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BEL 219396

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**Re: Peer Review of Natural Environment Report & Access Road Management/Ecological Enhancement Compensation Plan for the Proposed Shantz Station Pit Township of Woolwich, Region of Waterloo**

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Dear Mr. Welwood:

Beacon Environmental Limited (Beacon) has completed our review of natural heritage related reports prepared in support of Capital Paving's application for a Category 3, Class A Licence under the Aggregate Resources Act (ARA) for a new sand and gravel pit on a 93.5 ha property located on Part of Lots 81 & 82, German Company Tract in the Township of Woolwich, Regional Municipality of Waterloo.

This peer review letter is focused primarily on the following reports and plans:

1. *Level 1 & 2 Natural Environment Report (NER)* – Riverstone Environmental Solutions Inc. May 2019;
2. *Access Road Management/Ecological Enhancement and Compensation Plan (ARM/EECP)* – prepared by Riverstone Environmental Solutions Inc., MHBC and MTE. February 2020; and
3. *Site Plan Package* – MHBC (May 2019).

In addition to the above, Beacon also reviewed the following companion documents and plans related to the application.

- *Planning Justification Report and ARA Summary Statement – MHBC (May 14, 2019);*
- *Hydrogeological Investigation Report – MTE (May 10, 2019); and*
- *Transportation Impact Study (TIS) – Paradigm Transportation Solutions Inc. (April 2019).*

In addition to the desktop review, Beacon staff also participated in a site visit on October 29, 2019. The purpose of the site visit was to observe site conditions firsthand and discuss elements of the proposal with representatives from Capital Paving, Riverstone Environmental Solutions Inc. (RESI) and MHBC who were also in attendance.

The findings of our review are presented in this letter. The letter identifies and discusses the primary issues, followed by specific comments on the NER and ARM/EECP.

We generally we find the NER to be well written, organized and comprehensive, however our review has identified significant omissions in terms of the analyses and interpretation, which in our opinion must be addressed to satisfy the study terms of reference and various policy requirements.

### **Primary Issues**

1. The NER does not include an assessment of site access alternatives that avoid impacting Core Environmental Features and associated ecological functions;
2. The NER does not appropriately identify fish habitat in the Northern Wetlands;
3. There are gaps in the impact assessment; and
4. Recommendations for mitigation require more detail and better integration with the Site Plan package.

### **Evaluation of Alternative Site Access Options**

The NER has been prepared in support of one site access option and does not discuss or evaluate alternatives for accessing the proposed pit. The proposed access requires that a new road be constructed through the Wagner Woodlot which is identified as a Significant Woodland and supports Habitat for Endangered and Threatened Species as well as Significant Wildlife Habitat. This option also requires upgrades to an existing driveway that bisects the Provincially Significant Breslau Wetland Complex (PSW) which is also identified as Significant Woodland and supports Fish Habitat, Habitat for Endangered and Threatened Species, and Significant Wildlife Habitat. The NER acknowledges that the proposed access road will result in ecological impacts and will require extensive mitigation, long-term management and monitoring. Despite the availability of alternative site access options that completely bypass all significant natural heritage features in the study area and thereby avoid impacts to Core Environmental Features and their functions, the NER is completely silent on these alternatives.

In the absence of a technical evaluation of site access alternatives, it is our opinion that the NER does not:

- a) Satisfy the requirements of the Approved Terms of Reference (TOR) for the Environmental Impact Statement (EIS);
- b) Satisfy Township of Woolwich Official Plan (TWOP) policies 11.11.5, 13.4.4, 13.4.5, 13.13.9.9, 13.9.10; and
- c) Satisfy Regional of Waterloo Official Plan (RWOP) policies 7.G.3, 7.G.4, 7.C.12, 7.C.13. and 9.C.3d.

Our rationale for arriving at this conclusion and recommendations for addressing our concerns are outlined below.

It is our understanding from the last paragraph in Section 1 of the NER that in addition to meeting the ARA requirements for Category 3 – Class A licence applications, that the NER is also intended to meet

the requirements of an Environmental Impact Statement (EIS) for the purposes of satisfying provincial, regional and township policies relating to natural heritage resources and aggregate resources.

We understand that Terms of Reference (TOR) for an EIS were presented and circulated to the Region of Waterloo Ecological and Environmental Advisory Committee (EEAC) and Township of Woolwich in January and February 2019 respectively and that that revised EIS TOR were recirculated in April 2019 and approved in May 2019. Although not contained in the NER, presumably confirmation was received from the Township and their partners approving the EIS TOR presented in Appendix 11 of the NER. We also understand from Section 6.2 that the NER report has been prepared in accordance with these Approved EIS TOR.

In reviewing the NER and contrasting its contents with the EIS TOR, we find that the NER has omitted an evaluation of alternatives for accessing the site which is something that is clearly identified as a requirement.

Item 6 of the EIS TOR states [underlined text added for emphasis]:

*In conjunction with assessments undertaken through the planning analysis and traffic study to assess planning, land use, social and technical considerations, an evaluation of potential internal haul roads will be undertaken from the perspective of potential ecological impacts including any impacts of widening the existing private road and alternate access points.*

In our opinion, Item 6 of the TOR has not been satisfied as the NER does not include an evaluation of potential internal haul roads or assessments of potential ecological impacts of associated with alternate site access points. The NER should be revised to include a discussion of how alternative access points were evaluated.

Items 4i and 10a of the EIS TOR refer to the “proposed access road”, making it unclear how Item 6 is to be accomplished. Clarification should be provided.

We also note that Item 8 of the TOR states that all applicable RWOP policies will be addressed in the EIS, including but not limited to policies 7.C.9, 7.C.10, 7.C.11, 7.E.6, 7.E.8, 7.G.4, 9.C.6 and 9.C.8. Also included under Item 8 is an annotated list of specific policies referenced in the EEAC report that describes how these policies are to be addressed in the EIS. One of these relates to policy 7.G.4.

