explore opportunities to provide the 5 mm on site retention from other LID options (i.e., permeable pavement, bio retention facilities, etc) to meet this criterion. A combination of the irrigation tank and other LID measure could also be explored. If other LIDs are not feasible, supporting calculations from a landscape architect would be required to demonstrate that there is irrigation demand to use up the design volume for the cistern within 72 hours when the development area is chosen.* |
| a) | *It is noted that the roof and landscaped area is going to the irrigation tank. As TRCA requires the 5 mm on site retention from all impervious areas on site, please provide the impervious area in ha that is not getting captured. Please explore further opportunities to capture the 5 mm volume from all impervious surfaces (ie., walkway, drive isle, and ROW) using other LID's such as permeable pavers while adhering to appropriate infiltration setbacks.* |
| | **As per meetings with the TRCA, and as shown in the revised MFSR, a series of additional retention methods have been provided. This includes the use of planters and permeable pavers along all ground level areas, to facilitate further infiltration. Furthermore, with respect to the private drive isles and lanes, a series of intercepting "permeable paver strips" have been proposed and sized to provide 5mm of retention to these areas. For further details please see Section 4.3.4 of the MFSR. The areas and land uses considered in the retention analysis has also been identified in Figure 4.3 of the MFSR.** |
| b) | *Currently, the ROW impervious surfaces are not captured as part of the 5 mm on site retention volume. In addition to the tree pits explored in the previous submission, please explore alternative options such as surface LID's (i.e., bioretention) with infiltration or* |

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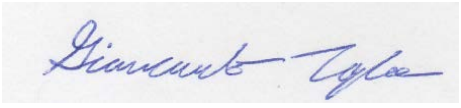
| | *evapotranspiration. Please also note that the TRCA SWM (2012) Criteria recommends the high ground water table is a minimum of 0.6 m from the invert of any LID. In addition, please note that pre-treatment should be provided for any road areas.* |
| | **As per the response to Comment 6 b), a series of permeable paver strips have been proposed in the Row areas. These strips will have a 0.3m strip below surface of gravel to promote infiltration. As per the latest Hydrogeological Investigation the depth of 0.3m below surface is expected to be sufficiently far away from the groundwater table, which was estimated to be at most 2.20m below ground surface, based on seasonal ground water levels.** |
| c). | *Supporting calculations from the landscape architect have been provided in the Appendix. However, only 288 m2 of landscaped area is being utilized for the 60 m3 volume required to be used within 72 hours for Phase 1. Based on what has been provided, only 307 L/month is required for irrigation which means the 60 m3 volume will not be able to be used within 72 hours. As the water must be used within 72 hours, other options such as gray water re-use must be explored. Please provide clarification and demonstrate the 60 m3 retention volume can be re-used within 72 hours.* |
| | **Updates to the site's retention identifies that the new deficit is 32m3. As per the revised site landscaping irrigation calculations it is proposed to consume as much of this volume as possible as a best effort. The current expected consumption rate is 4.8m$^3$/ 72 hours. As discussed in the meeting with Michael Jones on Thursday March 17$^{th}$, 2022, it is the intention of the applicant to provide a best-efforts approach, noting that the existing site conditions do not provide any retention mitigations. Based on the proposed approach it is expected that 3.0mm of retention can be obtained, which is a significant improvement to erosion mitigation measures over existing conditions. This is further discussed in Section 4.3.4 of the MFSR.** |
| 7. | *For Phase 1, Please clarify if only the roofs are being captured for the 5 mm on site retention. All impervious area including the paved areas must be captured to satisfy TRCA's retention criteria. Please revise as necessary and explore the opportunity to provide additional LIDs.* |
| | **As noted in response to comment 6. c) some roof areas without green roof will not be retained. Approximately 0.63ha of unmitigated roof water will be directed to a clean roof water cistern in the underground parking levels. Water within this cistern/re-use tank will be consumed to the extent possible via irrigation uses, as a best effort. Based on the current irrigation consumption volumes, an equivalent 0.76mm retention over the roof area can be obtained in this way. It is again emphasized that on a site wide picture, all other areas obtain 5mm of retention, and provide a significant improvement over the existing site's erosion measures (of which there are none currently in place).** |

We trust that you will find the above and enclosed information assists in your review of the application. Your earliest review is much appreciated. Should you have any questions please do not hesitate to contact the undersigned. Thank you.

SCHAEFFER & ASSOCIATES LTD.



**Giancarlo Volpe, M.Eng.,**
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