

Prepared By: Jeff Homer, P.Eng.

Date: 8/26/2025

Client: 1000989284 Ontario Inc. c/o R.W. Tomlinson Limited

Re: Memorandum: Elmwood Subdivision Floodplain Elevation and Setbacks

Introduction

As part of the proposed Elmwood subdivision in the Town of Gananoque, setbacks from water features have been reviewed to ensure compliance with applicable conservation authority and provincial requirements for natural hazards. The subject site is influenced by both the St. Lawrence River floodplain and an onsite west-east watercourse.

St. Lawrence River Setback

The St. Lawrence River flood hazard limits were recently updated through *Cataraqui Conservation Flood Hazard Mapping* (Zuzek Inc., February 29, 2024). Table 4.25 of the study identifies a 100-year floodplain elevation of 76.10 m at the subject site. A horizontal setback for the flooding hazard limit is provided in Table 4.25 to account for the horizontal distance that may be impacted by wave uprush and overtopping (wave effects). In accordance with Table 4.25 and Cataraqui Conservation requirements, a **10 m horizontal setback** from buildings and structures to the floodplain elevation is to be applied to lots along the St. Lawrence River. Refer to the attached Table 4.25 for reference.

Watercourse Setback

The watercourse has been assessed through hydrologic and hydraulic analysis by Forefront Engineering Inc. and detailed in the Stormwater Management Report for the proposed subdivision. The existing watercourse includes a low-lying valley on the north side and steep embankments on the south side. Improvements to the channel banks are proposed within the subdivision to ensure a stable slope is maintained.

Given the proposed channel improvements to ensure a stable slope and the well-defined nature of the watercourse, the applicable minimum **horizontal setback is 6 m** from buildings and structures to the watercourse 100-year high-water level. This 6 m setback is consistent with the *MNR Technical Guide for River & Stream Systems Erosion Hazard Limit* and Cataraqui Conservation guidelines, which require an Erosion Access Allowance for confined watercourses. The 6 m allowance provides for emergency access, regular maintenance, and unforeseen conditions.

Conclusion

The subdivision design proposes the following setbacks:

- 10 m setback from the St. Lawrence River 100-year floodplain (Elev. 76.10 m)
- 6 m setback from the 100-year high-water level of the watercourse

These setbacks will guide the subdivision layout to ensure conformity with regulatory requirements while supporting the protection of water resources and safeguarding against natural hazards.

Sincerely,

FOREFRONT Engineering Inc.



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Attachment: Table 4.25, *Cataraqui Conservation Flood Hazard Mapping*, Zuzek Inc., February 29, 2024



Table 4.25 Lake Ontario – St. Lawrence River Shoreline 100 Year Flood Level and Wave Uprush

ID	Sub-reach Description	Hist. 100-year Flood Level (IGLD'85)	Max Wave Exposure		Vertical Uprush (m)		Horizontal Uprush (m)		Setback for Mapping (m)
			Hs (m)	Tp (m)	Min. Slope	Max. Slope	Min. Slope	Max. Slope	
1	Point Frederick to Cedar Island Tip	+76.1	1.5	5.5	0.5	3.5	13.8	3.5	15
2	Cedar Island Tip to Milton Island	+76.1	1.2	5.0	1.3	2.8	11.7	2.8	15
3	Milton Island to Pine Point Ave.	+76.1	1.0	4.0	1.6	2.3	8.3	2.3	10
4	Wetland/Marina	+76.1	0.8	4.0	0.3	0.3	5.0	5.0	5
5	Treasure Island	+76.1	1.1	4.0	3.2	2.5	7.1	2.5	10
6	Treasure Island to Kinogama Ave.	+76.1	0.9	3.5	0.3	2.6	6.8	6.1	10
7	Kinogama Ave. to Howe-Island Ferry Rd.	+76.1	0.9	4.0	0.2	2.1	7.1	2.1	10
8	Howe Island Ferry Rd. to Howe Island Ferry East	+76.1	0.8	3.0	0.2	1.9	5.0	1.9	5
9	SW Exposure West Gananoque Islands (Aubrey, Mermade, Windward, Anchorage, Blackduck, Hemlock, Bluff, etc.)	+76.1	1.3	4.5	0.6	3.0	10.2	3.0	10
10	Sheltered West Gananoque Islands (Pinnacle, Beauriavge, Lindsay, Rockland, McDonald, Burnt, Pitchpine, etc.)	+76.1	0.9	3.5	0.2	2.1	9.4	2.1	10
11	How Island Ferry East to Gananoque Marina	+76.1	0.7	3.5	0.2	1.6	5.5	1.6	5
12	Gananoque Waterfront (Marina to William St. S.)	+76.1	0.8	3.0	0.2	2.3	5.0	4.3	5
13	William St. S. to Chisamore Point Rd.	+76.1	1.0	3.5	0.1	2.3	7.0	2.3	10
14	Chisamore Point Rd. to Collier Island	+76.1	1.0	4.0	0.1	2.3	7.2	2.3	10
15	Exposed Gananoque Narrows Islands (Gig, Punts, Barge, Dethdealer, Netley, Camelot, Wyoming, Dumfounded, Ramsden, etc.)	+76.1	1.1	4.0	0.8	2.5	8.3	2.5	10
16	Sheltered Gananoque Narrows Islands (Endymion, Sundown, Rich, Downie, Bouchier, Hamby, Mink, Otty, etc.)	+76.1	0.9	3.5	0.4	2.1	6.6	2.1	10
17	Ivy Lee West Islands (Owen, Spilsbury, Cunliffe, Popham, etc.)	+76.1	1.0	3.5	1.0	2.3	7.9	2.3	10
18	Collier Island to Glen House Restort	+76.1	0.7	3.0	0.3	1.6	5.2	1.6	5
19	Glen House Resort to Cruise Dock on Ivy Lea Rd.	+76.1	0.8	3.5	0.3	1.9	6.2	2.1	10