



RIVERSTONE

ENVIRONMENTAL SOLUTIONS INC.

August 3, 2023
RS#222-245

Mr. Henry Wiens

Via email: wienshenry111@gmail.com

SUBJECT: Lake Capacity and Fish Habitat Mitigation - Wiens Property, Horn Lake Municipality of Magnetawan

Dear Henry:

As you know, RiverStone Environmental Solutions Inc. (hereafter RiverStone), completed a review of lake capacity for your consent application on Horn Lake. The review was based on knowledge of the science behind lake capacity and the report submitted by Hutchinson Environmental Sciences in support of a neighbouring property on the lake where they addressed the capacity issue for the lake as a whole. The results of the Hutchinson lake capacity assessment for the neighbouring property showed that Horn Lake is not at capacity, and the addition of one (1) new lot on your property will not have any impact on water quality. As a result, our letter was accepted by Township council.

In consideration of our letter for your property and the Hutchinson report on the neighbour's property, council noted that there were several recommendations put forward by Hutchinson to mitigate any potential impacts to water quality and fish habitat. There were questions from council as to whether these same recommendations should be applied to the Wiens severance. In particular, the following recommendations were considered to be potentially applicable:

From Hutchinson Report regarding Lake Capacity (pg 19)

1. Septic systems shall be located at least 30 metres from a watercourse or waterbody.
2. As a condition of development approval, a natural shoreline vegetation buffer shall be preserved within at least 20 metres of all watercourses and waterbodies wherever possible except for the removal of hazardous trees and a narrow area to allow a pathway to the shoreline.
3. Where development would result in a significant increase in storm water run-off, the Municipality shall require the proponent to complete storm water management works that will ensure that off- site surface water quality and quantity is not adversely impacted by the development. Direct outfalls to surface waters should be avoided and wherever possible developments shall utilize infiltration as a method for storm water management.
 - We recommend discharging of roof leaders, use of soak away pits and other measures to promote infiltration. Other specific design options for consideration include: grassed and vegetated swales. filter strips, roof leaders and French drains which have all proven to be effective at mitigating impacts associated with stormwater.

4. We recommend implementation of an Erosion and Sediment Control plan during construction, which should (CISEC Canada 2012):
 - Utilize a multi-barrier approach;
 - Retain existing vegetation;
 - Minimize land disturbance area;
 - Slow down and retain runoff to promote settling;
 - Divert runoff from problem areas;
 - Minimize slope length and gradient of disturbed areas;
 - Maintain overland sheet flows and avoid concentrated flows; and
 - Store/stockpile soil away from watercourses, drainage features. and tops of steep slopes.
5. Utilize Waterloo Biofilter Systems with EC-P units to minimize sewage related-TP.

Additional information regarding waterfront development Best Management Practices can be found in "Protect Your Waterfront Investment" (Muskoka Watershed Council; Appendix B).

From Hutchinson Report regarding Fish Habitat (pg 30)

- Avoid construction of shoreline structures on or within 10m of the groundwater seepage area identified on Figure 6. A 10 m buffer is sufficient to protect the functionality of the seepage area from adjacent development of docks or boardwalks since 10 m is a suitable base buffer width for water quality, screening of human disturbance and core habitat protection (Beacon Environmental Ltd. 2012).
- Implement a timing window of March 15th to July 15th and October 15th to May 31st to protect spring and fall spawning species. that is dock construction should be completed outside of that timing window (July 16th to October 14th).
- Utilize a dock design that has a small footprint on the lakebed such as a floating, cantilever or a pole supported dock. If a larger footprint is used (i.e. cribs) then the cribs should be constructed in an open- faced manner and filled with large rocks to provide accessible crevices for fish and other small organisms. Cribs should be spaced (2 m) and located at least 2 m from the high-water mark to allow nearshore water to circulate.
- Develop and implement an Erosion and Sediment Control Plan for the site that minimizes risk of sedimentation of the waterbody during all phases of the project. For dock construction this includes:
 - Installation of effective erosion and sediment control measures before starting work to prevent sediment from entering the water body.
- Clearing of riparian vegetation should be kept to a minimum.
- Minimize the removal of natural woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of the waterbody below the ordinary high water mark. If material is removed from the waterbody, set it aside and return it to the original location once construction activities are completed.

- Immediately stabilize shoreline or banks disturbed by any activity associated with the project to prevent erosion and/or sedimentation. preferably through re-vegetation with native species suitable for the site.
- Restore bed and banks of the waterbody to their original contour and gradient; if the original gradient cannot be restored due to instability. a stable gradient that does not obstruct fish passage should be restored.
- If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, then ensure that appropriately-sized, clean rock is used: and that rock is installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment.
- Remove all construction materials from site upon project completion.

The application of these lake capacity and fish habitat mitigation measures to your severed lot is reasonable; however, it should be noted that some of these recommendations are provided as there is a difference in scale of the proposed development on the neighbouring parcel, four (4) lots, compared to the single severance of your property. For example, a sediment and erosion control plan for a single lot can be very simple as the slopes are moderate and construction straight forward, whereas, the terrain across four lots may be more variable and challenging, requiring engineering support. The same can be said for stormwater management.

I trust this information will be suitable for the Township to further review your application for severance and proceed with the approvals. Please do not hesitate to call should there be any questions.

RiverStone Environmental Solutions Inc.

Al Shaw, M.Sc.
Senior Ecologist / Principal