Town of Bracebridge
Council Correspondence

TO: **Mayor G. Smith and Members of Town Council**
J. Sisson, Chief Administrative Officer

COPY: **Management Team**
Media

FROM: **L. McDonald, Director of Corporate Services/Clerk**

DATE: **July 10, 2019**

CIRCULATION:

Item #	Description
SECTION "A" – STAFF INFORMATION MEMOS:	
A1	Memorandum from M. Holmes, Manager of Planning Services, dated July 10, 2019 regarding Official Plan Amendment D09-08/19 and Rezoning Application D14-17/18 (Muskoka Royale Development Inc.)
SECTION "B" – GENERAL CORRESPONDENCE:	
B1	Nil.

BRACEBRIDGE
The Heart of Muskoka

MEMORANDUM
Planning and Development Department

TO: **Mayor G. Smith and Members of Council**

FROM: **M. Holmes, Manager of Planning Services**

DATE: **July 10, 2019**

SUBJECT: **Official Plan Amendment D09-08/18 and Rezoning Application D14-17/18 (Muskoka Royale Development Inc.)**

This memorandum has been prepared with respect to the Muskoka Royale Development Inc. Official Plan Amendment and Zoning Amendment applications, which were considerated at the April 3, 2019 Planning and Development Committee under New Business Item 6.3.

At the April 3, 2019 Planning and Development Committee meeting the following Motion and Amendments were passed:

19-PD-051

1. That the Official Plan Amendment for the properties described as Lots 7 and 8, and part of Lots 6, 9 and 10, Concession 12, Muskoka North Ward, Town of Bracebridge be adopted as attached in Appendix "A" to Staff Report PD024-19.

2. That the property described as Lots 7 and 8, and part of Lots 6, 9 and 10, Concession 12, Muskoka North Ward, Town of Bracebridge, be rezoned from the current zones of Open Space Two (OS2) in part, and Environmental Protection Wetland One (EPW1) in part to Institutional Special – 17 Holding (I-17H) in part, Open Space One Special – 8 (OS1-8) in part, and Environmental Protection Wetland One Special – 1 (EPW1-1) in part, as shown attached in Appendix "B" to Staff Report PD024-19.

3. That further notice is not required pursuant to Section 34(17) of the *Planning Act*

AMENDMENT #1

19-PD-052 That the preceding motion be amended to refer the matter back to staff in the Planning and Development Department to facilitate further discussions with the applicant regarding the Rezoning and Official Plan Amendment applications and report back to Planning and Development Committee.

AMENDMENT #2

19-PD-053 That the preceding motion be amended to refer the matter back to staff in the Planning and Development Department to facilitate a second public meeting.

At the April 10, 2019 Council meeting the following Resolution was adopted to amended the above motions:

AMENDMENT #1

19-TC-082 That the preceding motions be amended to refer the matter back to staff in the Planning and Development Department to undertake a peer review of the Environmental Impact Statement Assessment and Species At Risk Assessment and to facilitate a second public meeting once the peer review and any supplement work, if any, by the applicant's Environment Consultants is complete.

The original motion to adopt the Planning and Development Committee Motion (as amended) was carried as amended by Amendment #1.

In accordance with Council's direction, a Request for Quotation to undertake the peer review was sent to six environmental firms on April 15, 2019. The six firms were from a list of accepted peer review firms for environmental work provided by the District of Muskoka. Hutchinson Environmental Sciences Ltd. (HESL) was selected as the successful firm to undertake the peer review on April 23, 2019.

On May 13, 2019, staff received a draft of the peer review. As per the Request for Quotation workplan, a meeting was held with the Town staff, District staff, the peer review team, the applicant's planner and the applicant's environmental consulting team. This meeting was held on May 17, 2019.

At this meeting, District of Muskoka staff indicated that only the Provincial Ministry has jurisdiction to delineate a specific Species at Risk (SAR) habitat and provided recommendations to prevent harm or destruction to a SAR habitat. They indicated that since the portions of the Species at Risk Assessment was reviewed and assessed by the Ministry of Natural Resources and Forestry, the peer review should only address the Environmental Impact Statement Assessment. As a result, Town staff provided direction to Hutchinson Environmental Sciences Ltd. to modify the scope of the peer review to exclude the SAR review, in accordance with the District's direction.

At the May 17, 2019 meeting, the applicant's environmental consultants, Michalski Nielsen Associates Limited, committed to provide supplemental information to address some of the outstanding comments in the draft peer review. As a result, the initial final peer review date of May 21, 2019 was postponed with a revised final peer review date to be determined once the supplemental information was received. A Clarification and Supplementary Technical Information document prepared by Michalski Nielsen Associates Limited dated May 28, 2019 was received by Town staff on May 30, 2019. A copy of the document prepared by Michalski Nielsen Associates Limited (MNAL) is attached to this memorandum as Appendix "A".

Due to other work commitments by HESL, a request to extend the period of time for submission of the finalized peer review was requested. Town staff agreed to HESL's request and established the start of July as the timeframe to finalize the peer review. The final peer review was received on July 4, 2019 and is attached to this memorandum as Appendix "B". For the sake of transparency, Hutchinson Environmental Sciences Ltd. has included their original comments from the May 13, 2019 draft peer review in the final peer review.

In accordance with Hutchinson Environmental Sciences Ltd. peer review and recommendations, there are some outstanding matters that need to be addressed by the applicant's environmental consultant. Once a response is provided by the applicant's environmental consultant, this information will be reviewed by Hutchinson Environmental Sciences Ltd. to verify that the recommendations from their peer review have been addressed by MNAL and the applicant. As communicated to Council previously, a second public meeting on the applications will not be scheduled until the environmental work is complete.

If any member of Council requires additional information please contact me at Ext. 258 or by email mholmes@bracebridge.ca or Cheryl Kelley, Director of Planning and Development at Ext. 253 or by email ckelley@bracebridge.ca

M. Holmes, Manager of Planning Services

APPENDIX "A"

Clarification and Supplementary Technical Information, May 28, 2019, Michalski Nielsen Associates Ltd.

Michalski Nielsen
ASSOCIATES LIMITED

May 28, 2019

Mr. Matt Holmes, Manager of Planning Services
Town of Bracebridge
1000 Taylor Court
Bracebridge, Ontario P1H 1R6

Re: Clarifications and Supplementary Technical Information on our Environmental Impact Study for Muskoka Royale College; Our File 3517

Dear Mr. Holmes:

Further to our meeting of May 17, 2019, the information in this letter provides clarifications and supplementary technical information on our Environmental Impact Study for Muskoka Royale College, as requested by the peer reviewer.

1. Additional Information in Support of Approximate 15% Development Footprint

The figures included within the EIS that show conceptual development configurations for each school precinct are based on full build-out of the school, to a maximum projected population of 1,800 students. The precincts have been sized to accommodate some flexibility in the location of facilities, which are to be finalized during the Site Plan process, however, are intended to maintain considerable portions of the precincts in a natural condition over the long-term. **Appendix A** includes a drawing from the architect which shows a minimum 10 m cleared area around all buildings, roadways, parking areas, playing fields, etc. for the current concept plan (showing full build-out); the total area of disturbance shown in this drawing is 25.46 ha, representing 14.19% of the subject property. Locations of development are being specifically chosen to minimize regrading and any associated additional requirements for clearing. While stormwater management facilities have not yet been designed and can therefore not be shown on this drawing, these will not be large facilities and would not increase the total developed area to more than 15% of the property. Important to note is that stormwater management facilities will be located within the development precincts and not the open space or environmental protection lands. All other services will follow the proposed roadways, with the illustrated width of the clearings for these roadways of 26 m on the drawing in **Appendix A** being considerably more than will actually be required for the anticipated 6.5 m paved surface, shoulders, and services.

In accordance with the above, while there will likely be adjustments to the concept plan through the Site Plan process, the expectation remains that the **full** footprint of future development, including all roadways

and services, even on the assumption of the school reaching a maximum population size of 1,800 students, will only occupy ±15% of the subject property.

2. Clarification of Steps that will be Completed as Part of Site Plan Process

Future development will be spread out over a number of years, and will require the submission of individual Site Plans in support of each phase of development. Each Site Plan submission will involve, at a minimum, the following steps:

- preparation of drawings by the architect, following an iterative process with other project team members, including the civil engineer and environmental consultant;
- amongst various supporting reports that will be required, a servicing report from the civil engineer, providing detailed information on grading, sedimentation and erosion controls, stormwater management facility design and location, and other servicing details;
- an EIS in support of that Site Plan, providing any updated natural environment information that may be appropriate to that Site Plan. This EIS will confirm that, on both an individual basis from a cumulative input perspective, the Site Plan addresses each of the recommendations in the original EIS, and incorporates any additional recommendations that are appropriate to that specific area;
- review of the Site Plan application and all supporting information by Town staff; and
- back and forth with Town staff, and adjustments to the Site Plan as may be appropriate, to ensure any staff concerns are being addressed in the finalization of these plans.

It is also expected that the Town will require environmental monitoring and reporting during and immediately following construction to satisfy its Site Plan requirements.

3. Additional Comments on Buffer Widths

Although a minimum buffer of 15 m is prescribed in the EIS around wetland and watercourses other than Henry Marsh (on which a minimum 30 m buffer is prescribed), there is also discussion around the limited extent of development that will occur in relation to each wetland and watercourse feature, and that the average buffer widths will be considerably wider. This is very different than a majority of urban land use applications, where development would ordinarily immediately abut the entire edge of an established buffer (i.e., in a residential subdivision, for example, if a buffer of 30 m was established, that buffer would be delineated with sediment fence, with clearing and regrading activities then following that limit, and with the immediately adjacent lands all becoming a part of roads or built-out lots). Buffer averaging is often used in land planning to ensure the width of a buffer, as a whole, is considerably wider than it would be at its minimum. This was the intent of the EIS, although we recognize no minimum average

buffer widths were prescribed. To clarify this, we therefore amend the recommendations of the EIS to include:

- through the Site Plan process, it is to be ensured that site alterations within development precincts maintain a minimum 30 m average buffer width along those portions of wetlands or protected watercourses which abut those precincts.

