



MEMO

DATE April 10, 2024 **PROJECT NO.** 2598-6970
RE Davin Metheral

TO Nottawasaga Valley Conservation Authority
FROM Jonathon Kerschbaumer
CC Josée Courtemanche

C.F. Crozier & Associates Inc. (Crozier) was retained by 2374515 Ontario Corporation (Owner) to prepare a Flood Hazard Study to support the development of a proposed 4-storey residential apartment building development located at 180 Ontario Road (Site), in the Town of Collingwood.

The site is approximately 0.52 ha and currently consists of a Child Care Centre, paved parking area, and open space lawn area.

The site is located entirely within the NVCA regulated area for a tributary of the Pretty River Spill flow conveyance system described as the "Pretty River Spill Zone Number 2" in the Pretty River Flood Hazard Delineation Study (Stantec, 1999). Since the site is located within the Pretty River Spill Flow #2 regulatory floodplain and the NVCA regulated area, a Flood Hazard Assessment is required by the NVCA to support approvals for the development. The proposed Flood Hazard Assessment will establish the proposed floodproof elevation for the site based on the Regulatory Floodplain limit. The hydraulic analysis will be verified using the U.S. Army Corps' HEC-RAS program. Results of the Flood Hazard Study are presented in the Functional Servicing and Stormwater Management Report (Crozier, 2024) prepared for the site.

The HEC-RAS model has been packaged to include the existing conditions, proposed conditions, and sensitivity assessment models for your review. The scenario run files for each model are summarized in **Table 1** below.

Table 1: HEC-RAS Model Files

Project Name: Pretty Spill No. 2 MAINT MOD#2	Existing Conditions Model	Proposed Conditions Model	Sensitivity Assessment
Plan	Plan 08	Proposed 180 Conditions	Sensitivity
Steady Flow File	Reach 1 – Flows for Overtopping	Reach 1 – Flows for Overtopping	Reach 1 – Flows for Overtopping
Geometry Data	Reach 2 - Western Spill Zone MOD#2 CCTA	Reach 2 - Western Spill Zone 180 Ontario	Reach 2 - Western Spill Zone_180_noCulve

Conclusions/Recommendations

The floodplain analysis which includes the addition of the Minnesota drain culvert upgrades and floodproofing determined that the floodplain elevation is reduced from 182.09 MASL to 182.05 MASL. A floodproof elevation of 182.40 MASL will be retained within the Site and an FFE set at 182.75m MASL. A separate sensitivity assessment has shown that the flood elevation increases to 182.10m MASL when the Minnesota culvert upgrades are not considered. The proposed floodproof elevation is suitable under the conditions of the sensitivity assessment.

Sincerely,

C.F. CROZIER & ASSOCIATES INC.



Jonathon Kerschbaumer, P.Eng.
Project Engineer

JK

Enclosure

Hec-Ras Model: PrettyRiverSpill2_180Ont.prj
Figure 3: Preliminary Grading Plan

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