Policy 7.G.4 states:

*The following provisions will apply to Environmental Impact Statements required by the Region under Policy 7.G.3 (b):*

- (a) The Environmental Impact Statement will be prepared in accordance with the provisions of the Regional Greenlands Network Implementation Guideline; which requires that the EIS be prepared in accordance with the Regional Greenlands Network Implementation Guidelines (Region of Waterloo 2016).*

The *Regional Greenlands Network Implementation Guideline* provides specific guidance on preparation of EIS reports. Sections B.I.5 through B.I.7 of the guideline outline requirements for describing the proposed development and/or site alteration as well as requirements for evaluating alternatives as follows [underlined text added for emphasis]:

5. *A discussion of the proposed development and/or site alteration, with plans showing existing grades, proposed grades, grade changes with contour intervals not exceeding one metre, and where appropriate, structure elevations, of:*

- 5.1 *The proposed development or site alteration in relation to the environmental features and other natural features as delineated by the proponent and confirmed by agencies having jurisdiction, including locations of existing and proposed streets and lots, limit of grading, infrastructure, stormwater management facilities, trails, and, where appropriate, other structures;*

- 5.2 *Reasonable alternatives to the proposal; and*

- 5.3 *Alternative designs and/or methods of carrying out the proposal with less adverse environmental impact.*

6. *A concise description of anticipated direct and indirect impacts to the environmental features identified in 2.1 and 4 that may reasonably be expected to result from the proposal, alternatives to the proposal, and alternative methods of carrying out the proposal. The impacts should be discussed in terms of their likelihood of occurrence, anticipated areal extent, anticipated duration, and reversibility/irreversibility, and relation to impacts associated with development identified in 2.10. Reference should be made to the definition and examples of adverse environmental impacts in the Glossary. Where fish habitat is present, the applicant will complete a Risk Assessment Process for Fish Habitat in order to identify the risk of impact to fish habitat.*

*The above shall include an explanation of the methods and assumptions used to determine the above-mentioned effects of the proposed development.*

7. *A comparative evaluation of the alternatives identified in item 5 in terms of anticipated adverse environmental impacts and other relative advantages and disadvantages. This will result in selection or confirmation of a preferred alternative.*

As the NER does not include a comparative evaluation of alternatives for the proposed access road, it is our opinion that the NER has not satisfied Item 8 of the TOR and by extension does not meet the requirements of RWOP Policy 7.G.4. The NER should be revised to include a detailed comparative technical evaluation of alternative access roads as per the guideline.

TWOP policies 13.4.4 and 13.4.5 apply to the construction of infrastructure projects, such as access roads, within or adjacent to Provincially Significant Wetlands (PSW). In accordance with these policies, an EIS must be prepared to assess the level of potential impact of the undertaking on the PSW and demonstrate that other alternatives that are less impactful have been considered but determined to be less feasible from a technical, environmental and financial perspective. Sections 7.C.12 and 7.C.13 of the RWOP contain identical policies relating to Core Environmental Features such as PSW's and

Significant Woodlands. As the NER does not include a discussion of alternatives for the proposed access road, it is our also our opinion that the NER has not demonstrated compliance with the above-noted policies. The NER should be revised to include a comparative evaluation of alternative access points demonstrating that less impactful options are infeasible.

The Township's Aggregate Resources Policy contained in Chapter 11 of the TWOP also require alternative access road options to be evaluated. TWOP policy 11.11.4 requires that a Transportation Impact Study (TIS) provide the following information:

*11.11.4 c) land use, land activities and the character of adjacent lands including social attributes and cultural heritage and environmental resources potentially impacted along the proposed haul route and, taking into account the classification of the roads involved, the nature of those impacts;*

*11.11.4 d) an evaluation of alternative haul routes, the identification of the haul routes with the least impact; and*

*11.11.4 i) whether improvement of the roads proposed to be used for haul routes is necessary, the costs of such improvement, any anticipated impacts on significant social attributes and economic, cultural heritage, and environmental resources affected by such improvement, and whether an Environmental Assessment is required for this improvement.*

Although the Transportation Impact Study (TIS) prepared by Paradigm Transportation Solutions Limited (2019) is not the focus of this review, we also note that the TIS does not contain any discussion of alternative haul routes or their anticipated impacts. As both the NER and TIS are required to assess alternative haul routes in order to comply with RWOP and TWOP policies, it is recommended that the TIS also be revised to include such an evaluation.

While not referenced or discussed in the NER or TIS, the *Planning Justification Report & ARA Summary Statement* (MHBC – May 14, 2019) contains an evaluation of four options for accessing the site, presumably to demonstrate compliance with applicable RWOP and TWOP policies, although this is not explicitly stated. The evaluation is presented in a memorandum entitled *Shantz Station Pit – Access Road Options Review and Evaluation* (MHBC - May 13, 2019) which is included in Appendix 2 of the *Planning Justification Report & ARA Summary Statement*.

The *Shantz Station Pit – Access Road Options Review and Evaluation* includes an evaluation of four potential site access options as follows:

- *OPTION #1 - 1226 Maryhill Road Driveway – Existing access west through Woodland to Shantz Station Road;*
- *OPTION #2 - South Farm Driveway – Existing farm driveway south to Foerster Road;*
- *OPTION #3 - Residential driveway on the east side of Hopewell Creek to Village View Road; and*
- *OPTION #4 - North through right-of-way to Maryhill Road.*

Table 1 of the evaluation describes 13 assessment criteria that are categorized according to the following factors: transportation (2), social (6), environment (2), and economic (3). Table 2 of the

evaluation contains a brief summary of each option from the perspective of each factor. Options 2 and 1 were ranked as most preferred respectively and Options 3 and 4 were ranked as least preferred.

Option 2 was ranked as most preferred for all factors, including environment, but was determined to be infeasible because it would require upgrades to Foerster Road. For this reason alone, Option 1 was “*selected as the recommended option with the highest ranking and feasibility of construction*”.

It is our opinion that the evaluation lacks the level of detail and transparency to meet the various policy tests in the RWOP and TWOP that require less environmentally impactful alternatives to be explored and evaluated. Our rationale for arriving at this conclusion and recommendations for addressing our concerns are outlined in the points below.

- No policy context is offered in the evaluation. As was noted above, there a number of policies in the RWOP and TWOP related to infrastructure, aggregate resources and natural heritage resources that require applicants to undertake studies to demonstrate that all possible alternatives have been considered prior to approving infrastructure and site alterations within or adjacent to significant natural heritage features such as Significant Woodlands, PSWs, Fish Habitat, Habitat of Endangered and Threatened Species, and Significant Wildlife Habitat. This evaluation should be revised to make it clear how the various policy tests for examining alternatives have been satisfied.
- There is insufficient detail on the methodologies used in the evaluation to allow for an objective validation of the findings. The evaluation should be revised to more clearly describe the methods used.
- No explanation is provided on how the various factors used to evaluate each of the four criteria were weighted and scored or how most and least preferred was determined. The evaluation should be revised to include a better explanation.
- The various evaluation factors are not linked to related policy objectives contained in the RWOP and TWOP making it unclear how these objectives were considered in the selection of a preferred alternative. The evaluation should be revised to clearly identify how the scoring of the various factors relates to the related policy objectives.

As the various technical studies only considered Option 1, it is unclear what technical information was used to evaluate Options 2, 3 and 4. Considering that the RWOP and TWOP polices do require the NER and TIS to consider alternatives, it is our opinion that MHBC evaluation should reflect the outcome of that work.

- One of the key evaluation factors for the economic criteria is cost, however no costs have been included in the evaluation. Considering that cost of road upgrades is identified as the main reason for selecting Option 1 over Option 2, it is critical that the evaluation be supported by a cost comparison. The evaluation should be revised to include a full cost accounting for each option.