Note that Henry Marsh will be buffered to a much larger extent, with the average buffer adjacent to it to be well in excess of 100 m.

The wetlands on and adjacent to the site have not been evaluated by MNRF and therefore have no designation as locally or provincially significant. Wetland evaluations can't be completed at a property level, but must be done at a watershed level; in this jurisdiction, that is typically done by MNRF. It is our opinion that the status of wetlands on the property is immaterial to this application as all wetlands are to be protected with robust buffers consistent with what would be required for a PSW.

4. Further Commentary on Future Bracebridge West Bypass

The Bracebridge West Bypass alignment was determined through a Class Environmental Assessment process undertaken by the District of Muskoka. Although a portion of that future road alignment is within the subject lands, the owner of the Muskoka Royale property was not consulted as part of that process.

The District of Muskoka has been clear that the EA was finalized and approved by the Province, and that the route is more or less fixed. They have noted that they will require either a right-of-way in their favour or conveyance of the future road alignment to them as part of their approval of the Muskoka Royale College, and that roadways for the school must follow that alignment to every extent possible.

While most of the roadways to facilitate access to the proposed school precincts, which follow the future Bracebridge West Bypass alignment, can avoid encroachment into wetlands, the area just south of Precinct D cannot. That being said, there is an existing laneway which hugs the north edge of the deciduous swamp that is located in this area. While the eventual future by-pass will be many times wider than that laneway, the roadway required to service Precincts D and E is generally not. As part of the Site Plan process, we will discuss the opportunity to adjust the future bypass about 20 m to the north in this area to facilitate use of the existing laneway for access to these precincts, minimizing any impacts to that wetland until such time as the future bypass is constructed (which is likely several decades away).

Note that if the roadway to access Precincts D and E can be shifted to coincide with the existing laneway, it will facilitate keeping the driveway within Precinct D in that precinct, and outside of the buffer of a small wetland area to its north; this will also be addressed as part of the Site Plan process.

5. Clarification on Field Survey Program that has been Completed (1999, 2017-2018)

The findings and conclusions of the EIS are the result of background review, agency consultation and detailed field investigations allowing for a thorough understanding of the ecology of the study area. This includes the completion of field survey on a minimum of 23 occasions (12 in 1999, 11 in 2017-2018), per table below. This has allowed for the identification of the natural environmental sensitivities, constraints and development opportunities of the subject property.

Field Tasks	Date(s)	
	1999	2017-2018
Vegetation Communities and Flora (including incidental wildlife and general site conditions observations)	February 15 and 16 July 13, 16, 21, 22 and 23 November 9	November 15, 2017 June 6, 2018
Aquatic Habitat Assessment	February 4 and 23 July 7, 10, 13, and 22 November 9	November 15, 2017 July 28, 2018
Breeding Amphibian Survey	-	May 29, 2018
Breeding Bird Survey	-	June 6 and 21, 2018
Whip-poor-will Surveys	-	June 26 and 28, 2018 July 3, 2018
Bat Maternity Roosting Snag Survey	-	April 11 and 12 2018
Deer Wintering Habitat Survey	-	March 4, 2018

6. Clarification of Details on Amphibian Surveys

Appendix B includes updated mapping showing the locations and numbering of all amphibian surveys in relation to school precincts. It is noted that the referenced methodology (Gartshore *et al* 2004) is consistent with the protocols of the Marsh Monitoring Program methodology (which is based on the Gartshore methodology). Supplementary details on the work completed in association with the auditory survey for amphibians and assessment of vernal pools is provided in **Appendix D**. A single auditory amphibian survey was deemed adequate as this survey occurred subsequent to the decision to protect and buffer all areas of wetland within the property, so was more focused on woodland amphibian breeding habitat. As explained in **Appendix D**, these vernal pools did not persist for very long through the spring of 2018. The survey did not extend through Precinct C or to Precinct D, because our inspections of those precincts indicated that areas of possible development were generally well-drained and no functional vernal pools were identified in the proposed development footprints.

Based on discussions with the peer reviewer, and given that this has been a very wet spring, supplementary surveys of vernal pool features within Precincts A and B are being conducted this spring, and will inform the location and detailed design of facilities within those precincts, as part of the Site Plan process.

7. Clarification of Details on Breeding Bird Surveys

Breeding bird surveys involved wandering transects through proposed development precincts, which had been delineated by the time of these surveys, based on a preliminary constraints analysis. The decision had already been made at that time to protect and buffer all areas of wetland within the property, negating the need for wetland-specific breeding bird surveys, although wetland birds were still recorded incidentally as part of the work that was completed.

Appendix B includes updated mapping showing the location of Whip-poor-will surveys in relation to school precincts. Rock barrens were screened to determine their quality to support such species as Whip-poor-will and Common Nighthawk, with there being an opportunity to focus on Whip-poor-will surveys to the western portion of the subject lands. Our experience is that Common Nighthawk are also heard during Whip-poor-will surveys, with no requirement for separate surveys for that species.

Based on discussions with the peer reviewer, additional Whip-poor-will surveys, also timed to listen for Common Nighthawk, will be completed in 2019, and will extend further east to ensure coverage of Precinct C. That information will further inform detailed design, as part of the Site Plan process.

8. Clarification of Details on Deer Wintering Habitat Assessment

Appendix C includes a figure showing the locations of wandering transects undertaken as part of the March 4, 2018 winter deer survey. Survey results are provided in the table also included in that appendix. This survey occurred when there was a compacted snow cover, and no snowfall over the preceding two week period, providing near ideal opportunities to observe for tracks and scat.

The survey was qualitative, however, there was an effort to use somewhat quantitative descriptors, as included as a footnote to the table in **Appendix C**.

The April, 2018 site visits for bat roosts were being undertaken by other biologists on the project team. The results of the March 4 survey were shared with them prior to their visit, providing an opportunity for them to compare notes and provide feedback on whether they observed anything different, which they did not. No detailed notes on winter deer habitat were taken during those April, 2018 visits.

9. Clarification of Details on Fish Habitat Surveys.

The original stream surveys involved the collection of standardized information following the MNR stream assessment data forms of that time. A large amount of survey data was compiled into a mapped summary form, which made it easier for the reader to understand the quality and character of the watercourses. It is noted that all watercourses at that time were small, with habitat opportunities within even those with year-round flows being limited to a warmwater forage fish community. Unfortunately, due to the passage of time, the originally completed stream survey forms are no longer available.

In 2017 and 2018, field work was undertaken to determine if there were any substantial changes in the character of the watercourses within the property. Although beaver activity has influenced some specific reaches, the general character of the watercourses has not changed throughout the property. All watercourses remain small, and fish habitat opportunities within even those with a year-round flow remain limited to a warmwater forage fish community.

The development precincts have been chosen to generally avoid watercourse features, many of which have also been identified in the report as having riparian wetlands requiring protection. There are a few isolated areas where watercourse crossings will be required for roadways, or where the roadway or other aspects of development will otherwise be in proximity of watercourses. Based on discussions with the peer reviewer, additional aquatic habitat surveys will be completed in each of those areas, following a standardized protocol (MNRF Stream Assessment Protocol), with that information to be used to inform the detailed design, including that for roads and road crossings.

10. Clarification of Details on Rare Flora

Occurrences of rare flora were identified in older (1999) surveys of the property, however specific locations were not recorded. Biologists completing the updated ELC mapping for the property were aware of those earlier records, and did search for those species during the field work; none were found within any of the proposed development precincts.

Based on discussions with the peer reviewer, additional surveys for rare flora will be conducted within each development precinct, with that information to inform the location and detailed design of facilities, as part of the Site Plan process.

11. Clarification of Details on Bat Maternity Roosting Surveys

Appendix B includes mapping showing locations and numbering of bat maternity surveys.

Based on discussions with the peer reviewer, additional snag survey information will be collected within Precinct E, to inform the Site Plan process (that information will simply guide the number of offsetting bat boxes which are to be installed). Additionally, because the extent of such roosting habitat changes over time, updated snag surveys will be completed for any Site Plan application to be made subsequent to 2023.

12. Clarification on Animal Movement Corridors

The EIS states that there are no identified provincially or regionally important wildlife corridors in relation to this property. Provincial-scale corridors are those covering very large geographic areas, such as the Oak Ridges Moraine, Niagara Escarpment and Frontenac Arch. Regionally important wildlife corridors are typically identified within more built-up areas of the Province, like Southern Ontario, and would include, for example, the valleylands of major river systems such as the Humber and Credit.

Muskoka remains a very porous landscape, where animal movement is typically unimpeded by urban development/sprawl. Subsequent to development, the subject lands will remain part of a very porous landscape.

13. Clarification on the Implementation of Mitigation Measures

The EIS includes a number of mitigation measures to ensure protection against adverse environmental impacts during project implementation. Those recommendations can and will be added to in the EIS reports to be completed as part of the Site Plan process, where they can then be responsive to the detailed design. We will ensure that recommendations to be made as part of the Site Plan process do not use discretionary language, and can be made conditions of those approvals.

Based on discussions with peer reviewers, exclusionary fencing will be specifically considered, where there are warrants for its installation, in the recommendations to be made as part of the Site Plan process.

14. Clarification with respect to References

There were two outdated references cited in the reference section of the report. In both cases, the more up-to-date versions of those documents were used in our work. In this regard, references to the Provincial Policy Statement should have been to the 2014 document. Reference to the Atlas of the Breeding Birds in Ontario should have been to the 2009 document.

