25 Maadookii Subdivision,
Neyaashiinigmiing, ON
N0H 2T0

saugeenojibwaynation.ca

Environment Office
Saugeen Ojibway Nation.

To Corey and Jackie Keller
VIA EMAIL

January 26, 2022

Re. Official Plan and Zoning By-Law Amendment act 76 & 78 Stokes River Road

Firstly, thank you for your time and communication as part of consultation with the Saugeen Ojibway Nation (SON) regarding your proposed work at 76 and 78 Stokes River Road. As we discussed, SON is concerned about shoreline hardening (e.g. armour stone walls) on the peninsula and elsewhere in SON Territory as it can seriously impact fish and fish habitat. Even small projects can have a big impact, especially from a cumulative effects perspective, and we are happy to have had the opportunity to work with you to ensure this project is done in a good way.

In appendix A please find background understanding and formal recommendations from SON regarding your proposal. These recommendations are also being shared with Bruce County.

Miigwetch and kind regards,

Emily Martin
Manager of Resources and Infrastructure
Environment Office of the Saugeen Ojibway Nation

cc' Daniel Kingsbury, Bruce County

25 Maadookii Subdivision,
Neyaashiinigmiing, ON
N0H 2T0

saugeenojibwaynation.ca

Environment Office
Saugeen Ojibway Nation.

Appendix A - Technical Memo

Prepared for: Emily Martin - Saugeen Ojibway Nation Environment Office
Prepared by: Kathleen Ryan - Environmental and Regulatory Support
Dated: January 25 2022
RE: Official Plan and Zoning By-Law Amendment act 76 & 78 Stokes Bay Road

1 Background

The Land-Holders (Jackie and Corey Keller) applied to Bruce County for an Official Plan Amendment C-2021-023 and Zoning By-law Amendment Z-2021-078 to support merging two lots at 76 & 78 Stokes River Road to construct a dwelling and associated servicing. SON identified concerns with the proposed amendments as identified in a December 15, 2021 letter from SON to Bruce County. To address the concerns identified by SON, we have completed a review of available documents (Scoped Environmental Impact Assessment: SAAR Environmental Ltd. (Aug 2021), Coastal Engineering Analysis: Darryl M Robins Consulting Inc. (Aug 2021), Grey-Sauble Conservation Authority Comments (Dec 2021)) , a site visit, and have provided below a brief memo to summarize our findings and recommendations.

Stokes Bay is among the most important lake whitefish habitat on the Saugeen (Bruce) Peninsula, has been a significant location for the SON fishery since time immemorial, and in 2011, Ryan and Crawford (2014) recorded the highest abundance of larval lake whitefish ever recorded in the Great Lakes at Stokes Bay. The health of lake whitefish populations in Lake Huron has been declining over the past 10 years, attributed to limited recruitment of new fish into the fishery, which means that young fish are not surviving long enough to reach “recruitment” age. Considering this, SON must be vigilant about protecting the critical habitats used by lake whitefish in early life stages.

SON is concerned about shoreline alterations, especially in locations such as Stokes Bay. We understand that installing a boulder revetment along the edge of a property may seem insignificant, but there are multiple potential impacts. One, is the precedent it will set in the area; once adjacent landholders see this type of structure, they will become interested in implementing this type of structure to protect their property infrastructure or value. If everyone in Stokes Bay implemented this or a similar structure, it would significantly alter the structure and function of the bay (including things that are more abstract, like water circulation patterns that are immensely important to larval whitefish retention in this embayment during their larval period).The second, is that shallow, vegetated locations, especially close to the river mouth (such as the area adjacent/west of the property) are highly productive and contain more food resources for larval fishes (not only lake whitefish) than other locations in an embayment, and the

combination of depth, structure (vegetation), and water movement patterns retain larvae in these locations, allowing them to feed and grow during a period where they have limited motility.

These habitats are being inundated by shoreline development impacts, and a surge in projects similar to the one being proposed here. SON's goal is to ensure that SON is not contributing to or complicit in the systematic changes occurring in these important locations and are vigilant about minimizing harm to the greatest extent possible. We also must consider these types of projects under both an individual (project) and cumulative lens (in consideration of ecosystem conditions, and other existing or planned developments).

2 Site Characterization

2A Local Conditions - Stokes Bay

The shoreline in this region is a mix of unaltered shoreline sections and areas with significant cottage development and associated docks, gryones, some revetments and armour stone walls.