- It is noted in Table 2 of the evaluation that during a pre-consultation on December 10, 2018, Township staff indicated that Foerster Road is not designed to accommodate heavy truck traffic. The pre-consultation record included in Appendix 1 of the Planning Justification Report confirms that Township staff indicated that it was their preference for the pit to be accessed using Shantz Station Road as Foerster Road was not up to standard. As the pre-consultation record is silent on the new road proposed through the Wagner Woodlot, it is unclear whether Township and GRCA staff were aware at the time of the pre-consultation that accessing the site would require cutting through this woodlot. Additionally, it does not appear Regional planning staff were present. Please provide confirmation and clarification.

It is recommended that the MHBC evaluation be revised based on the recommendations provided in the points above. Additionally, the NER and TIS should also be amended to include a technical assessment of the alternatives.

### **Fish Habitat in Northern Wetlands**

The NER does not include an assessment of potential impacts of the proposal on fish habitat within the Northern Wetlands. While the NER recognizes that the Northern Wetlands provide headwater functions to the western tributary of Hopewell Creek downstream or west of Shantz Station Road, it does not characterize the full extent of fish habitat on the site and adjacent lands or address potential impacts of the proposal on fish habitat associated with the Northern Wetlands. Similarly, there is no discussion of fish habitat or potential impacts to fish habitat included in the *Level 1 & 2 Hydrogeological Investigation (HI)* (MTE 2019).

It is therefore our opinion that the NER does not:

- a) Satisfy the provincial standards for Category 3 licenses;
- b) Satisfy Township of Woolwich Official Plan (TWOP) policies 11.11.5, 13.6.2, 13.16.1 and 13.18; or
- c) Satisfy Regional of Waterloo Official Plan (RWOP) policies 7.C.10, 7.G.4a and 9.C.3d.

We are also of the opinion that the HI report does not satisfy TWOP policy 11.11.9d.

Our rationale for arriving at this conclusion are outlined below.

- While the HI (MTE 2019) was not the subject of this peer review, we note that the HI report, as well as the Micro Drainage Analysis contained in Appendix F, do not adequately describe how the proposal will affect surface water levels and fish habitat in the Northern Wetlands. In Appendix F, it is explained that the proposed pit will cut off all surface water runoff contributions to the Northern Wetland and that this deficit will be made up through increased infiltration in the pit which presumably will increase or maintain the hydraulic head in the wetlands. It is unclear how this is can occur under the post-development scenario when the HI report also indicates that “*Pre-development annual infiltration flows do not contribute directly to Wetland 1*”. In our opinion, in the absence of detailed analysis how hydrological conditions in the wetland will be affected, it is not possible to assess potential impacts to the Northern Wetlands.

- It is understood from Section 1 of the HI report, that this report is also intended to function as a Water Resources Impact Study in accordance with TWOP policy 11.11.1(g) which states that:

*For operations which propose above water table extraction, a Water Resources Impact Study as described by Section 11.11.9 which satisfactorily demonstrates that the proposal will not have any unacceptable impacts.*

- TWOP policy 11.11.9d states:

*The Water Resources Impact Study for above water table extraction as described in Section 11.11.1(g) shall provide the following information:*

*d. The nature of impacts on water resources as the impacts relate to natural areas, features and systems (including fisheries) and the form, function and integrity of the natural features, how these impacts can be mitigated, the risks associated with mitigation, and the remaining impacts after mitigation.*

- To satisfy TWOP policy 11.11.9d, the HI should be amended to include a more fulsome explanation of how wetlands and fish habitat will be affected by including a discussion of how the proposal affects wetland hydrology. A hydrograph contrasting pre and post development conditions would be helpful. The NER should also be amended to discuss the ecological implications to fish habitat as well.
- Section 3.4 and 3.6.4 of the NER note that the Northern Wetlands form the headwaters of the west branch of Hopewell Creek and that this tributary is considered a coldwater fishery by MNRF and could possibly support Brown Trout. The NER indicates there are no defined channels in the wetlands east of Shantz Station Road, however this is not consistent with our observations or MNRF and GRCA mapping of fish habitat which identifies two channels, one immediately south and of the existing laneway that runs parallel to the driveway an extends to the Wagner Woodlot, and another that extends northeast through the wetland all the way up to St. Charles Road where it passes through another culvert.
- Based on our observations of the southern and northern culverts at Shantz Station Road (Culvert IDs 30016 & 30017 respectively) and examination of their invert elevations and flow conditions, we are of the opinion that there exist no barriers to fish passage that would prevent fish from migrating upstream of Shantz Station Road and well into the Northern Wetlands. There is considerable discharge and clear flow paths that allows for fish to reach many areas of the swamp and even spawn. Field notes from the ELC survey presented in Appendix 4 of the NER note the presence of organic soils, seeps and springs, cold water pools. These observations are consistent with the observed conditions during our site visit confirming that it is highly probable that large areas of the Northern Wetlands support fish habitat.
- We note that the aquatic surveys completed for the NER did not examine the Northern Wetlands to confirm the presence of fish or spawning activities. This work should be done.



- As it noted in the NER, the Federal Fisheries Act defines “fish habitat” as:  
*...spawning grounds and any other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes”. Under this definition, direct and indirect habitat are considered equivalent.*
- Section 3.7 of the NER indicates that fish habitat is absent from the site. The NER defines “site” as the area proposed to be licensed, which includes the proposed extraction area, proposed site access, and other portions of the subject property. As portions of the Northern Wetland do overlap with the area to be licensed, the presence of fish habitat on site should be acknowledged in Table 2 of the NER and potential impacts to fish habitat discussed in Section 5.
- Section 6.1 of the NER states that with respect to TWOP policy 13.6, the “*NER has dealt with potential implications of the project on adjacent and downstream fish habitat associated with Hopewell Creek, as well as a PSW which is the headwaters of a western tributary of Hopewell Creek*”. In our opinion this policy has not been satisfied as neither the NER or *Access Road Ecological Enhancement and Compensation Plan* discuss potential impacts to fish habitat in the PSW.
- Section 6.2 of the NER discusses how the RWOP environmental polices have been addressed, and similarly there is no discussion of how RWOP policy 7.D which relates to fish habitat.
- In our opinion, the NER should be amended to include a more fulsome discussion of fish habitat within the PSW and the potential impacts of proposed site alterations in order to satisfy the various policy tests noted above. Additionally, we recommend that a DFO Request for Review be completed to allow for the agency to confirm the project and associated mitigation is compliant with the Federal Fisheries Act.

### **Gaps in Impact Assessment**

Section 5 of the NER includes the impact assessment and mitigation recommendations. We generally find the approach to be consistent with impact assessment standards and consistent with that outlined in the EIS TOR and Regional Greenlands Network Implementation Guideline, however due the omission of an evaluation of site access alternatives and impacts on the natural environment, it remains our opinion that the NER is incomplete. Should the NER be amended or revised to include such an evaluation that clearly demonstrates that no other feasible site access alternatives exist, then it is recommended that the NER address in detail the comments provided below.