* * * * *

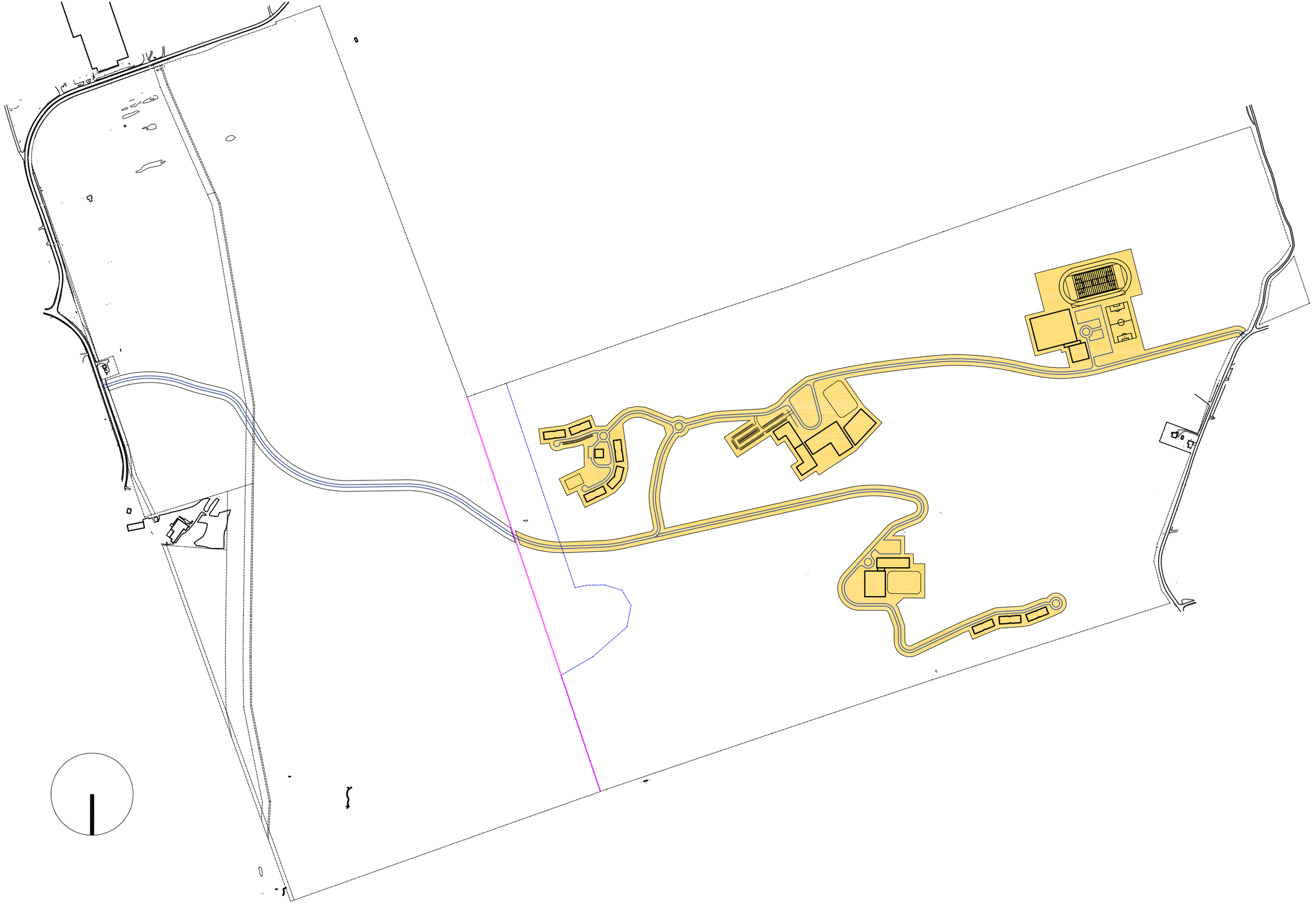
In closing, I trust this provides the peer reviewer with the additional information they were seeking in order to finalize their peer review. Please do not hesitate to contact me should the Town or peer reviewer require anything additional.

Yours truly,

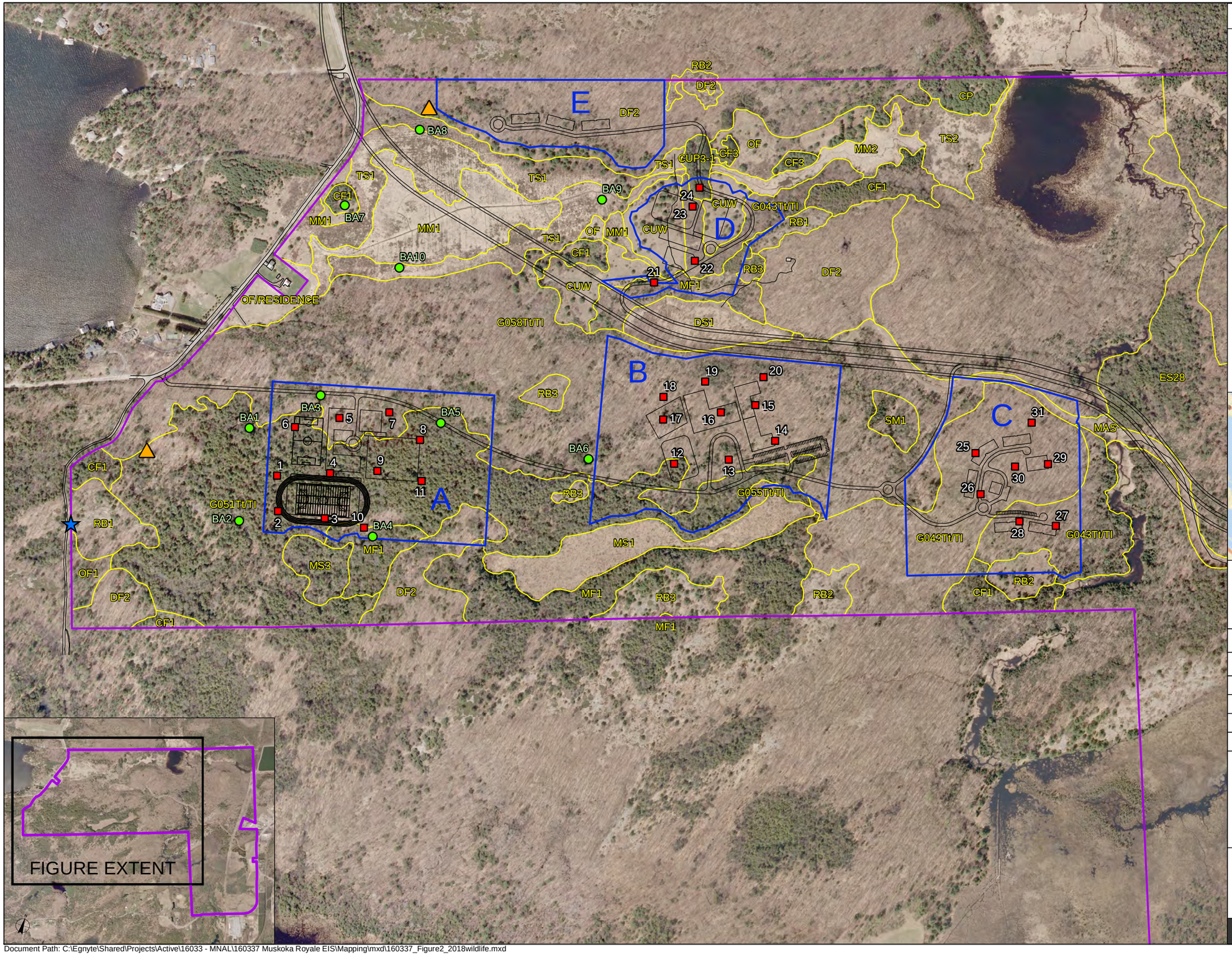
MICHALSKI NIELSEN ASSOCIATES LIMITED
Per:

Gord Nielsen, M.Sc.
Ecologist
President

APPENDIX A – ARCHITECT'S DRAWING SHOWING EXTENT OF CLEARING TO ACCOMMODATE EXISTING CONCEPT PLAN, ON FULL BUILD-OUT



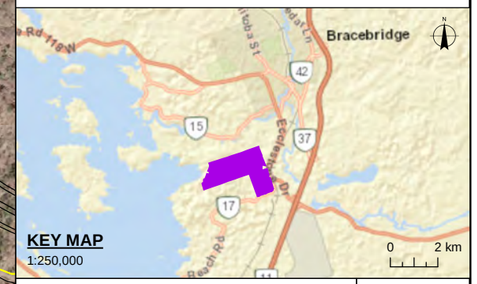
APPENDIX B – SUPPLEMENTARY MAPPING SHOWING WILDLIFE SURVEY LOCATIONS IN RELATION TO SCHOOL PRECINCTS



LEGEND

- Whip-Poor-Will Survey Station
- Snag Tree Survey Plot Centre
- Breeding Amphibian Survey Station
- Barred Owl
- Site Plan
- ELC Community
- Development Area
- Study Area

DRAFT



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metres

N

CLIENT: Gord Nielsen

PROJECT: Muskoka Royale

PROJECT NO.	160337	REVISION:	3
DATE:	Sep 18/18	SCALE:	1:7000
DRAWN:	BE	DATUM:	NAD83
CHECKED:	DJ	PROJECTION:	UTM 17

PALMER ENVIRONMENTAL CONSULTING GROUP INC.

