

December 5, 2019
WE 13016

Ms. Carmen Jandu
Orangeville Highlands Ltd.
2458 Dundas St. W.
Mississauga, Ontario
L5K 1R8

Dear Ms. Jandu:

**RE: Orangeville Highlands Phase 2 – Middle Monora Creek
Response to CVC Comments**

Water's Edge was authorized by Orangeville Highlands Ltd. to complete a floodplain assessment and erosion hazard assessment of Middle Monora Creek in the Town of Orangeville, Ontario in support of the noted development. The CVC has reviewed this assessment along with other portions of the submission and has provided comments, dated June 21, 2019, to address some of the remaining issues. This memo outlines our response to the following comment from the CVC:

Engineering:

CVC Comment 8. The Water's Edge report recommends the replacement of an undersized culvert which is inundated for the Regional flood. This is to be considered at detailed design.

Water's Edge Response:

The comment to replace the culvert was provided as a recommendation based on the need for ongoing maintenance of the pedestrian crossing and by the fact that this crossing creates a backwater zone and impedes fluvial processes. However, the current structure has been in use since the construction of the Mall and surrounding property, which occurred in 1981, and the structure has not been noticeably affected by any subsequent flooding since that time.

Further background and details regarding the crossing are that the culvert is located between River Station 1.12 and 1.13 in the HEC-RAS model and is overtopped from the 10-year up to the Regional event. The culvert is a pipe arch CSP covered by a large earthen embankment that is used for pedestrian access across the creek. The pedestrian walkway receives grass cutting maintenance during the summer season. The existing conditions floodline for the culvert and embankment show a large backwater is created at this point, however it is noted that there is no increase in flood elevations upstream of the crossing in the post-development model (see **Photographs 1 and 2** for site details).

Once again it is noted that there is no impact on the proposed development by this culvert nor does the proposed development impact the existing culvert or flooding. The hydraulic conditions at the culvert do not change from those of the existing conditions. It is therefore suggested that neither the replacement nor the modification of the crossing is currently within the scope of the site development since there is no impact to the proposed development area.



Photo 1: Upstream Side of Crossing



Photo 2: Pedestrian Path Over Crossing

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ed Gazendam".

Ed Gazendam, Ph.D., P.Eng.,
President, Sr. Geomorphologist
Water's Edge Environmental Solutions Team Ltd.

A handwritten signature in black ink, appearing to read "Nik Gazendam".

Nik Gazendam, C.Tech., Can-CISEC
Fluvial Geomorphic Technician