- Section 5.2 summarizes potential impacts to PSWs. The NER indicates that there will be no direct impacts to the Northern Wetland PSW. Similarly, the Hydrogeological Investigation Study (HIS) (MTE 2019) anticipates there will be no adverse impacts to the wetland. Both the NER and HIS anticipate that the proposed pit will reduce surface runoff contributions to

the Northern Wetland and that this deficit in the wetland water balance will be made up through increased infiltration in the pit which will presumably increase the hydraulic head in the wetlands. It is unclear how this can occur under the post-development scenario when it is suggested in the HI report that “*Pre-development annual infiltration flows do not contribute directly to Wetland 1*”. Neither report describes the anticipated changes to surface water levels in the Northern Wetlands. In the absence of this information, it is not possible to make a determination of hydrological impacts to the Northern Wetlands. The NER and HIS should be amended to include some estimation of the net change in surface water levels in the wetland.

- The NER indicates that the proposal will not directly impact the Northern Wetland PSW, however, it is clear from our site visit and photos 4 through 6 of the Access Road Ecological Enhancement and Compensation Plan (ARM/EECP) that some of the trees along the edge of the driveway are rooted within the wetland. The NER does not speak to the direct impact of clearing this vegetation to accommodate grading and barrier installation. Based on our review of the MTE plan and profile drawings provided in the ARM/EECP, the proposed grading limits match the PSW limits for much of the alignment. In the absence of a detailed survey of these trees and their canopies, it is not possible to determine the extent of direct impacts to the PSW. Should the evaluation of access road options (to be included through an addendum to the NER) determine that there are no feasible alternatives for accessing the site, then the NER should be supported by a detailed tree survey that quantifies the extent of vegetation affected by the proposed works to allow the NER to fully assess impacts to this PSW and its functions.
- Section 5.2 of the NER recommends that “*culverts should be installed in the existing and proposed laneways to promote connectivity between wetland components and herpetofaunal movement*”. A similar recommendation is provided in Section 5.5.1.4 which states that “*Specialized barrier fencing and passable culverts for amphibians must be erected along the northern and northeastern extraction limits and existing and proposed portions of the access route*”. We understand from Section 5.5.1.4 that these recommendations were provided to “*maintain potentially significant amphibian movement corridors between the Northern Wetlands and the larger components of the PSW to the west*”. We agree that connectivity within and between the PSW must be maintained to avoid impacting this wetland function and that culverts can help mitigate loss of connectivity. It is therefore unclear why the ARM/EECP, which was prepared after the NER, has abandoned the previous recommendations for culverts and is now suggesting that “*there is a low likelihood that there is a wildlife movement corridor that extends in a north-south in this location*”. We have difficulty understanding how this statement can be rationalized, considering that the NER has already acknowledged the presence of a significant Animal Movement Corridor. Furthermore, it is unclear how wildlife utilization was determined to be low. If wildlife utilization of this corridor is considered low, then why has a 600+ m long continuous jersey barrier been recommended for the purposes of “*preventing wildlife (amphibians, reptiles and small mammals) from accessing the travelled surface of the road thereby reducing the potential for mortality*”.
- In our opinion the introduction of continuous jersey barrier along approximately 660 m of access road through the Northern Wetlands and Wagner Woodlot will significantly restrict

wildlife movements for smaller animals which will impair connectivity functions of the wetlands and woodlands.

- Should the evaluation of access road options determine that there are no feasible alternatives for accessing the site, then the NER and ARM/EECP should be amended to include appropriate wildlife crossings at least every 30 m. For example, ACO AT500 tunnel units have a much lower profile that can easily be integrated into the road. The ecopassage design should be confirmed with MNRF.
- Section 5.3 relates to Endangered and Threatened Species. Appendix 8 of the NER includes a waypoint corresponding to an endangered butternut tree within the study area. The NER text suggests no butternut are present.
- We note that MECP considers all Forest and Swamp ecosites as habitat for endangered bats unless it can be demonstrated through snag and acoustic surveys that such species are absent or not sufficiently abundant to confirm maternity roosts. While the NER has conducted snag surveys, we note that Tri-Coloured Bat roost in habitats other than snags. The roost in dead leaves in maple and oak trees, which make communities such as the Wagner Woodlot potentially important. The NER does not include an assessment of Tri-coloured Bat habitat. MECP should be consulted.
- Section 5.4 relates to Significant Woodland. The Wagner Woodlot and Northern Wetlands collectively comprise a Significant Woodland. A 30 m buffer has been applied to the woodland which in our opinion is sufficient to protect key ecological functions.
- We note that Figure 6 of the NER illustrates the proposed limit of extraction to be within the 30 m buffer which appears to be an error and should be corrected.
- On the proposed Site Plan, there is 160 m long haul road 10 m in width that has been proposed to cut diagonally through the woodland. As was noted in the beginning of this section, we expect that the NER will be updated to include a detailed evaluation of site access alternatives that can avoid impacting the Wagner Woodlot. The NER estimates that the direct impact of the road will be the loss of 0.16 ha for forest habitat, although an area of 0.36 ha is noted on pg. 4 of ARM/EECP and a width of 8-10 m is indicated on Figure 2. It is unclear whether this estimate is based on required travel surface or disturbance area as no plans for this road have been provided in the ARM/EECP. Should the evaluation of access road options determine that there are no feasible alternatives for accessing the site, then the NER and ARM/EECP should be amended to include details for this road.
- Section 5.4 suggests that the proposed road alignment was staked and selected to minimize the direct loss of trees and canopy cover, however the recommendation that follows states the "*proposed access road should be laid out and staked with qualified biologists to avoid key tree specimens where possible*". During our site visit on October 29, 2019, Beacon observed some flagging tape in the vicinity of the proposed road, but it was unclear whether this tape corresponded with the centreline or edge of proposed road and representatives from Riverstone were unable to confirm. In reviewing the various materials, there appears

to be a fair degree of uncertainty about what stage in the planning process the exact location of the proposed road will be determined. For example, Section 5.3 suggests that the road “*alignment will be finalized following licensing*”, while the Operational Plan notes that the road location is “*to be refined in consultation with the landowner and applicable review agencies*”, and finally, the ARM/EECP notes that “*prior to construction of the new access road through the woodlot, the final alignment will be reviewed*”.

In the absence of more details regarding the location and alignment of the road, extent of associated clearing and grading, construction limits and a tree inventory summarizing effects to trees, vegetation and drainage as well as wildlife habitats and movements, it is not possible to support the impact assessment contained in the NER. There is simply not enough detail provided. For example, will populations of regionally rare *Carex trisperma* identified in the Wagner Woodlot be impacted? *C. trisperma* is a bog species so the identification should also be verified. Also, confirm potential observations of regionally rare *C. jamesii* noted proximal to the proposed road in Appendix 4 (waypoints 95 & 96).

Should the evaluation of alternate access roads determine that there are no feasible alternatives to constructing a haul road through the Wagner Woodlot, then it is recommended that the NER and ARM/EECP be amended to include the level of detail and analysis noted above.