Existing Environmental Conditions

Figure 2

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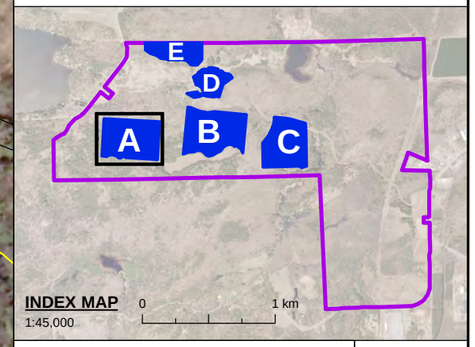
LEGEND

- Whip-Poor-Will Survey Station
- Snag Tree Survey Plot Centre
- Breeding Amphibian Survey Station
- Barred Owl
- Site Plan
- ELC Community
- Development Area
- Study Area

DRAFT



0 25 50 75
metres

N

CLIENT: Gord Nielsen

PROJECT: Muskoka Royale

PROJECT NO.	160337	REVISION:	2
DATE:	Sep 18/18	SCALE:	1:1500
DRAWN:	BE	DATUM:	NAD83
CHECKED:	DJ	PROJECTION:	UTM 17

PALMER ENVIRONMENTAL CONSULTING GROUP INC.

Development Area A - Existing Environmental Conditions

Figure 2a

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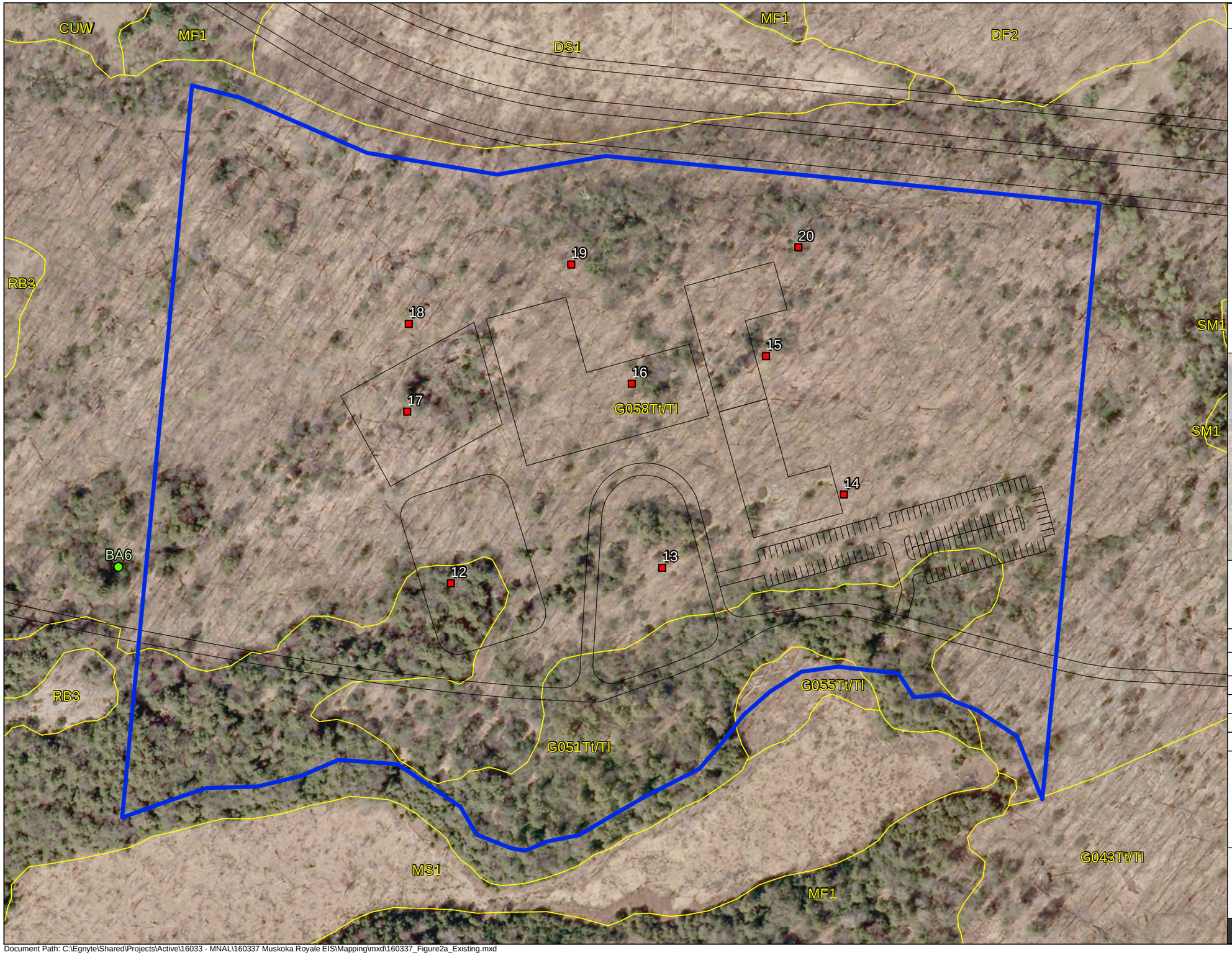

LEGEND

- Whip-Poor-Will Survey Station
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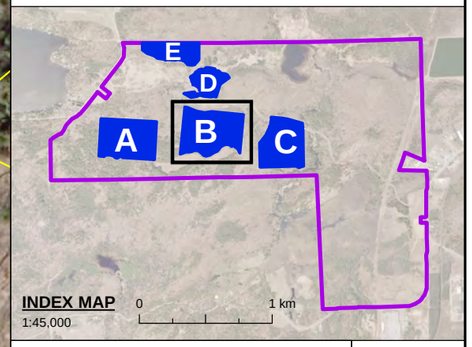
- Study Area

DRAFT



INDEX MAP
1:45,000
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metres

N

CLIENT: Gord Nielsen

PROJECT: Muskoka Royale

PROJECT NO.	160337	REVISION:	2
DATE:	Sep 18/18	SCALE:	1:1800
DRAWN:	BE	DATUM:	NAD83
CHECKED:	DJ	PROJECTION:	UTM 17

PALMER ENVIRONMENTAL CONSULTING GROUP INC.

Development Area B - Existing Environmental Conditions

Figure 2b

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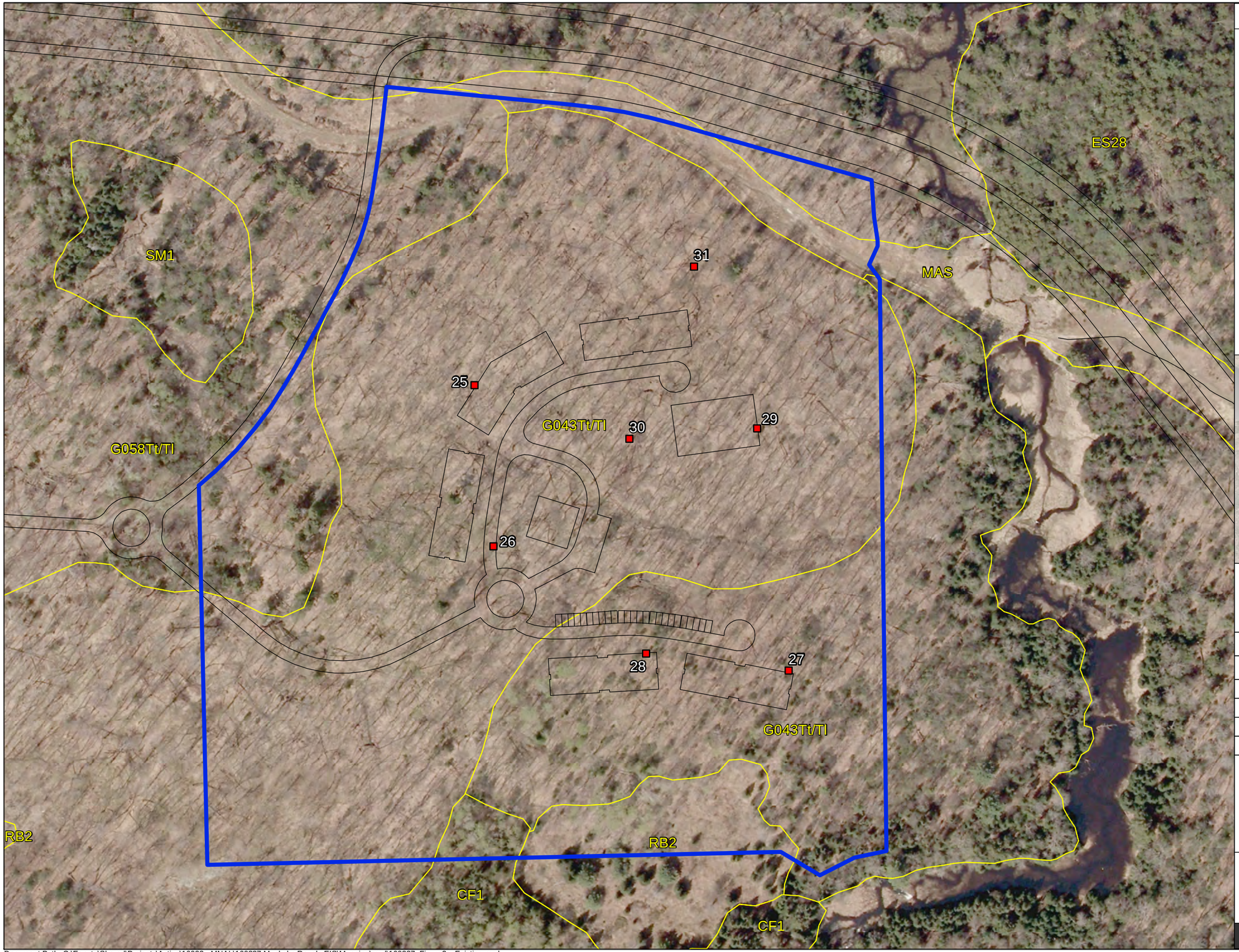

LEGEND

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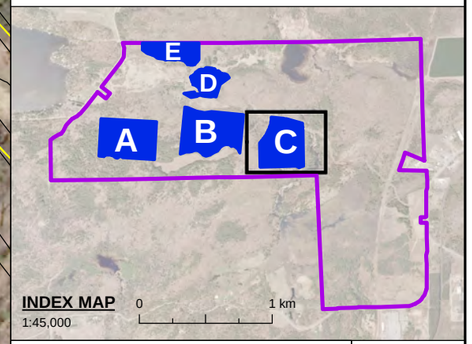
- Development Area
- Study Area

DRAFT



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metres

N

CLIENT: Gord Nielsen

PROJECT: Muskoka Royale

PROJECT NO.	160337	REVISION:	2
DATE:	Sep 18/18	SCALE:	1:1800
DRAWN:	BE	DATUM:	NAD83
CHECKED:	DJ	PROJECTION:	UTM 17

PALMER ENVIRONMENTAL CONSULTING GROUP INC.

