

July 14, 2025

SHOREPLAN

Jill Stewart, CPA, CA
jstewart@buildinginnovation.com

Dear Ms. Stewart

**RE: Natural Hazard Review
Silver Birch Drive Properties, Tiny, ON
Property Identification Numbers: 58424-0283
58424-0206
58424-0207
58424-0208
58424-0367**

Our file: 25-4014

As requested, we have visited the above noted sites in Tiny Township and offer the following comments on the existing natural hazards and the provincial defaults for determining the natural hazard limits. The site was reviewed by a professional engineer on June 30, 2025, and the photographs presented below were taken during that review. The water level was approximately 177.4 metres cgvd28, as determined from the Canadian Hydrographic Service gauges at Collingwood and Midland.

The natural hazards considered include the dynamic beach hazard, the erosion hazard and the flood hazard as defined in the Natural Hazards Policies (3.1) of the Provincial Policy Statement (PPS). Our review is consistent with the general methods prescribed in the MNR (2001) technical guidelines published in support of the PPS.

Existing Site Conditions

The subject properties are located on the shore of Georgian Bay, south of Methodist Point, as shown in the location plan Figure 1. For descriptive purposes the shoreline will be treated as running from north to south with the water to the east. Figure 2 is a site plan showing the approximate property lines and the last four digits of the PINs listed above. The property lines were estimated from the Simcoe County Interactive Map at opengis.simcoe.ca

The properties collectively have approximately 185m of Georgian Bay shoreline. There is an approximately 30m long granite boulder revetment

fronting an existing cottage on property 0283. The revetment is constructed out of granite boulders with most of the boulders ranging in size from approximately 400mm to 1,000mm diameter. The revetment crest elevation was visually estimated to be in the order of 178.5m. It appears to be in good condition and functioning properly at current water levels.

The remaining properties are undeveloped. The controlling substrate is a cohesive till with a solid boulder pavement. Boulders along the water's edge are in the order of 400 to 800mm diameter. The boulder sizes reduce slightly to roughly 200 to 600mm diameter further inland and extend beyond the treeline. There are large boulders up to approximately 1.5m diameter scattered throughout the area.

Photo 1 shows the existing revetment at property 0283. Photo 2 and Photo 3, respectively, are northerly and southerly looking photos of the shoreline along the undeveloped properties. These were taken near the line between properties 0207 and 0208. Photo 4 shows large boulders along the treeline on property 0207.

Dynamic Beach Hazard

There is no dynamic beach at this site, and hence no dynamic beach hazard.

Erosion Hazard

The PPS and MNR (2001) define the erosion hazard limit as the sum of an erosion allowance and a stable slope allowance where the erosion allowance is 100 times the average annual shoreline recession rate for unprotected shores and the stable slope allowance is the product of the bluff height and a stable slope. The provincial default stable slope is 3:1 (h:v).

There is no long-term measurable erosion along this portion of Tiny Township. The boulder pavement prevents downcutting of the cohesive profile, and nearshore downcutting is a key requirement for long-term shoreline recession. A review of available erosion rate data from the Coastal Zone Atlas shows stability along this shore. The closest erosion monitoring stations are H-9, H-10, and H-11. Station H-10 is located on the sandy beach in Thunder Bay and is not relevant to this site. Station H-9, which is located between Sawlog Point and Stoney Point, and station H-11, which is located east of Cedar Point are on similar types of shoreline. Both of those stations show either no change or minor accretion.

These data, combined with our site observations, show that the shoreline in this area is stable and not subject to long term erosion. This in turn means that the erosion hazard limit as defined by Provincial Policy Statement (PPS) and MNR (2001) is based solely on the stable slope allowance.

There is no discernable bank or bluff on the 4 undeveloped properties (PINs 0206, 0207, 0208, and 0367) where the land slopes down to the water's

edge. With no bank there is no requirement for a stable slope allowance and therefore no erosion hazard.

The bank along the front of property 0283 is in the order of 2.5m high where it has been filled to level the lawn out to the revetment. Using the provincial default stable slope of 3:1, that gives a stable slope allowance of 7.5m, measured back from the toe of the bank. The existing cottage is approximately 12m back from the back of the revetment and well outside the stable slope allowance, and therefore outside the erosion hazard.

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Flooding Hazard

The Provincial Policy Statement defines the limit of the flooding hazard as the 100-year instantaneous water level plus an allowance for wave uprush, overtopping, and other water related hazards. MNR determined the 100-year instantaneous water level to be 178.0 metres along this section of shoreline. The MNR default allowance for wave uprush, overtopping and other water related hazards is 15m and is used in the absence of a site-specific study.

Figure 2 shows the approximate location of the 178m contour on the four northern properties as determined from the Simcoe County Interactive Map. The contour line is not shown for property 0283 because the online mapping does not accurately reflect the filling that has taken place.

A 15m offset from that line is also shown. The 15m offset line may be viewed as the flooding hazard limit for the four properties.

The 178m contour on property 0283 is likely to fall on the face of the revetment, near its crest. The 15m default setback would then extend a couple of metres into the footprint of the existing cottage. The PPS natural hazard policies are for new development, not existing development, so this need not be viewed as a concern for the existing cottage.

Closing Comments

We trust that these comments provide the information you require. Do not hesitate to call should you have any questions regarding this letter report.

Yours truly,

Shoreplan Engineering Limited



Bruce Pinchin, P. Eng.



Photo 1 Existing Revetment at Property 0283, June 2025



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Photo 2 Northerly View of Shoreline, June 2025



Photo 3 Southerly View of Shoreline, June 2025



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Photo 4 Large Boulders Along the Treeline, June 2025



Figure 1 Location Plan





GEORGIAN BAY

APPROXIMATE
178.0m CONTOUR LINE
15.0m OFFSET
FROM APPROXIMATE
178.0m ELEVATION LINE

APPROXIMATE PROPERTY LINES

0283

0206

0207

0208

0367

SILVER BIRCH DR.



Project #25-4014
Scale 1:1000
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Figure 2
Site Plan
558 Silver Birch Tiny (Stewart)

Drawing Location: S:\Shoreplan Project Files\Files 4000-4099\25-4014 558 Silver Birch Tiny (Stewart)\drawings\25-4014_r0a.dwg