- Section 5.5 relates to various types of Significant Wildlife Habitat identified in the study area. We find the impact assessment and proposed mitigation to generally be acceptable, however we do have several concerns which are summarized below.

If the Northern Wetlands and Wagner Woodlot have been identified as candidate habitat for Raptor Wintering Areas and Woodland Raptor Nesting, then the impact assessment should include some discussion of the effect of constructing and operating the proposed haul road on these wildlife habitat functions. Additionally, these areas should be evaluated for SWH as it related to Bat Maternity Roosts for non-SAR bat species.

- We note that many of the recommendations for culverts in Section 5.5. have been omitted from the ARM/EECP. Similar to our comments on Section 5.2, we recommend that if the evaluation of access road options determines that there are no feasible alternatives for accessing the site, that the NER and ARM/EECP be amended to include appropriate wildlife crossings at least every 30 m, subject to MNRF review.

We consider it unacceptable for the NER to defer details of critical mitigation measures to post licencing or site preparation. All recommendations for mitigation and enhancement must be detailed in the NER and also reflected on the Site Plan, Operational Plan and Rehabilitation Plan that are being submitted with the licence application. In our opinion, this is necessary to ensure implementation.

- Section 5.6 discusses other non-significant natural heritage features and functions. We are generally satisfied with the proposed mitigation and defer to agencies (MNRF and GRCA) regarding the suitability of plant material being selected for rehabilitation works and habitat

enhancements. We do however recommend that any changes also be reflected in the updated Site Plan package prior to submission of the licence application.

### **Integration of NER and ARM/EECP Recommendations with the Site Plans**

The NER and ARM/EECP include numerous recommendations for mitigation, habitat compensation and enhancement. We generally agree and support these recommendations, however due the omission of an evaluation of site access alternatives and impacts on the natural environment, it remains our opinion that the NER is incomplete. Should the NER be amended or revised to include such an evaluation that clearly demonstrates that no other feasible site access alternatives exist, then it is recommended that the NER address in detail the comments provided below.

- Section 3 of the Application Standards for a Category 3 Class “A” Licence outlines prescribed conditions to which the Licensee is subject to. Condition 3.4 states:

*Any recommendations and/or recommended monitoring program identified in the technical reports will be described on the site plan and all records will be retained by the licensee and made available upon request by the Ministry of Natural Resources for audit purposes.*

To ensure that all mitigation, habitat compensation and enhancement recommendations and monitoring requirements presented through the revised NER and revised ARM/EECP are implemented as a licence condition, it is important that they are all reflected on the MHBC Site Plan package.

- We recognize that many of these recommendations provided in the NER are already largely reflected in the MHBC Site Plan package, however it is anticipated that some of these recommendations will be revised and that additional recommendations provided through the ARM/EECP will be subject to further agency review. It is recommended that the various plans and notes be updated at that time to ensure they reflect the final recommendations from the various technical studies.
- In general, we concur with the recommendations listed on pages I-III of the NER, however as is noted above, we anticipate that NER will be revised or amended to include an evaluation of site access alternatives and that the outcome of that evaluation may result in changes to the which may need to be reflected though new recommendations and reflected in the Site Plan package.
- We suggest that the recommendations listed on pages I-III of the NER be strengthened to ensure appropriate implementation. This can be achieved by replacing “shall” or “should” with “will” or “must be”.
- Some of the recommendations are not specific enough leaving it unclear as to when and how they are to be implemented. One example is the staking of the proposed access road which was discussed in the preceding section. This cannot be deferred until after licensing as the exact location and details of haul routes must be reflected on the Operational Plan.

- Any revised details of habitat compensation, buffer and enhancement plantings must be reflected on the Operational Plan and/or Rehabilitation Plan. Individual recommendations should be numbered in both the NER and on the Operational Notes. The Operational Plan drawing labels should also be revised to reflect this numbering.
- As identified on Figure 3 of the ARM/EECP, Enhancement/Compensation Zones 1, 2 and 3, are situated outside the Area to be Licensed. The Licence boundary should be extended to include these areas to ensure the proposed activities are implemented as conditions of the License. If this is not possible, the applicant should enter into some form of financial agreement with the Township to ensure the works are implemented.

### Specific Comments

**We are providing the following report specific comments on the NER and ARM/EECP under the assumption that the NER, ARM/EECP and companion studies will be revised or amended to include a detailed evaluation of alternative site access options in accordance with municipal policies. The provision of comments on the proposed access road should not be interpreted as being preferential to this option.**

### Specific Comments on NER

Section	Ref.	Comment
Report Summary	Pg. I	Add fish habitat to the list of significant natural heritage features.
	Pg. I	Add an explanation that the NER also functions as an EIS and that it has been prepared in accordance with the TOR.
Recommendations	Pg. I	Consider moving the Recommendations section to the end of the report.
	Pg. I	Include in this section a statement indicating that all of the recommendations provided in the NER and supplementary Access Road Ecological Enhancement and Compensation Plan are also reflected in the updated Site Plan package.
	Pgs. I-III - All bullets.	Replace verbs such as “shall” or “should” with more assertive “will” or “are to be” or “must be” to strengthen the recommendations to make it clear they are to be implemented.
	Pg. II, Bullet 3	The Access Road Ecological Enhancement and Compensation Plan states culverts are not feasible but NER relies upon them to mitigate impact to wildlife movement. Alternative crossing methods must be included as was discussed in this review.
	Pg. II, Bullet 5	This recommendation speaks to general water table monitoring. It should speak to shallow groundwater and surface water monitoring

Section	Ref.	Comment
		required to assess ecological conditions in the watercourses and wetlands on and adjacent to the site.
	Pg. II, Bullet 6	Instead of prior to <u>pit operations</u> , should be prior to <u>site preparation</u> .
	Pg. II, Bullet 7	As these recommendations relate in part to the proposed access road, they are premature in the absence of an evaluation of access road alternatives. In our opinion, all access road options should have been staked out to allow for a detailed assessment of impacts to trees, vegetation, wildlife habitats and drainage features prior to completion of the Access Road Options Review and Evaluation. It is recommended that all trees and vegetation be thoroughly inventoried to quantify the loss of habitat, both from the Significant Woodland and the PSW.
	Pg. II, Bullet 9	Same as above.
	Pg. II, Bullet 10	Consider mentioning that the buffers will be planted with native species.
	Pg. II Bullet 11	Please add “any encroachments into SAR habitats are to be confirmed with MECP”
	Pg. II Bullet 12	Please add “barriers and ecopassage designs to be confirmed with MNRF”
	Pg. II Bullet 13	Please add “monitoring program to be confirmed with MNRF”
	Pg. II Bullets 14 & 15	These recommendations may be unnecessary as it is implicit that extraction will not occur outside the pit.
	Pg. III Bullets 1 and Table 3(4)	The list of suitable native species for rehabilitations is limited to a handful of species and is inadequate to fulfill the objectives for buffering and habitat enhancement. Please consult with GRCA staff to develop a more appropriate and diversified species selection. Same comment applies to the Rehabilitation Plan.
Background	Pg. 2 – Last paragraph of Section 1.1	Expand this section to explain how the NER is intended to meet the requirements of an EIS and that it has been prepared in accordance with approved EIS TOR (Appendix 11).
Approach and Methods	Pg. 9 – Section 2.4.7	Expand discussion to explain how habitat for each SAR bat species was determined, including Tri-coloured bat. MECP should be consulted to confirm that the approach utilized is acceptable.

