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Peer Review of “Upper’s Quarry, Niagara: Level 1 and Level 2 Natural Environment Technical Report and Environmental Impact Study FINAL REPORT” and related documents

INTRODUCTION

The comments below constitute our peer review findings for the “Upper’s Quarry, Niagara: Level 1 and Level 2 Natural Environment Technical Report and Environmental Impact Study FINAL REPORT”, prepared by Stantec on October 29, 2021. Where appropriate, these findings were supplemented by additional information contained in several related documents (complete list provided at end of letter).

KEY CONCERNS

The following key concerns are based on review of the Upper’s Quarry Level 1 and Level 2 Natural Environment Technical Report (NETR) and Environmental Impact Study:

Site Investigation Methodologies

- Clarification is required for various methodologies employed for site investigations and evaluation of significance.

Evaluation of Significant Woodlands

- Clarification is required regarding the evaluation of significance and proposed removal and habitat replacement of the significant woodland located on the subject property.

Evaluation of Significant Wildlife Habitat

- Clarification is required regarding the assessment of significance for Significant Wildlife Habitat (e.g., given presence of turtle species and habitat for species of conservation concern).

Fish Habitat

- The watercourse that crosses the property, which it is proposed to realign, provides spawning and nursery habitat for Northern Pike (*Esox lucius*). Adult Northern Pike migrate to the stream to spawn in the spring and then migrate back to downstream habitats. It is not known if Northern Pike

migrate upstream past the subject property to spawn farther upstream, but the presence of young-of-the-year individuals in the entire length of the watercourse within the subject property (AECOM, 2010) suggests this may occur.

- The regional significance of Northern Pike spawning in the watercourse that crosses the property has not been assessed but clearly the spawning habitat has significance that extends beyond the immediate study area. The watercourse is accessible to fish from an extensive area of aquatic habitat that is suitable for adult Northern Pike. Investigations to determine the number of Northern Pike that enter this watercourse to spawn and to determine if Northern Pike from the downstream habitats spawn in other locations could provide regional context and allow the scale of potential effects to be assessed.

Specific Comments

In addition to the key concerns described above, the following specific comments are provided. They are grouped according to section headings in the NETR and EIS.

Section 3.2 (FIELD SURVEY METHODS) pg. 3.1

1. It is noted in Table 3.1 that no dedicated Turtle surveys were conducted either on the Subject Lands or within the RAA. Given the proximity of larger wetlands to the north and the ability of turtles to move through the landscape while moving from wetland to wetland or in search of nesting habitat, please explain why no surveys were conducted, especially as it relates to potential Species at Risk and the identification of Significant Wildlife Habitat. It is noted that during the technical meeting held on March 30th, 2022, the applicant's consultant confirmed that turtles were observed along the watercourse on the subject property. These records have not been included in the Natural Environment Technical Report and Environmental Impact Study. Please address.

Section 3.2.3 (Breeding Bird Surveys) pg. 3.5

2. Grassland bird species were surveyed in 2019. However, only eight of the twenty-three point-count stations surveyed for breeding birds in 2017 were surveyed in 2019. Please explain why so few stations were surveyed and how the stations were selected for suitability. It appears that large areas of the subject lands did not receive any coverage.
3. Clarify why the 2nd Grassland Bird Surveys were only 1 hr. 16 minutes long when survey 1 and 3 were both close to 2.5 hours in length. Did it have something to do with the fact that the survey conditions were too windy (per Table 3.4)? It also doesn't look like the survey was repeated to ensure the data collected was within accepted standards. Please explain.

Section 3.2.4 (Snake Coverboard Surveys) pg. 3.5

4. Did Guelph District MNRF conclude that the survey results from the snake coverboard survey would be sufficient to conclusively determine presence/absence? It is our experience that coverboard surveys were not acceptable, but rather considered complimentary.
5. Did the Guelph District MNRF recommend that the coverboards be checked on a daily or near daily basis, at least in May 2017? Checking on a daily or near daily basis can result in cover boards not being used and therefore negatively affect detectability. Please address.

6. According to Table 3.1, 17 surveys were conducted. The March 29 survey date appears to be missing in Table 3.5 below. Please address.

Section 3.2.5.1. (Bat Maternity Roost Suitability Survey) pg. 3.8

7. The report states that “A survey was completed on April 19 2017 to identify potentially suitable roost trees.” However, both Table 3.1 and 3.6 seem to suggest that this survey was conducted on April 4, 2017. Please clarify.