Development Area C - Existing Environmental Conditions

Figure 2c

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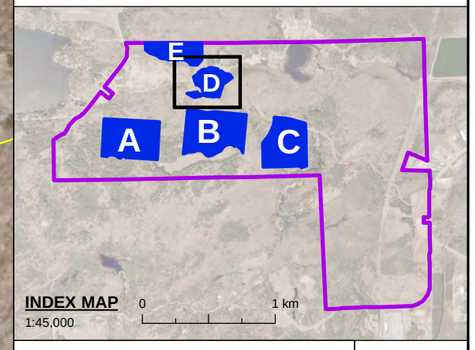
LEGEND

- Whip-Poor-Will Survey Station
- Snag Tree Survey Plot Centre
- Breeding Amphibian Survey Station
- Barred Owl
- Site Plan
- ELC Community
- Development Area
- Study Area

DRAFT



INDEX MAP 1:45,000 0 1 km

0 25 50 75 metres

N

CLIENT: Gord Nielsen

PROJECT: Muskoka Royale

PROJECT NO.	160337	REVISION:	2
DATE:	Sep 18/18	SCALE:	1:1500
DRAWN:	BE	DATUM:	NAD83
CHECKED:	DJ	PROJECTION:	UTM 17

PALMER ENVIRONMENTAL CONSULTING GROUP INC.

Development Area D - Existing Environmental Conditions

Figure 2d

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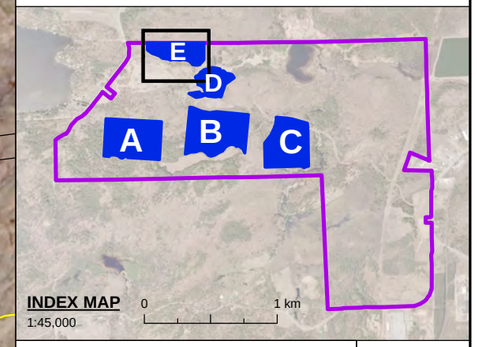
LEGEND

- Whip-Poor-Will Survey Station
- Snag Tree Survey Plot Centre
- Breeding Amphibian Survey Station
- Barred Owl
- Site Plan
- ELC Community
- Development Area
- Study Area

DRAFT



INDEX MAP 1:45,000 0 1 km

0 25 50 75 metres

N

CLIENT: Gord Nielsen

PROJECT: Muskoka Royale

PROJECT NO.	160337	REVISION:	2
DATE:	Sep 18/18	SCALE:	1:1500
DRAWN:	BE	DATUM:	NAD83
CHECKED:	DJ	PROJECTION:	UTM 17

PALMER ENVIRONMENTAL CONSULTING GROUP INC.

Development Area E - Existing Environmental Conditions

Figure 2e

Document Path: C:\Egnyte\Shared\Projects\Active\16033 - MNAL\160337 Muskoka Royale EIS\Mapping\mxd\160337_Figure2a_Existing.mxd

APPENDIX C – WINTER DEER SURVEY OF MARCH 4, 2018

Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

March 4, 2018 Deer Survey

Notes: Enter map notes

Legend

- Assessment Parcel
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System
- Ecoregion

Wetland
- Provincially Significant Wetland Evaluated
- Non - Provincially Significant Wetland Evaluated
- Unevaluated Wetland

Area of Natural Heritage & Scientific Interest (ANSI)
- Provincially Significant Life Science ANSI
- Provincially Significant Earth Science ANSI

Greenbelt Plan
- Boundary
- River Valley Connections

Land Use Designations
- Protected Countryside
- Towns and Villages
- Hamlets
- Urban River Valley
- Specialty Crop Area

Niagara Escarpment Plan (NEP)
- Boundary
- Parks and Open Space System

Land Use Designations
- Escarpment Natural Area
- Escarpment Protection Area
- Escarpment Rural Area
- Mineral Resource Extraction Area
- Escarpment Recreation Area
- Urban Area
- Minor Urban Centre

Oak Ridges Moraine Conservation Plan (ORM)
- Boundary

Land Use Designations
- Natural Core Area
- Natural Linkage Area
- Countryside Area
- Rural Settlement
- Palgrave Estates Residential Community
- Settlement Area

0.3 0 0.16 0.3 Kilometers

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

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March 4, 2018 Walking transect through northwest portion of property.

Transect	Quality of Cover	Evidence of Tracks (in snow)[1]	Evidence of Scat[1]	Evidence of Browse[1]
1 – 2	Mixed forest, poor winter cover	Moderate	Moderate	Moderate
2 – 3	Generally mixed forest, fair winter cover	Moderate	Moderate	Moderate
3 – 4	Dense hemlock, excellent winter cover	Moderate	Moderate	Moderate
4 – 5	Primarily dense hemlock, good to excellent winter cover	Moderate	Moderate	Low
5 – 6	Generally mixed forest, limited winter cover	Moderate	Moderate	Moderate
6 – 7	Primarily dense hemlock, good to excellent winter cover	Moderate	Moderate	Moderate
7 – 8	Dense hemlock, excellent winter cover	Moderately high	Moderately high	Moderately high
8 – 9	Generally mixed forest, fair winter cover	Moderate	Moderate	Moderate
9 – 10	Mixed forest, poor winter cover	Moderate	Low	Moderate
10 – 11	Generally mixed forest, fair to good winter cover	Moderate	Moderate	Moderate
11 – 12	Dense hemlock, excellent winter cover	Moderate	Moderate	Moderate
12 – 13	Dense hemlock, excellent winter cover	Moderate	Moderate	Moderate
13 – 14	Dense hemlock, excellent winter cover	Moderate	Moderate	Moderate
14 – 15	Generally mixed forest, fair winter cover	Low	Low	Low

1 Assessment was qualitative, but descriptors are based on approximated usage at the time of survey, as follows.

Evidence of Tracks (in snow)

Low: sets of tracks generally not more frequent than one every 20 m
Moderate: sets of tracks generally encountered 10 m to 20 m apart
Moderately high: tracks generally encountered 5 m to 10 m apart and/or overlapping
High: sets of tracks frequent and overlapping

Evidence of Scat

Low: typically 10 m+ distance between pellets
Moderate: typically 5 m – 10 m distance between pellets
Moderately high: typically 2 m – 5 m distance between pellets
High: typically <2 m distance between pellets

Evidence of Browse

Low: generally <1 browsed plant in a 5 m radius
Moderate: generally 1 – 2 browsed plants in a 5 m radius
Moderately high: generally 4 – 5 browsed plants in a 5 m radius.
High: extensive browse

APPENDIX D – SUPPLEMENTARY DETAILS RELATING TO AMPHIBIAN SURVEYS

Muskoka Royale – 2018 Vernal Pool Survey Results

1. Introduction

Amphibians are common and widespread across Muskoka. Several species were recorded at wetlands on the subject property during the evening auditory surveys and other daytime surveys. Amphibians will congregate to breed in woodland pools and wetlands with standing water that persists into early summer or long enough for tadpoles to emerge.

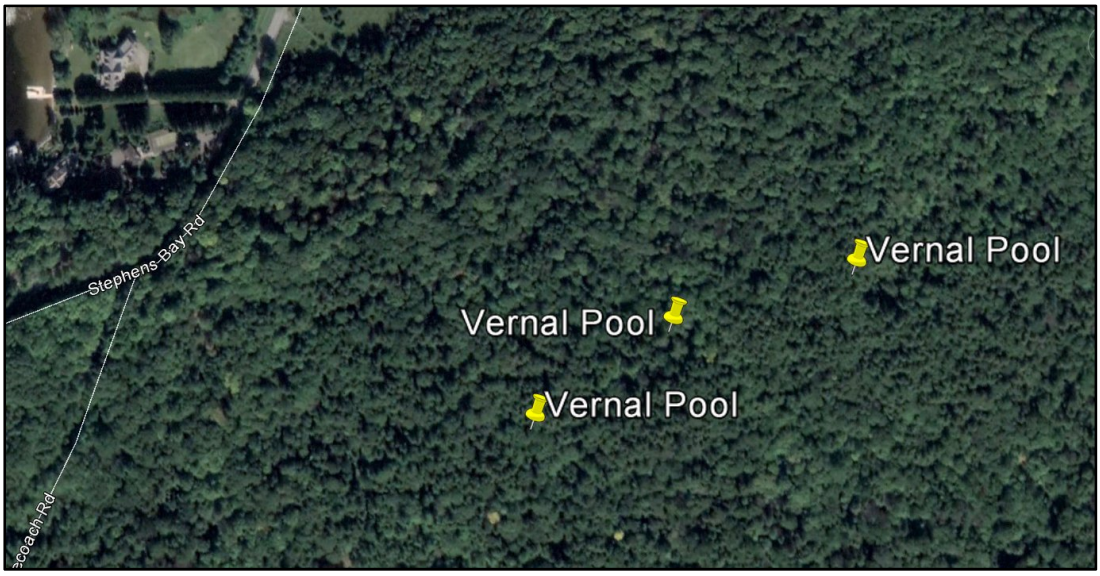
2. Field Investigations

In addition to fall season daytime surveys and spring nocturnal auditory surveys, a daytime assessment of the vernal pools in the forested areas on the property was conducted concurrently with the Ecological Land Classification (ELC) survey on June 6, 2018 at the proposed precinct development areas on the property. Vernal pools were assessed to determine the potential breeding habitat for amphibians and the permanence of the pools. The goals was to survey for occurrences and abundance of egg masses, tadpoles, and adults, as well as standing water levels and pool permanency.