Section	Ref.	Comment
	Pg. 12 – Section 2.5.7	More discussion should be provided on how fish habitat was identified and what areas were examined.
Biophysical Features and Functions	Pg. 15 & 16	Descriptions for FOD6-1 and FOD5-4 note the presence of regionally rare <i>Carex trisperma</i> . In our experience this species is typically only found in coniferous swamps and bogs. Please confirm.
	Pgs. 16&17	ELC unit SWM1-1 is noted as having organic soils in the ELC field notes in Appendix 4. Please confirm.
	Pg. 19-20 Section 3.6.4	Revise to include discussion of the extent of indirect and direct fish habitat in the Northern Wetlands.
	Pg. 20 Table 2.	Correct last row of Table 2 to recognize the presence of Fish Habitat within the site.
	Pg. 21 Section 3.7.3	Habitat requirements for Tri-coloured Bat are different from that of the others. They are not cavity or snag dependent, so explain how their habitats were defined. Also confirm approach with MECP.
	Pg. 22 Section 3.7.7	Please correct this section. The Northern Wetland PSW supports fish habitat as defined by DFO and overlaps with the subject property and site.
Phasing and Operations Plan	Pg. 22 Section 4	Preceding this section, there should be a new section for the Evaluation of Access Road Alternatives that would demonstrate the process by which a preferred option was identified and then naturally lead into introducing the Site Plan, Phasing Plan, etc. The evaluation should include a comparative assessment of all access road options from an ecological perspective. Specific criteria for evaluating the alternatives should be developed in consultation with the MNRF, Region, Township and GRCA. The costs associated with loss of habitat or ecological functions should also be identified.
	Pg. 22 Section 4	As noted above, an Evaluation of Access Road Alternatives must be provided to support the proposal as described herein.
Impact Assessment and Recommendations Section 5	Pg. 23	<p>It is recommended the Impact Assessment and Recommendations section either be split into two sections. The first would deal with ide. The first section would deal with items 1-3 in section 5.1, and the second would deal with item 4 (mitigation).</p> <p>The mitigation section would summarize all the preventative, mitigative or remedial measures considered, and recommendations provided. This section should make clear linkages and connections to the Site Plan, Operation Plan, Notes and Details Plan, and Rehabilitation Plan to</p>



Section	Ref.	Comment
		demonstrate in detail how the recommendation will be implemented. Details should include specifics for each recommendation (i.e. what, where, when, how, and by whom).
	Pg. 23. Last paragraph	Fish Habitat has been omitted from the constraint list as well as the Impact Assessment. A section should be provided.
Section 5.2 - PSW	Pg. 24 Section 5.2	Impact pathways to PSW is comprehensive and acceptable. Impact assessment paragraphs that follow lacks sufficient detail to support conclusions.  Please confirm that no wetland vegetation will be directly affected by the clearing to accommodate the laneway widening. Will the canopy of the PSW trees be affected? If so, is there and edge management plan proposed to mitigate?
	Pg. 25	The NER relies upon the MTE Hydrogeological Investigation to assess impact to the PSW features. As per our comments on Section 5.2, the analysis offered in the HIS is problematic and leaves it unclear in terms of how the hydraulic head will be maintained and what effects this has on water levels. Inclusion of a pre and post hydrograph plotting conditions relative to historical norms, mins and maxes would help support the conclusions offered.
	Pg. 26 Bullet 3	Culverts recommended to provide hydrologic connection but not included in the Access Road Options Review and Evaluation or on the proposed Site Plan, Operations Plan or Rehabilitation Plan. In the absence of a surface water analysis to confirm post development water levels, it is unclear how it can be demonstrated that the hydrologic connection can be maintained.
	Pg. 26 Bullet 4	Recommendation speaks to general water table monitoring. It should speak to shallow groundwater and surface water monitoring required to assess ecological conditions in the watercourses and wetlands on and adjacent to the site.
Section 5.3 – E & T Species		We note that this section does not contain a discussion for butternut.
Section 5.3.1 - Bats	Pg. 26	Unclear how impacts to Tri-coloured bat habitat are being addressed as this species roosts in habitats other than cavities and snags. Please confirm approach and impact assessment findings with MECP.
	Pg. 26	If the evaluation of access road alternatives determines that that the only alternative is to pass through the woodland, then the exact alignment must be addressed in the NER. It is unacceptable to select the alignment after licensing.

Section	Ref.	Comment
Section 5.4 – Significant Woodland	Pg. 27 Para. 3 and bullet 2	Same comment as previous.
Section 5.5 - SWH	Pg. 28 Bullets 2 & 3	Confirm barrier specifications with MNRF and include approved details to Site Plan, Operational Plan and Notes, prior to licensing.
	Pg. 29 Para 1	See comments on Section 5.2.
	Pg. 30	Bat maternity roosts for non-Endangered bat species should be discussed.
	Pg. 30	Complete surveys to confirm Woodland Raptor Nesting Habitats.
	Pg. 30	Confirm barrier specifications with MNRF and include approved details to Site Plan, Operational Plan and Notes, prior to licensing.
	Pg 31.	Seeps and springs noted in the ELC field notes for the Northern wetland. A portion of the Northern Wetland overlaps with the Site. Consider revising text to acknowledge. Also, it is not possible to conclude that there will be not impacts to groundwater in the wetlands as the assessment in the HIS (MTE) is inadequate.
	Pg. 34	Same comments as Section 5.2
	Pg. 35	Similar comments to introduction on plant species list and lack of planting details and phasing. If the rehabilitation plantings are proposed after pit closure, then when do the plantings of protective buffers happen.
Section 6.8 – Fisheries Act	Pg. 45	Statement regarding there being no fish habitat within the site should be corrected.
Figures 2-6		Add and label watercourse layers
Figure 5		Provide unique identifiers to individual ELC polygons as there are multiple sharing same code. Also correct in text as it is unclear which unit is being discussed.
Figure 6		Remove extraction limits line from Wagner woodland buffer.

