

100 YEAR FLOODPLAIN ANALYSIS

**4336 Willick Road
City of Niagara Falls
October 19, 2025**

INTRODUCTION

Upper Canada Planning & Engineering Ltd. (UCC) has been retained to provide an analysis of the 100 Year Floodplain within Hunters Drain at 4336 Willick Road in the City of Niagara Falls, in support of the current application for Zoning Bylaw Amendment and Draft Plan of Vacant Land Condominium on the property. The subject property is located on the south side of Willick Road, west of Sodom Road, and east of Emerald Avenue.

A Floodplain Mapping Study was prepared by the NPCA for Hunters Drain in 2008 which delineated the existing stormwater drainage areas, peak 100 year stormwater flows, the regulated 100 year floodplain extents within the watercourse up to the outlet into the Welland River, and included a detailed HEC-RAS Hydraulic Model with elevation data provided from the NPCA's Digital Terrain Model (DTM).

UCC recently prepared a detailed topographical survey of the subject property with GPS survey equipment and note that there is a discrepancy between the elevations in UCC's detailed topographical survey and the NPCA's DTM resulting from the elevation datums used in the DTM and UCC's GPS survey equipment.

In UCC's assessment of the subject property, the overall elevation difference amounts to the DTM being 0.40m higher than UCC's topographical survey. Therefore, for the purposes of this assessment the 100 floodplain elevations reported from the HEC-RAS modelling will be adjusted by -0.40m when determining the floodplain extents within the subject property.

As shown in Figure 1, it is proposed to develop the subject property as a residential condominium containing future townhouse dwellings on either side of Hunters Drain. To determine the impact of the proposed development limits on the existing 100 year floodplain, a levee was added to the HEC-RAS modelling along the proposed development limits on Cross Sections 1401.720, 1409.005, 1417.234, and 1427.977.

The existing and modified floodplain elevations within the subject property are summarized below in Table 1.

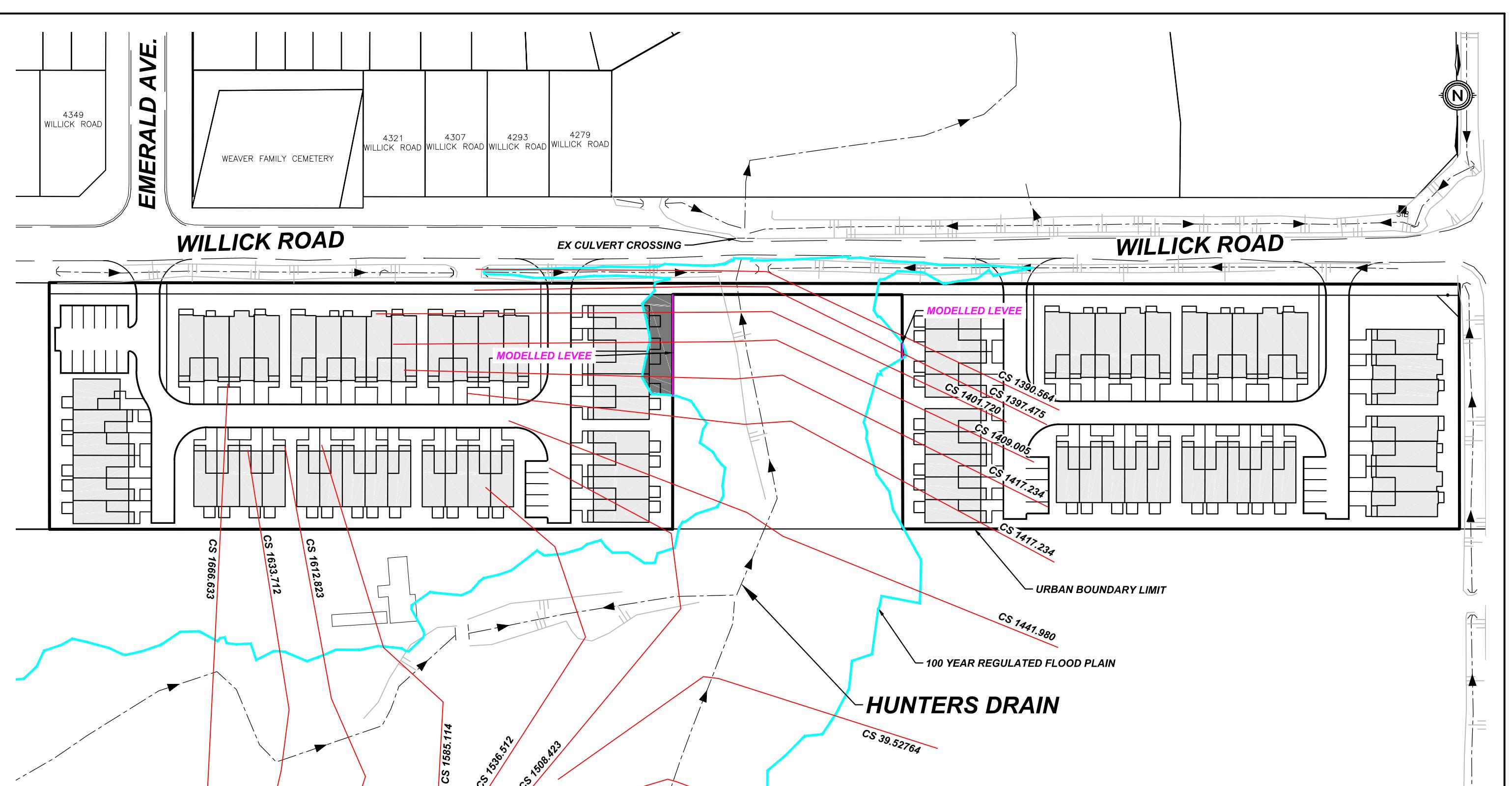


Table 1. Existing vs Modified 100 Year Floodplain Elevations

Cross-section ID	Flood Elevation (m)		Change (m)
	Existing Model	Modified Model	
1397.475	175.50	175.50	0.00
1401.720	175.50	175.50	0.00
1409.005	175.51	175.50	0.00
1417.234	175.51	175.51	0.00
1427.977	175.51	175.51	0.00
1441.980	175.52	175.52	0.00
1476.408	175.53	175.53	0.00
1508.423	175.54	175.54	0.00
1536.512	175.57	175.57	0.00
1585.114	175.67	175.67	0.00
1612.823	175.69	175.69	0.00
1633.712	175.72	175.72	0.00
1666.633	175.73	175.73	0.00

As shown in Table 1, the future 100 year floodplain elevations across the subject property show no change as a result of the proposed development limits. Therefore, there is expected to be no negative impacts to adjacent or downstream lands as a result of the proposed development.

Table 2 below summarizes the floodplain elevations to be referenced against the NPCA's DTM Datum and the datum utilized in UCC's GPS Equipment.

Table 5. NPCA DTM Datum to UCC GPS Datum Comparison

Cross-section ID	NPCA DTM Datum	UCC GPS Datum
1397.475	175.50	175.90
1401.720	175.50	175.90
1409.005	175.51	175.91
1417.234	175.51	175.91
1427.977	175.51	175.91
1441.980	175.52	175.92
1476.408	175.53	175.93
1508.423	175.54	175.94
1536.512	175.57	175.97
1585.114	175.67	176.07
1612.823	175.69	176.09
1633.712	175.72	176.12
1666.633	175.73	176.13

We trust the above is satisfactory for approval. If you have any questions or require additional information, please do not hesitate to contact our office.

Respectfully Submitted,


B. Kapteyn

October 19, 2025

Brendan Kapteyn, P.Eng.



Encl.