3. Results

Due to the undulating bedrock controlled topography with shallow soils particularly in Development Area A, there are several vernal pools that were observed to support water to varying degrees through the field season. Many were seen to be inundated in the fall of 2017 and spring of 2018. The same pools were observed to support only “saturated” conditions (i.e., very wet moss and soils substrate) but lacking standing water during the June 2018 survey that would be required for the successful development and emergence of tadpoles. During subsequent site visits in late July following heavy rains, some standing water was again present. These conditions can be attributed to factors that include: localized depressions on shallow soils over bedrock with small catchments that allow for short term capture of surface water run off (e.g., during spring melt and heavy rain events); and, fractured bedrock that allows for slow drainage of the pools combined with small catchments that do not provide for sustained surface water levels. This precluded the necessary conditions for the development of functional vernal pools that would allow for successful breeding amphibian habitat. The vernal pools and small wetland inclusion areas in Development Area A and B were surveyed in the spring of 2018 and no calling amphibians were recorded. There were three vernal pools that were assessed in June 2018 in the Coniferous Forest (CF1) community and are shown on **Map A**.

During the June 6 survey, there were no amphibians, tadpoles or eggs observed in the vernal pools. The water was not deep enough for amphibians to use the pools for breeding (**Photo 1 and 2**). These results indicate that the identified vernal pools do not provide breeding amphibian habitat.



Map A. Three vernal pool locations observed on June 6, 2018 in CF1.

Photo 1. Vernal Pool in CF1

Photo 2. Vernal Pool in CF1

APPENDIX "B"

Peer Review, July 4, 2019, Hutchinson Environmental Sciences Ltd.

Hutchinson
Environmental Sciences Ltd.

1-5 Chancery Lane, Bracebridge, ON P1L 2E3 | 705-645-0021
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July 4, 2019

Mr. Matt Holmes
Manager of Planning Services
Town of Bracebridge
1000 Taylor Court
Bracebridge, ON
P1L 1R6
mholmes@bracebridge.ca

Dear Mr. Holmes:

Re: Peer Review of Environmental Impact Statement and Species at Risk Assessment for Muskoka Royale Development Inc.

We have completed our peer review of environmental reports submitted to the Town of Bracebridge as part of Official Plan and Zoning Amendment applications by Muskoka Royale Development Inc. The environmental reports consist of an Environmental Impact Statement (EIS), Species at Risk (SAR) Assessment, and a Preliminary Servicing Report for the Muskoka Royale College subject lands, located between Stephens Bay Road and Stagecoach Road to the east and Ecclestone Drive to the west (legally described as Lots 7 and 8 and part of Lots 6, 9 and 10, concession 12, Muskoka North Ward, Town of Bracebridge, District Municipality of Muskoka).

Our peer review was conducted through a review of the environmental reports, additional background material, relevant policy and legislation, as well as a site visit to the subject lands with Gord Nielsen (Michalski Nielsen Associates Ltd. [MNAL]) on May 7, 2019. In particular, we reviewed the following documents to support the Town of Bracebridge's analysis of the amendment applications:

- MNAL (2018) EIS Muskoka Royale College,
- MNAL (2018) SAR Assessment Muskoka Royale College,
- Pinestone Engineering Ltd. (2018) Muskoka Royale Campus Preliminary Servicing Report (with respect to the ecological implications of proposed stormwater management),
- Snyder Architects 2018 Site Concept,
- Ministry of Natural Resources and Forestry (MNRF) correspondence re: SAR review, dated March 19, 2019,
- Additional background material provided to us by the Town of Bracebridge (Town of Bracebridge Staff Report PD024-19 dated April 3, 2019; Public Works Department Memorandum dated March 5, 2019, re: Official Plan and Zoning Amendment Applications D09-08/18 and D14-17/18, Muskoka Royale Campus; District Municipality of Muskoka 2005 Bracebridge West Transportation Corridor Class Environmental Assessment. Environmental Study Report),
- Additional background material provided to us by MNAL (Supplementary Information on the Plans for Muskoka Royale College),

- Town of Bracebridge Official Plan (2013),
- District Municipality of Muskoka Official Plan (2014),
- AECOM (2011) District Municipality of Muskoka - Muskoka Official Plan Review Background Study: Urban Centres Natural Heritage Review,
- Bird Studies Canada et al. (2006) Ontario Breeding Bird Atlas,
- MNRF's Natural Heritage Information Centre records of SAR and natural areas, MNRF (2014) Significant Wildlife Habitat Mitigation Support Tool and (2015) Significant Wildlife Habitat Criteria Schedules for Ecoregion 5E, and
- Provincial and federal policy and legislation (Ontario: 2014 Provincial Policy Statement, *Endangered Species Act*; federal: *Fisheries Act*, *Species at Risk Act*).

On May 13, 2019, Hutchinson Environmental Sciences Ltd. (HESL) submitted a draft peer review of the proposed Muskoka Royale Development to the Town of Bracebridge, based on our review of the above noted documents and site visit on May 7, 2019.

Our peer review focused on determining whether the three environmental reports

- contain sufficient information on the natural environment of the area (including detailed documentation of natural features, ecological functions, and natural and human-made hazards, environmental sensitivities and constraints, and potential impacts of the proposed development on these features, functions, and hazards);
- use the correct methodologies to gather the information (e.g., that follow industry standards and apply appropriate scientific approaches); and
- make sound conclusions and recommendations, based on the best available information, so that the development proposal avoids negative impacts on significant natural heritage features and their ecological functions and conforms with applicable environmental policies and legislation.

Following submission of our draft peer review, we met with the proponent's representatives (MNAL, Palmer Environmental Consulting Group, and the Jones Consulting Group), the Town of Bracebridge and the District Municipality of Muskoka on May 17, 2019 to discuss the draft peer review and outline future steps in the review and permitting process. Three actions arose from that meeting:

1. Staff from the District of Muskoka informed the peer review team that, because only the provincial ministry with jurisdiction can delineate specific SAR habitat and provide recommendations to prevent harm or destruction, the portion of the EIS respecting SAR habitat was assessed by the MNRF. We were therefore directed by the Town of Bracebridge to change the scope of our review to exclude SAR issues and our associated comments, as MNRF had already conducted a SAR review of the EIS in March 2019. Reference to SAR from our original May 13, 2019 report has therefore been removed from this document.

2. MNAL presented several items of clarification and so our original comments were amended accordingly in this document.

3. MNAL provided additional information and commitments which we have reviewed as part of the follow up to our original comments.

While MNAL addressed some of our original peer review recommendations verbally during the meeting, we have left those recommendations in the updated peer review (and noted them in an attached

disposition table), to ensure there is a written record of the process and to provide transparency.
Following the May 17, 2019 meeting, MNAL provided the Town with "Clarifications and Supplementary Technical Information on our Environmental Impact Study for Muskoka Royale Collection; Our File 3517" on May 28, 2019.

We present our peer review in the following letter report. We begin by providing a brief summary of the subject property and proposed development, then highlight specific issues identified in the EIS sorted by subject matter. Stormwater servicing presented in the Servicing Report is preliminary, as expected at this stage of development. As a result, our assessment focuses on stormwater-related issues discussed within the EIS. Following each specific issue, we have compiled our response to the supplementary information from MNAL provided on May 28, 2019. A disposition table to track the status of our original peer review recommendations is attached.

In Section 3 of the peer review, we determine whether the report meets the three review criteria and conclude by summarizing our overall findings on whether the proposed development is likely to have negative impacts on significant natural heritage features and their ecological functions.

1. Background

Muskoka Royale Development Inc. plans to develop a private educational facility on the western portion of the property (the subject lands). The facility would consist of an elementary school, secondary school, on-site living accommodations, and a multi-use recreational centre, spanning the approximately 180 hectares that comprise the subject lands.

The subject lands are located within the Town of Bracebridge's urban centre and are currently designated as Open Space and zoned as Open Space Two (OS2), in part and Environmental Protection Wetlands One (EPW1), in part. The amendment applications submitted by Muskoka Royale Development Inc. propose to create a new South Bracebridge Institutional Designation and rezone the subject lands from OS2 to Institutional Special-17 (I-17) in part and Open Space 1 Special-8 (OS1-8) in part, and from EPW1 to Environmental Protection Wetland One Special – 1 (EPW1-1), to allow for the development of the private educational facility.

The subject lands are predominantly forested, with numerous wetlands, watercourses and rock barrens throughout the property. The topography of the area is varied, ranging from poorly drained lowlands to moderately and steeply sloped uplands.

The development is designed within five precincts on the property and would proceed over several project phases:

- Precinct A, consisting of the secondary school, is located in the south-central portion of the property and would be constructed in the first phase,
- Precinct B, consisting of the sports complex, is located in the southwest of the property and would be constructed in the first phase,
- Precinct C, consisting of the secondary student and staff residence, is located in the southeast of the property and would be constructed in the first phase,
- Precinct D, consisting of the elementary school, is located in the north-central portion of the

property and would be constructed in a future phase, and
- Precinct E, consisting of the elementary student and staff residence, is located in the northwest of the property and would be constructed in a future phase.

The educational facility would be accessed from District Road 118 by an internal roadway largely following the alignment previously approved for the West Transportation Corridor (also known as the Bracebridge West Bypass). An emergency access road would also be constructed linking Precinct B with Stephens Bay Road. The internal road system would be constructed in phases, with roads associated with Precincts A, B and C and the emergency exit developed during the first phase of development.