**Specific Comments on Access Road Management/Ecological Enhancement and Compensation Plan (Feb 2020)**

Section	Ref	Comment
Introduction	Pg. 2 Para. 4	Fish Habitat is not acknowledged. Please revise.
	Pg. 3 Para. 1	The woodland also represents Habitat for Endangered and Threatened species.  There are insufficient details to support the estimation of woodland habitat loss. A simple 160 m x 10 m = 0.16 ha calculation does not consider topography, drainage, construction footprint and impacts to tree canopies, especially if the alignment has yet to be determined. No construction details or road profiles are provided to support this estimation. A detailed tree survey and analysis should be provided along with and edge management plan.
	Pg. 3 Para. 2	Deferring finalization of the road alignment to after licensing is unacceptable and does not allow for the NER to fulfill the requirements of the impact assessment
Objectives & Policy Context	Pg. 4 Para. 1	0.36 ha should be corrected to 0.16 ha.
	Pg. 5 Para. 1	PPS policy 2.1.6 relates to fish habitat and has been omitted. The access road will be metres or less away from fish habitat should therefore be addressed.
	Pg. 5 Paras. 2 & 3	The NER has not sufficiently addressed potential impacts of widening the existing access road or the proposed access road on the PSW, Fish Habitat, Significant Woodland, SWH and Habitat of Endangered and Threatened Species, so the about no impacts is premature until the NER has completed the necessary work to make this conclusion.
	Pg. 5 Para 5	We agree that PPS Policy 2.5.3.1 applies, however the Rehabilitation Plan does not include progressive rehabilitation as it relates to buffer plantings and compensation works. Note 1.3.5 on the Rehabilitation Plan relates to progressive rehabilitation but does not correspond to anything on the drawing. It also sounds like most compensation and habitat enhancement will occur after pit closure which is unacceptable. The note suggests that as compensation for the haul road cut, a 0.36 ha or greater area will be reforested before clearing, but the drawings don't show where.
	Pg. 6 - 8	Policy 7.C.12 and 7.C.13 should also be discussed as they relate to infrastructure and the widening or construction of roads. Under these policies, the NER/EIS is required to demonstrate that there are no other

Section	Ref	Comment
		alternatives, which it has not. While the PJR has included an evaluation of alternatives, it is not supported by technical studies that considered or examined the alternatives.
Access Road Management Plan	Pg. 8 Section 3.1 Last para.	The NER has not confirmed that the road widening will not result in site alteration to the PSW, Fish Habitat, Habitat of Endangered or Threatened Species or Significant Woodland. Vegetation removal constitutes site alteration and it remains unclear to what extent the wetland trees discussed in paragraph 3 of this section will be affected. It is recommended that a detailed tree and vegetation survey be undertaken to confirm the extent of canopy affected.
	Pgs. 8-9 Section 3.2 First para.	The Significant Woodland is also recognized as Habitat of Threatened and Endangered Species and Significant Wildlife Habitat. Neither the NER nor the ARM/EECP has identified the exact location of the proposed alignment. Instead this is deferred to post licensing for some reason. In the absence of a detailed design for the road, it is not possible to quantify impacts appropriately. Assumption of a 10 m wide alignment that may possibly shift is insufficient to make such determinations as the road itself will be that wide.
	Pg. 9 Section 3.2 Para. 2	It is noted that alternatives access road connections were considered that bypassed the Wagner Woodlot and we recall having these discussions in the field with representatives, however these alternatives are not reflected in the evaluation contained in Appendix 2 of the PJR. Please revise text in this section accordingly.
	Pg. 10 Section 3.3.1.3	It is noted that no culverts are proposed along the existing road. The NER includes recommendations for culverts for the purposes of maintaining connectivity for wildlife as well as for hydrologic connection between the wetlands. It is unclear what has changed. In our opinion, there must be accommodation for wildlife passage at regular intervals to maintain wildlife movement. There is no evidence to suggest wildlife move only east west. If this was the case, why are jersey barriers being proposed to discourage north-south movements. Additionally, as it remains unclear how water levels in the Northern Wetlands will be affected, there may also be a need to provide for hydrologic connections. We recommend reviewing designs for alternative ecopassages with MNR.
	Pg. 10 Section 3.3.2.1	If it is determined that there are no feasible alternatives to this road, then a detailed design must be prepared based on the least ecologically impactful alignment and the NER must address all the impacts in detail to support this. It is not acceptable to postpone this to post licensing.
	Pg. 11	Birds nest in all vegetation, not just mature trees, so timing restrictions should apply to all vegetation. Tri-coloured bats also roost in vegetation other than mature snag trees.

Section	Ref	Comment
	Section 3.4.1.1	
	Pg. 11 Section 3.4.1.3	Please confirm that there are no plans to revegetate the areas along the driveway from which vegetation has been removed.
	Pg. 11 Section 3.4.2.1	Birds nest in all vegetation, not just mature trees, so timing restrictions should apply to all vegetation. Tri-coloured bats also roost in vegetation other than mature snag trees.
	Pg. 12 Section 3.4.2.3	It is suggested that the road will be removed following Phase 1. It is unclear whether this is in reference to the phases on the Rehabilitation Plan or Operational Plan. Rehab Phase 1 corresponds with Extraction Phase 2, but there are 5 phases for each, so it is unclear how product from subsequent phases will be hauled out or how other rehabilitation will be carried out if access is cut off. Section 5 suggests removal of the road will occur last and describes Phase 1 as within the first 5 years.
Ecological Enhancement and Compensation Plan	Pgs 12-18 Section 4	We generally support the proposed ecological enhancements and compensation measures. Like mentioned previously, we think the planting lists could be diversified further through consultation with GRCA. Densities for tree plantings in buffer zones 6 & 7 don't seem to be provided. We note that the existing driveway is not identified as a Zone on Figure 3. We would expect there to be edge management applied along the existing driveway and the new road through the woods implemented immediately following clearing and that some form of rehabilitation applied following licence closure.
		Enhancement/Compensation Zones 1, 2 and 3 are outside the Area to be Licensed. The Licence boundary should be extended to include these areas to ensure the proposed activities are implemented as conditions of the License. If this is not possible, the applicant should enter into a financial agreement with the Township to ensure the works are implemented.
Summary of Timing and Phasing of proposed Compensation and Enhancement	Pgs 19 - 20	We find this summary to be confusing, especially when it comes to following the proposed timing and sequencing. A revised table organized more like a schedule would be very helpful. Table columns could correspond with years/steps/stages to make it clear what happens first, second and so on. For example, Zones 6 & 7 are to function as protective buffers. One would assume buffers would start to get planted immediately to be in place prior to site preparation and start to provide added protection, however it is suggested this will occur in the first five years.

Section	Ref	Comment
Conclusions and Recommendations	Pg. 21 Para1-2	It is premature to make conclusions about impacts or ecological gains as the NER must be updated to include additional analysis to satisfy the EIS TOR and policy requirements to make this determination.
	Pg. 21	<b>When finalized and approved, all of the recommendations presented in the NER and ARM/EECP must be reflected in their entirety on the Site Plan, Operational Plan, Notes and Details, and Rehabilitation Plan in accordance with Provincial Standards.</b>

### Peer Review Summary

As part of our retainer for this peer review, we were required to confirm the following questions with respect to the documentation reviewed. Below is a high-level summary of our findings (in bold).