Section 3.2.5.2. (Bat Acoustic Surveys) pg. 3.9

8. Why were there no ARUs deployed by the treed habitats along the existing watercourse, at the very north end of the subject lands?

Section 3.2.5.3. (Bat Exit Surveys) pg. 3.9

9. Please indicate why “*Surveying for the presence of Little Brown Myotis and Northern Myotis (MNR, 2013)*” was the survey protocol used to conduct exit surveys and please provide a copy for review. Also, please include the reference in Section 13.0.
10. Please indicate why the third survey could not be conducted in June when timing is considered most suitable by the Ministry?
11. Please indicate why some of the other buildings were not surveyed?

Section 3.2.6 .2 (Bat Acoustic Surveys) pg. 3.9

12. According to the report, seven ARU’s were deployed in 2019. However, according to Figure 7 (Appendix A), only five ARU locations are shown for 2017. Please clarify/revise.

Section 3.2.6 Terrestrial Insect Surveys pg. 3.10

13. Please indicate why only two visits were conducted. An earlier visit in June would have helped ensure all potentially occurring species were adequately detected, especially those with earlier flight windows.
14. Also, please indicate why the July 5th visit started so early in the morning. Unless it is very hot and humid, most species of butterflies and odonates are not active until mid-morning.

Section 3.2.7 Headwater Drainage Feature Assessment pg. 3.10

15. Please provide a reference for the headwater drainage features (HDF) guidelines that the timing of site visits is stated to be consistent with. If the reference is to the CVC and TRCA guidelines (finalized in 2014), which are referred to in Section 3.3.5, please explain how the timing of the site visits was consistent with the timing recommended by the HDF guidelines.

Section 3.3.3 Significant Wildlife Habitat Assessment pg. 3.15

16. Please indicate what document was used to assess Significant Wildlife Habitat. The text appears contradictory or unclear. If both were used (i.e., MNR, 2000 and MNR 2015), please indicate why and what criteria were used to determine when each was applicable.

Section 4.1 Landscape Context pg. 3.18

17. The description could be broader and include additional information other than a description of the most common tree species. The Great Lakes Conservation Blueprint for 7E-5 provides a good summary.

Section 5.3.2 Bobolink

18. Text on page 5.7 indicates that *“Bobolink were observed at 7 of the 23 point count locations with a combination of grassland and winter wheat (BBS-1, BBS-2, BBS-3, BBS-7, BBS-9, BBS-10, and BBS-13), as shown on Figure 4, Appendix A”*. For transparency, please indicate how many Bobolink were recorded in 2017 and what individual fields they were documented in.

Section 5.5.2 Bat Acoustic Surveys

19. According to the report bat acoustic data was collected at 11 stations on the subject property in 2017. However, 12 stations are shown on Figure 7. Please clarify/revise.

Section 5.8 Headwater Drainage Feature Assessments pg. 5.11

20. This section states that the headwater drainage features are colour-coded to reflect their management status on Figure 8 (Appendix A) but this does not appear to be the case. Colour-coding would be useful.
21. Headwater drainage feature classification, as presented in CVC and TRCA (2014) and Section 3.3.5 of this EIS, is based on up to three site visits with the first typically occurring in late March to early April. A second visit is made during late April to early May if necessary, and a third visit is made during the July-mid-September period if necessary. Please explain how data from a site visit in early April (in two years) and a site visit in late June provides the information required to determine the classifications.
22. Please provide the raw field observations, and their date(s), that were utilized to determine the classifications presented in Table 5.5. For example, the hydrology class is based on flow status (flow, standing water, or dry), the feature’s physical form, and whether or not there is a wetland upstream.
23. It is not unusual for headwater drainage feature classifications to differ among reaches of an HDF. The classifications of upstream reaches can influence the classification of reaches downstream. Please consider whether this is relevant to any of the HDFs in the study area, including feature 11 and features 7, 12, 24 and 25.

Section 5.9 Fish and Aquatic Habitat – Existing Watercourse pg. 5.14

24. This section refers to Figure 11, but it appears that it should refer to Figure 12.
25. The watercourse which crosses the subject property, in which Northern Pike spawning has been observed, young of the year Northern Pike have been captured, and other fish species have been captured, should be indicated to be fish habitat on Figure 12. Section 6.6 states that it is considered fish habitat.