2. Specific Comments

2.1 Development Footprint

The EIS emphasizes that the development is designed to fit in with the distinct natural landscape of Muskoka by avoiding more ecologically significant areas, minimizing the extent of disturbance and maintaining "the diversity and beauty of this landscape" (p. 3). As such, it is stated that on full build-out, the development will occupy only 15% of the subject lands. Yet, according to the Snyder Architects site concept, the total area of the precincts (i.e., the total developable area) will be 45 ha, which equals 25% of the approximately 180 ha total area of the subject lands. Furthermore, it appears that the area taken up by the internal roadway, as well as other infrastructure (such as sanitary sewers, watermains and stormwater management ponds), has not been included in the calculation of total development footprint. We agree that the development is of limited scale within this landscape but seek clarity on the percent footprint for transparency.

Original Recommendation #1

Please clarify how the total development footprint is calculated, and include the area taken up by the internal roadway and other infrastructure (e.g., sanitary sewers, watermains, stormwater management ponds).

Additional comments on Recommendation #1 based on supplemental information:

The concept plan shown in Appendix A of the MNAL May 28 submission differs from the concept plans included in the EIS and submitted as part of the application package (i.e., Snyder Associates Inc., August 2018), in that it shows a smaller development area (or total area of disturbance), taken as "a minimum 10 m cleared area" around all buildings, roadways, parking areas, playing fields etc. at full build-out. The Appendix A concept plan development footprint does not occupy the entire total developable area indicated in the Snyder Associates Inc. site plan for each precinct, which is the area we used to calculate the total developable area. It seems that the proposed site plan currently includes a footprint of ~15% while development of the entirety of each precinct equates to ~25% footprint of the site. However, as the smaller footprint is based on "a minimum 10 m cleared area" it is unclear what the maximum cleared area within each precinct could be.

To address recommendation #1, please clarify what the maximum cleared area around all facilities and infrastructure within precincts would be at full build-out and confirm the related percent footprint. We recognize that the percent footprint is relatively low but seek to confirm the approach for clarity.

Updated Recommendation #1

Please clarify what the maximum cleared area around all development within precincts would be at full build-out and provide this percent footprint.

The EIS mainly focuses on potential impacts of the precinct developments on the natural environment, with limited discussion of the impact of internal roads or other infrastructure (i.e., sanitary sewers, watermains and stormwater management ponds), some of which extend beyond the identified borders of the precincts. These development components should be mapped on a figure and a thorough assessment of potential impacts and mitigation provided.

Original Recommendation #2

Please map all development components (including sanitary sewers, watermains and stormwater management ponds) on a figure and provide a thorough assessment of the potential impacts and recommended mitigation measures for these components in the text.

Additional comments on Recommendation #2 based on supplemental information:

MNAL has emphasized the importance and usefulness of the site plan process as part of permitting the proposed development, as development will be spread out over several years and will require submission of individual site plans in support of each phase of development. We are optimistic that identification of issues in the EIS will help scope the requirements of future environmental study completed in support of individual site plans and that outstanding issues can be followed through to site plan to ensure compliance. The EIS, however, is the only documentation available for the peer reviewers to use in assessing the proposed development and anticipated impacts against relevant policy and legislation. As a result, a detailed characterization of natural heritage features and functions, impact assessment and mitigation measures to determine the feasibility of the currently proposed development plan is nonetheless required at this stage of the process to address some of the recommendations.

Recommendation #2 is considered resolved.

The EIS states that each precinct has been designed to accommodate “some potential for future growth” while ensuring that “facilities are not crowded within it, and that the presently forested character of these areas can be maintained” (p. 62). We can appreciate that such a large development requires staging, but it also presents ambiguity when attempting to assess impacts. A full description of the future development is needed to ensure all potential impacts are adequately considered and to avoid cumulative effects over time.

Original Recommendation #3

Please confirm that the environmental impacts associated with future development within the precincts will be assessed separately in the future or base the projection of impacts on a “full build-out” to the edges of the precincts.

Additional comments on Recommendation #3 based on supplemental information:

MNAL stated that individual site plans will consider site-specific impacts for each precinct. It is still unclear whether impacts are calculated from the edge of each precinct or from the edge of the development footprint (e.g., 10 m cleared area).

Updated Recommendation #3

Please clarify whether effects are calculated from the edge of each precinct or from the edge of the development footprint.

2.2 Buffers

Natural buffers around sensitive features (primarily wetlands and watercourses) have been incorporated into the layout of the development, to protect these features from negative impacts. The EIS applies a 30 m buffer around Henry Marsh, in the northeast corner of the subject lands, as this wetland is large, provides important wildlife habitat and potential overwintering habitat for Blanding's Turtle. A minimum 15 m buffer has been applied around other wetlands and watercourses on the property, which is deemed appropriate given "the limited development that is proposed" (p. 46). However, no further justification of this distance, in relation to the natural heritage features and functions on site, is provided. The effectiveness of different buffer widths varies depending on what natural features and functions they are intended to protect, as well as site conditions such as hydrologic dynamics, slope, soil type, and vegetation composition. The 15 m buffer should be thoroughly assessed in this context. For example, is the buffer meant to protect water quantity, water quality, or core habitat? Is it meant to act as a screen against human disturbance? A 30 m buffer is generally more effective than a 15 m buffer at achieving most of these buffer functions. Furthermore, wetlands on site appear to be functionally linked through wildlife usage, and surface water and groundwater connections. We therefore believe that a minimum 30 m buffer around all wetlands and watercourses on site would be appropriate.

Original Recommendation #4

Please justify why a 15 m buffer around most wetlands and all watercourse will adequately protect these natural features and their ecological functions. Please explain what the primary functions of these buffers will be and how they will achieve these functions given site conditions. We recommend referring to the Beacon Environmental (2012) document for guidance on ecological buffers[1] and recommend that the final selection of buffers and rationale be reviewed and that a minimum buffer of 30 m implemented around wetlands and watercourses.

Additional comments on Recommendation #4 based on supplemental information:

In the May 28 submission, MNAL proposed to apply buffer averaging, by maintaining "a minimum 30 m average buffer width along those portions of wetlands or protected watercourses which abut…precincts". The use of average buffering, however, suggests that there may be instances where the buffer width is less than 30 m, down to a minimum 15 m buffer width proposed in the EIS. MNAL has not addressed recommendation #4 concerning this issue. In particular, no ecological justification for the minimum 15 m buffer width has been given based on site-specific conditions and intended goals of the buffer (e.g., is the buffer meant to protect water quantity? water quality? core wildlife habitat?).

[1] *Beacon Environmental. 2012. Ecological Buffer Guideline Review. Prepared for Credit Valley Conservation.*

We recognize that Henry Marsh is afforded a relatively large buffer (i.e., >100 m) given the proposed site layout and a minimum 30 m average minimum buffer will apply along other wetlands and watercourses adjacent to development. However, because of the apparent functional connection among wetlands on site (i.e., based on wildlife usage and surface and groundwater linkages) we believe it is appropriate to apply a minimum 30 m buffer around all wetlands and watercourses on site, rather than the 15 m suggested in the EIS (and rather than the minimum average buffer suggested in the May 28 supplementary information document).

We request that any proposed buffers less than 30 m be justified based on an examination of site-specific conditions and natural heritage features and functions, anticipated development impacts and literature-based buffer guidance.

We agree that wetlands on and adjacent to the site have not been evaluated by MNRF and thus have no designation as locally or provincially significant. We also acknowledge that formal wetland evaluations to identify provincially significant wetlands are not commonly completed as part of development applications.

Updated Recommendation #4

We recommend a minimum 30 m buffer around all wetlands and watercourses. If the 15 m buffer width is to be applied, we reiterate the need to provide ecological justification as per our original recommendation.

Minimum buffer distances are generally measured from the edge of each precinct in the EIS. However, for Precincts B and D, the EIS discusses an average buffer of 30 m from wetlands and/or streams to proposed works within the precincts (see 6.2.2 Precinct B, 6.2.4 Precinct D in the EIS), emphasizing that facilities will be set further back from the precinct boundaries in these areas. In such cases, the 30 m distance between sensitive features and precinct facilities can only function as a true buffer if it remains vegetated, otherwise it represents a setback, not a natural buffer. The EIS should clarify this point, and, if natural buffers will extend into development precincts, explain how they will be preserved despite potential for future growth within these precincts. This comment reiterates our earlier concern under 2.1 regarding the lack of information in the EIS on plans to retain forest cover within precincts under future development scenarios.

Original Recommendation #5

Please clarify whether buffers will extend into development precincts, and if so, how they will be preserved as vegetated areas despite future potential growth. We recommend that all buffers be zoned as Environmental Protection to avoid encroachment of development into them in future.

Additional comments on Recommendation #5 based on supplemental information:

See supplemental information on Recommendation #4. Additionally MNAL mentioned at the May 17, 2019 meeting that all buffers would be zoned as Environmental Protection and would be outside development precincts.

Updated Recommendation #5

We recommend that all buffers be zoned as Environmental Protection to avoid encroachment of

development into them in future, and that the EIS be updated accordingly.

The internal roadways will impinge on some wetlands within the subject lands, but the EIS does not discuss this issue in detail. The EIS points out that

"the portion of the internal road network that follows the future Bracebridge West Bypass route generally avoids areas of wetland constraint, except where it occurs within the edge of an area of deciduous swamp (see the area just north of the future elementary school [Precinct D], as shown on Figures 8 and 9)" (p. 61).

However, these figures also show the internal road passing through the deciduous swamp to the south of Precinct D, within the alignment of the future bypass route. While it may not be possible to avoid this wetland (Photograph 1), since the bypass route has already been approved through a Class EA process, it should be acknowledged that the road will cross this wetland, and specific recommendations should be made in the EIS on how to reduce associated impacts on this natural feature. During our site visit, Gord Nielsen explained that MNAL would be recommending an alternative route for the bypass route and internal roadway along the northern portion of the adjacent wetland (ELC Community DS1); we believe this alternative should be explicitly recommended within the EIS.