#### Questions to be Addressed by Peer Reviewer

##### a) Adequacy of the studies undertaken

Does the NER/EIS adequately and appropriately characterize the biophysical environment?

**No. Fish habitat is only partially characterized. Habitats for endangered species such as Butternut and Bats also not adequately characterized.**

Does the NER/EIS appropriately identify the significance of the natural heritage resources associated with the study area?

**Yes, except for Fish Habitat and Habitat of Endangered and Threatened Species.**

Were the various investigations undertaken at an appropriate scale and during the appropriate seasons to identify valued ecosystem components?

**Yes, except for Fish Habitat and Habitat of Endangered and Threatened Species.**

##### b) Adequacy of Documentation

Have all relevant technical disciplines (e.g., aquatic and terrestrial environment) been fully addressed in the report with sufficient detail to allow the reviewer to reach conclusions?

**No. The NER does not assess in sufficient detail the potential impacts of the proposal on Fish Habitat, Northern Wetland PSW, Significant Woodland and Habitat for Endangered Species.**

Do they satisfy the provincial ARA standards for NERs?

**No. Provincial Standard for Level 1 NER requires fish habitat to be identified. Fish habitat is only partially characterized.**

Do they satisfy the EIS Terms of Reference?

**No. The TOR require the EIS to complete a comparative evaluation of site access alternatives to demonstrate that all options for impact avoidance to natural features have been explored and determined infeasible. The NER does not include such an evaluation. The impact assessment also does not adequately address potential impacts to Fish Habitat, PSW, Significant Woodland and Habitats of Endangered Species.**

Is there sufficient data and observation points?

**Yes (Generally). Most of the ecological surveys were completed at an appropriate scale and level of survey effort. Fish community and spawning surveys should have been undertaken in the Northern Wetlands to confirm the extent of fish habitat. Also, a detailed tree survey should have been completed to determine the number of trees affected by the proposed access road, and snag trees numbered to confirm if any are affected.**

c) Adequacy of Assessment

Have appropriate provincial and municipal evaluation criteria been applied?

**No. The NER does not meet the requirements outlined in the EIS TOR or satisfy key regional and township policies.**

Does the report draw reasonable and accurate conclusions from the results provided?

**No. It is premature to rely on the report conclusions as access road alternatives have not been fully evaluated and there remain some deficiencies in the impact assessment.**

Do the results support the conclusions drawn?

**No. Same comment as above.**

d) Feasibility of Site Plan

Does the Site Plan reflect the recommendations of the NER/EIS?

**Yes. Most recommendations made in the NER are reflected on the Site Plan, however many details are lacking and there are also inconsistencies with recommendations presented in the Access Road Ecological Enhancement and Compensation Plan (i.e. wildlife passages).**

Does the Site Plan include appropriate mitigation to protect natural features?

**No. The NER does not consider alternative access roads that could be used to avoid impacts.**

Does the Site Plan respect natural hazards?

**We defer to GRCA.**

e) Feasibility of the Rehabilitation Plan

Does the Rehabilitation Plan reflect the recommendations of the NER/EIS?

**Yes, however many details are lacking and there are also inconsistencies with recommendations presented in the ARM/EECP (i.e. wildlife passages).**

Are the environmental protection/enhancement measures specified in the Rehabilitation Plan appropriate?

**Yes (Generally) However, it is premature to confirm as access road alternatives have not been fully evaluated and there remain some deficiencies in the impact assessment.**

Can they accomplish the stated objectives within the time frame envisioned?

**Yes (Generally), but NER and ARM/EECP do not specify time frames**

f) Monitoring Plans

Do the Monitoring Plans reflect the recommendations of the NER/EIS?

**Yes (Generally) - more specific details should be provided in the NER.**

Is the monitoring program designed to provide the required feedback to allow for appropriate management and resource protections?

**Yes (Generally), but more specific details should be provided.**

g) Conformity of Plans to Environmental Legislation, Policies and Regulations

Do the Plans conform to the Federal Fisheries Act and Provincial Endangered Species Act?

**No. Fish habitat and endangered species has not been appropriately identified and assessed.**

Do the Plans conform to the Provincial ARA standards?

**No. Not all recommendations from the NER and ARM/EECP reflected in the Site Plan package. Timing and sequencing unclear. Also species selections need strengthening. Additionally, no mechanism provided for ensuring implementation of recommended habitat enhancement compensation outside the area to be licensed.**

Do the Plans conform to the policies of the Provincial Policy Statement, Growth Plan, and Regional and Local Municipal policies as they relate to natural heritage?

**No. The NER and other studies did not assess site access alternatives as required by policy. Gaps in impact assessment also do not satisfy policies.**

Do the Plans conform to GRCA regulations and policies?

**To be confirmed with GRCA.**



#### *h) Recommendations*

Have reasonable and effective recommendations been provided?

**Generally, yes but there are inconsistencies in recommendations contained in the NER , AMP/EECP and Site Plan package, as well as details missing regarding timing.**

Are the recommendations consistent with the findings and recommendation of the other technical studies?

**No. The NER is not consistent with the ARM/EECP or the HIS.**

### **Closure**

In conclusion, our review has found that while the NER appears is relatively comprehensive in terms of the background review, ecological inventories and provision of recommendations for impact mitigation, enhancement and compensation, there remain significant gaps in the impact assessment which in our opinion do not satisfy the requirements of the EIS TOR or the policy requirements of the RWOP and TWOP.

Our specific concerns have been outlined in detail in this letter. It is recommended that the NER and related companion studies be revised or amended to address the concerns expressed.

The main issue identified relates to the proposed access road for the pit which passes through the Core Environmental Feature. Despite there being policy requirements to evaluate less environmentally impactful alternatives that avoid impacting the Core Environmental Features, the NER and related companion studies (i.e. HI and TIS) are silent on such alternatives.

While MHBC had prepared an evaluation of site access alternatives, we find the evaluation deficient in terms of describing the methods employed and lacking in technical data necessary to support its conclusions and the selected option. It is recommended that the NER and other studies be revised to include a technical assessment of the alternatives and that this information be used to update the evaluation, which is also to be revised to address the concerns expressed in this review.

The NER should be revised to acknowledge the presence of fish habitat and habitat for endangered and threatened species in the Core Environmental Features and to include a more fulsome and integrated discussion on potential impacts, including impacts to wetland hydrology and wildlife movements.

With respect to the recommendations for mitigation, enhancement and compensation provided in the NER, most of these relate to the proposed access road which in our opinion is not currently supported by an appropriate level of evaluation based on the information reviewed. Nevertheless, we have provided through our review numerous comments and suggestions that we anticipate will be reflected in through revisions to the NER and that these will also be integrated and reflected on the revised Site Plan package.

We trust that the information contained in this review will not only assist the Region in assessing the technical merits of the work, but will also help guide the consultants with updating their studies and plans to be consistent with applicable standards and policies.

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