26. The report states “The seasonal nature and lack of sustained flow, absence of adequate refuge pool habitat and inability to support perennial conditions favourable to fish all reduce the habitat quality of the tributary to a low rating.” It should be recognized that Northern Pike often spawn on vegetation that is flooded in the spring in areas that are dry later in the year. It should further be recognized that, although those spawning areas may not be high quality fish habitat in the traditional sense, but they are critical for the Northern Pike populations that spawn there. The AECOM (2010) memorandum describing the 2010 field investigations states “Ultimately, the sensitivity of the fish and fish habitat present can be considered Moderately Sensitive due to the presence of spawning habitat for Northern Pike.” Please address the significance of the Northern Pike spawning habitat in this watercourse to downstream fish communities and Northern Pike populations.

Section 6.2.1 Assessment Based on Provincial Criteria pg. 6.4

27. Clarify the interpretation of the linkage assessment for the woodland located on the subject lands. The NHRM criteria indicates that if a woodland is identified as part of a defined NHS, it would meet the linkage criteria.

Section 6.2.2 Assessment Based on Regional Criteria pg. 6.7

28. According to the analysis presented in Table 6.3, “the woodland on the Subject Property along Thorold Townline Road would be considered a Significant Woodland from a policy perspective and would become a regional Environmental Conservation Area, per Policy 7.B.1.4 of the Region of Niagara Official Plan.” However, given this status, additional clarification is required to rationalize the recommendation for removal and habitat replacement of this feature.
29. Please provide an explanation as to why the wetland feature that crosses the woodland on the site does not meet the definition of watercourse per the Conservation Authorities Act.

Section 6.6 Fish Habitat pg. 5.14

30. This section describes conditions but does not provide an assessment of the significance of the existing watercourse from a fish habitat perspective. Based on the reported field observations, this watercourse provides spawning and nursery habitat for Northern Pike. Adult Northern Pike migrate into this watercourse to spawn in the spring and presumably migrate back downstream after they have spawned. No investigations were conducted to determine the number of adults moving into the watercourse to spawn or the number of young-of-the-year that move downstream after they hatch. The fact that adults migrate into the watercourse from downstream to spawn indicates that the significance of the watercourse extends beyond the study area. Its significance at a regional scale will depend, in part, on the proportion of regional pike spawning habitat that this watercourse provides.

Section 6.7 Significant Wildlife Habitat pg. 6.10

31. According to text, Table B-2, Appendix B provides a detailed assessment using the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E.
- a. Re: the discussion about the Turtle Nesting Areas SWH type, it states “*Suitable habitat for turtle nesting is present on the road shoulders and in agricultural fields, however anthropogenic features do not qualify as significant wildlife habitat.*” However, the statement regarding agricultural fields is incorrect. There is no such exemption for agricultural fields. Therefore, given the close proximity of the agricultural fields to the

watercourse bisecting the Subject property, and the fact that no turtle nesting surveys were conducted in support of the application, it is premature to conclude that Turtle Nesting Habitat SWH is absent. Please address.

- b. Re: Terrestrial Crayfish SWH, please indicate whether any dedicated field surveys were conducted in search of terrestrial crayfish burrows. Surveys conducted during the spring, when vegetation is still low and weather conditions are wetter, are most likely to document their presence.
 - c. Re: Eastern Milksnake (Species of Conservation Concern), the assessment is based on coverboard surveys conducted in 2017 *“and other field investigations in 2012 and 2019”*. Please indicate whether the 2012 field investigations are referring to incidental observations? According to Table 3.1 no dedicated field surveys were carried out prior to 2017.
 - d. Re: Snapping Turtle (Species of Conservation Concern), please indicate if any dedicated surveys to document this species along the creek were conducted or whether the statement that *“...the species was not observed during the 2017 or 2019 field investigations”* was based on incidental observations only. Table 3.1 does not indicate that any dedicated surveys were conducted.
 - e. Re: Common Nighthawk (Species of Conservation Concern), please provide additional justification why suitable nesting habitat is absent in the Study Area. The nesting habitat description provided is misleading. According to Sandilands (2007), in Cadman et al., (2007), *“In the agricultural south, it has nested in grasslands, agricultural fields, gravel pits, prairies, and alvars and airports.”*
 - f. Re: Woodland Vole (Species of Conservation Concern), please provide other justification why suitable habitat is absent in the Study Area. The statement that *“There are no records of Woodland Vole in the vicinity of the Study Area”* is not satisfactory since *“Woodland Voles are an often overlooked member of the fauna, as they are secretive and rarely appear above ground during daylight”* (Naughton, 2012).
32. Text on page 6.11 or Table B-2 (Appendix B) does not adequately justify why breeding habitat for Eastern Wood-Pewee is absent on the Subject Property. An Eastern Wood-Pewee was recorded in the woodland along Thorold Townline Road on June 14, 2019, when bat acoustic monitors were deployed but not on June 25, 2019, when monitors were collected. Given that (1) this woodlot was not monitored for breeding birds in 2019, (2) wind speeds exceeded the recommended maximum to document breeding birds for the majority of June 25, 2019, and (3) less time was spent within the woodlot removing the monitoring equipment than setting it up, it is reasonable to assume that the habitat was suitable for breeding. This is consistent with the conservative approach applied to the Breeding Bird Survey methodology (see Section 3.2.3 on page 3.5). Please provide justification to support the position that the woodland along Thorold Townline Road did not provide suitable breeding habitat for Eastern Wood-Pewee in 2019.