The embayment shoreline at Stokes Bay is largely sheltered from large waves due to sheltering effects of the embayment morphology, including presence of shoals, large boulders, sub-bays, and islands resulting in smaller breaking waves at the shoreline. Wave uprush in this area tends to be low to moderate. However, high water levels during 2019-2020 resulted in more interaction between water and shoreline infrastructure, including erosion and property damage. High water levels conversely increased the total area of habitat available to aquatic species during this period.

Stokes Bay is a diverse nearshore habitat, including sand beaches, coastal wetland features, multiple substrate types, and vegetation communities. Given the presence of coastal wetlands along this shoreline reach, wetland creation is an appropriate approach to more broadscale protection from the impacts of water (or high water), particularly where losses of wetland vegetation has occurred over time. This is also a location where existing hardened structures can be enhanced with vegetation. Consideration can also be given to the combined use of bank vegetation and large woody debris with other protection measures.

2B Site Specific Conditions - Keller Property

The shoreline area of interest is directly adjacent (W) of the (Keller) property and can be described as a good condition (features in tact) transitional meadow marsh type habitat, characterized by shallow, intermittently wet (annual and seasonal variation) conditions, and transitions from meadow dominant to emergent dominant vegetation community with increasing distance from land.

As described earlier, this type of location can be highly productive (especially with the influence of local (Stokes) river output) and contain more food resources for larval and juvenile fishes (not only lake

whitefish) due to the combination of (shallow) depth, structure (vegetation), and water movement patterns to retain larvae, allowing them to feed and grow during a period where they have limited motility.

Conditions in the adjacent embayment have been highly variable over the past 10 years, specifically annual / seasonal variations in water depth / extent. Water levels / extent was notably high during the 2019-2020 Lake Huron high water levels, and water extended to the edge of the property (SAAR report 2021, personal communication with Kellers).

Due to the proposed location of the dwelling relative to the edge of the wet meadow marsh and the risk(s) posed by high water conditions, the revetment is proposed to protect the property edge from erosion, and the dwelling from risks associated with fluctuations in water levels.

2C Site Visit Observations
Location: 76 Stokes River Road, Stokes Bay, ON.
Participants: Kathleen Ryan (SON EO), Emily Marin (SON EO), Jackie and Corey Keller (Land-Holders), Darryl M Robinson (Coastal Engineer), Daniel Kingsbury (Bruce County).
Date: January 24 2022; 1015 hrs - 1045 hrs
Weather: -10 (with -10 wind chill NW dir), snow
Site Conditions: Under full snow cover conditions at Stokes Bay. Extent of property / property boundary, location of boulder revetment, and boundary / extent of meadow marsh / emergent vegetation in adjacent bay were visible at time of site visit.

3 Recommendations

Based on review of the available information, site visit, and discussion with the land-holders and their coastal engineer, determination has been made that the future dwelling and revetment as proposed will not cause harm to the existing ecological structures or functions of the adjacent habitat *if it is constructed in accordance with the recommendations* provided below, in addition to those identified in the Coastal Engineering Analysis and SAAR Report.

It should be emphasized that if any additional alterations not described in the above reports are required in the adjacent t meadow marsh habitat (relative to the lots, dwelling, and servicing), SON must be contacted and additional assessments should be completed.

- Ensure the revetment does not extend beyond the bank toe.
- Ensure construction of the revetment and dwelling occurs from the land-side of the property or under dry conditions and outside of any relevant timing windows (in-water work timing window Mar 15 - Jul 15 and terrestrial windows identified in SAAR report).

- Enhance the boulder revetment to include vegetation using one of or combination of pole planting, brush-layering and live staking techniques (technique dependant on species and soil conditions).
- Add a vegetated buffer along the lake-edge of the revetment (less than 1 m)
    - The vegetated revetment and buffer should be completed using only native species identified in the adjacent embayment (from SAAR report).
    - Plant species could include a diversity of types including grasses, sedges, shrubs, and trees.
    - The addition of plantings as part of the revetment and along the outer edge of the revetment will create additional bank stability and erosion protection, as well as enhance the local habitat features.

The revetment will be completed prior to the dwelling construction. Once the dwelling is complete, the land-holders could further enhance the ecological value of their property by creating a similar vegetation buffer on the inside of the revetment.