Section 8.4.1.4 Fish Habitat – Potential Impacts - Headwater Drainage Features and Catchment Loss – Mitigation

33. Please provide a description of flow in the realigned watercourse through the site under final rehabilitation conditions relative to flow through the existing watercourse under existing conditions.

Section 8.4.1.6 Mitigation (for removal of existing watercourse) pg. 8.17

34. The report states, “Beyond the fish habitat just described, a series of wetland pockets and water ponding areas will be incorporated into the floodplain but not connected to the new channel. These areas may provide habitat for breeding amphibians, and there is the potential for fish to enter under flooded conditions and remain there until the next flooding event occurs to allow them to exit.” We suggest that it is better if Northern Pike that enter the watercourse to spawn do not become trapped in floodplain ponds, and it is also better if young-of-the-year Northern Pike migrate downstream to permanently wet habitat rather than entering floodplain ponds that they may not escape from. This should be taken into consideration in the final channel design if realignment proceeds.
35. The report states (pg. 8.19) “The benefits of increased habitat quality cannot be quantified pre-construction; however, increased habitat diversity should intuitively result in improved quality of habitat and consequently, increased fish productivity. Fish productivity can be confirmed through post construction monitoring.” The proposed stream realignment will be subject to a review by Fisheries and Oceans Canada and require a Fisheries Act authorization if it is permitted to proceed. We would respectfully suggest that review should specifically consider the function of the existing watercourse, at a regional scale, as Northern Pike spawning and nursery habitat. That function is relevant to consideration of the elimination of the existing channel and, if that is to occur, the new channel design and the design of the monitoring program. Some design elements that are intuitively appealing may conflict with that function.

Section 11.0 Environmental Monitoring Program pg. 11.1

36. The report states “Fish community monitoring will also be completed for the new channel design area every two years as outlined in the DFO Authorization for the watercourse realignment.” To the best of our knowledge, a DFO Authorization has not been issued for the watercourse realignment. Therefore, it is premature to refer to a monitoring program outlined in the DFO Authorization. We suggest that, if the creek relocation occurs, monitoring of Northern Pike spawning and recruitment should be conducted in the existing channel to provide baseline information and post-realignment.

Appendix E Proposed Upper’s Quarry, Natural Channel Design Report – Section 3.4 Aquatic Habitat pg. 3.5-3.6

37. The Natural Channel Design Report states “Habitat conditions for potential usage by spawning Northern Pike were noted to be of marginal quality during that [the March 26, 2010] survey.” We were unable to find a statement to this effect in the memorandum by AECOM (2010) describing that survey. Please clarify.
38. The Natural Channel Design Report states “While spring freshet typically creates conditions that allow for movement of Northern Pike into potential spawning areas, as flows recede and conditions

become intermittent, habitat conditions are generally too poor to support various life stages of fish. As the system dries up, refuge pool habitat becomes limiting except for the pool associated with the Upper's Lane culvert. The seasonal nature and lack of sustained flow, absence of adequate refuge pool habitat and inability to support perennial conditions favourable to fish reduce the habitat quality of the tributary to a low rating." It should be recognized that Northern Pike often spawn on vegetation that is flooded in the spring, in areas that are dry later in the year. It should be recognized that, although those spawning areas may not be high quality fish habitat in the traditional sense, but they are critical for the Northern Pike populations that spawn there. The AECOM (2010) memorandum states "Ultimately, the sensitivity of the fish and fish habitat present can be considered Moderately Sensitive due to the presence of spawning habitat for Northern Pike."

Should the Region and/or members of the Joint Agency Review Team have any questions and/or require clarification of the points raised as key concerns and/or specific comments, please do not hesitate to contact the undersigned.

Sincerely,



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