Original Recommendation #6

Please include any recommendations on alternative routing and mitigation measures for the internal road proposed to pass through the deciduous swamp south of Precinct D.

Additional comments on Recommendation #6 based on supplemental information:

We support MNAL's suggested approach to try to avoid placement of the roadway servicing Precincts D and E through the deciduous swamp (MNAL indicated that "as part of the Site Plan process, we will discuss the opportunity to adjust the future bypass about 20 m to the north in this area to facilitate use of the existing laneway for access to these precincts, minimizing any impacts to that wetland until such time as the future bypass is constructed"). We recommend that MNAL's commentary provided under #4 of its supplemental information be included in an updated version of the EIS so that the supporting information is easily accessible to interested stakeholders and recommendations are readily brought through to the site plan process.

Recommendation #6 is considered resolved.

The road into Precinct D also appears to impinge on the 15 m buffer around the meadow marsh to the northwest of the road and is located outside of the defined Precinct Development Area (see Figure 9D). This routing should be clarified.

Original Recommendation #7

Please clarify the route of the road into Precinct D and explain why mapping shows it within the 15 m wetland buffer and outside the defined Precinct Development Area.

Additional comments on Recommendation #7 based on supplemental information:

The route and mapping have not been clarified.

Updated Recommendation #7 – no change

Please clarify the route of the road into Precinct D and explain why mapping shows it within the 15 m wetland buffer and outside the defined Precinct Development Area.

Photograph 1. A view of wetland (DS1) where the Bypass Route and internal roadway are proposed.

2.3 Field Surveys

The findings and conclusions of the EIS are based on a combination of background review, agency consultation and field investigations conducted in 1999 and 2017-2018. A summary of field survey effort (e.g., type of surveys conducted, dates of surveys) is not presented in the EIS but is provided by MNAL in the supplementary information.

New Recommendation #8

We recommend that the table summarizing field survey effort be included in an updated version of the EIS so that reviewers have a clear understanding of the studies supporting the application.

2.4 Amphibians

The EIS indicates that amphibian breeding surveys were conducted on May 29, 2018 following Gartshore et al. (2004). This reference is not listed in the References section and thus it is not clear what methodology

was used for amphibian surveys. We are concerned that a single survey is not sufficient to adequately characterize existing amphibian communities on site. The commonly used Marsh Monitoring Program (2009)[2] recommends three surveys during spring and early summer, at least 15 days apart, to detect all amphibian species present, since different species are active at different times (e.g., the peak breeding period for Chorus Frog and Wood Frog is mid to late April; the peak period for Spring Peeper, American Toad and Northern Leopard Frog is mid to late May; and the peak period for Gray Treefrog, Mink Frog, Green Frog and Bullfrog is mid to late June).

Original Recommendation #9

Please explain the methodology used to survey amphibians and justify why a single survey is sufficient to characterize the amphibian community on the subject lands or complete additional surveys.

Additional comments on Recommendation #9 based on supplemental information:

MNAL justifies a single auditory amphibian survey because all wetlands on the property will have buffers of at least 15 m to 30 m. We recommend that three surveys be completed per Marsh Monitoring Program methodology or, in the absence of additional surveys, the EIS should assume that the wetlands and appropriate vernal pools constitute Significant Wildlife Habitat according to defined criteria in MNRF (2015)[3] as part of a conservative assessment, and the classification of SWH be factored into the determination of appropriate buffer widths.

Updated Recommendation #9

We recommend that additional amphibian surveys be completed following Marsh Monitoring Program protocol or a conservative approach be used which assumes the presence of Significant Wildlife Habitat and factors that into determination of buffer widths.

Table 2 summarizes the results of the amphibian surveys conducted in 10 locations on the subject lands. Although these survey stations are shown on Figure 2, they are not labelled on the map, and consequently it is not possible to determine where amphibians were actually recorded on site. This information needs to be provided to properly identify amphibian breeding habitat (e.g., wetlands, vernal pools) and associated amphibian movement corridors to upland habitat that could be affected by the development, and to determine whether any of these habitats constitute Significant Wildlife Habitat (i.e., amphibian breeding habitat and/or movement corridors) and to plan for appropriate mitigation.

Original Recommendation #10

Please label survey stations on Figure 2.

Additional comments on Recommendation #10 based on supplemental information:

We recommend that Figure 2 (Appendix B), showing location of each amphibian survey station, be

[2] *Bird Studies Canada, Environment Canada, and the United States Environmental Protection Agency. 2009. Marsh Monitoring Program Participant's Handbook for Surveying Amphibians. 2009 Edition. 13 pp.*

[3] *Ministry of Natural Resources and Forestry. 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 5E.*

included in an updated version of the EIS.

Updated Recommendation #10

We recommend that the updated figure be included in an updated version of the EIS.

According to Figure 2, no surveys were conducted on the eastern half of the subject lands, despite appropriate habitat occurring in this area as indicated on ELC mapping. In particular, amphibians were not surveyed in the vicinity of Precincts A and C. Amphibian breeding habitat should be characterized in these precincts.

Original Recommendation #11

Please explain why no surveys were conducted in suitable amphibian habitat in the eastern half of the subject lands or complete additional surveys.

Additional comments on Recommendation #11 based on supplemental information:

Surveys were not completed in Precinct C or D because the potential development footprints did not support potential amphibian breeding habitat. This was confirmed during site investigations with the peer reviewers.

Recommendation #11 is considered resolved.

We observed several vernal pools during our site visit on May 7, 2019, especially within and between Precincts A and B (Photographs 2 and 3). Vernal pools can represent Significant Wildlife Habitat (as amphibian breeding habitat), regardless of permanency or size. We observed at least two pool complexes, comprised of multiple deep pools, that are likely to support amphibians. These vernal pool complexes should be mapped and recognized as high constraint areas, with appropriate buffers established around them (e.g., we recommend a minimum 30 m buffer if they are identified as Significant Wildlife Habitat).

Original Recommendation #12

Please map all vernal pool complexes and identify them as high constraint areas. Depending on the locations of amphibian observations (see Recommendation #10), some vernal pools may represent Significant Wildlife Habitat. Please justify buffers applied to vernal pools within this context.

Additional comments on Recommendation #12 based on supplemental information:

We recognize that additional surveys of vernal pools are being completed in 2019, which will be used to inform the location and detailed design of facilities within Precincts A and B. Since 2019 is a very wet year so far, results should be used as part of a conservative assessment and the site plan should be augmented to ensure that vernal pools supporting amphibian breeding in 2019 are located outside of the development footprint and sufficiently buffered to retain functionality. We recommend that the results of these surveys be included in an updated version of the EIS.

Updated Recommendation #12

We recommend that the results of the 2019 surveys be included in an updated version of the EIS. Any vernal pools that are identified in the 2019 surveys as supporting amphibian breeding should be located outside the development footprint, with at least a 30 m buffer around them.

Photograph 2. Vernal pool complex observed near Precinct B (May 7, 2019).

Photograph 3. Vernal pool complex observed near Precinct B (May 7, 2019).

2.5 Breeding Birds

Two early morning breeding bird surveys were conducted, on June 6 and 21, 2018, to document bird communities in (i) forest, (ii) meadow and (iii) flyovers and adjacent areas. The EIS does not describe what methodology was used, nor indicate the location of surveys in Figure 2 – (Locations of Targeted Wildlife Surveys Conducted in 2018). It is also not clear why wetland habitats, which comprise a significant portion of the subject lands and adjacent areas, were not included in habitats surveyed.

Original Recommendation #13

Please explain the methodology used to survey breeding birds and indicate the location of surveys on Figure 2. Please justify why surveys of wetland habitats was not necessary or complete surveys in these areas.

Additional comments on Recommendation #13 based on supplemental information:

MNAL provided additional detail on methodology and survey locations.

Recommendation #13 is considered resolved.

The EIS states that the Ontario Breeding Bird Atlas (OBBA) recorded 119 bird species in the 10 km^2 square 17PK30 that includes the property. However, the most recent OBBA survey (2001-2005)[4], shows that the property falls within square 17PK38, not 17PK30 (which is located south of Lake Simcoe). Accordingly, 124 bird species have been documented in 17PK38, including Common Nighthawk.

Common Nighthawk is listed as a special concern species in Ontario, thus, its habitat qualifies as Significant Wildlife Habitat. Common Nighthawk is a nocturnal species that uses rock barrens during the breeding season, which is common habitat on the subject lands. However, no targeted surveys were conducted for Common Nighthawk as part of the EIS. Nocturnal surveys were conducted for Whip-poor-will (which also uses rock barrens) using Bird Studies Canada (2014) protocols at a single survey station adjacent to Stagecoach Road in 2018. MNAL stated at the May 17, 2019 meeting that no Common Nighthawk were detected during these surveys. Bird Studies Canada (2014) recommends that monitoring stations be no more than 1 km apart for nocturnal bird surveys to ensure adequate coverage of potential habitat, yet this station is more than 1 km away from some of the suitable rock barren habitats on site, potentially hindering detection of nocturnal bird species on the property.

Original Recommendation #14

Please monitor for Common Nighthawk in nocturnal surveys at suitable rock barrens within the subject lands.

Additional comments on Recommendation #14 based on supplemental information:

[4] https://www.birdsontario.org/atlas/pdfdownload.jsp?lang=en

We support MNAL's decision to conduct additional nocturnal surveys for Common Nighthawk in 2019 to ensure coverage of potential habitat around Precinct C. We recommend that the results of these surveys be included in an updated version of the EIS.

Updated Recommendation #14

We recommend that the results of the 2019 nocturnal surveys be included in an updated version of the EIS.

2.6 Deer Wintering Habitat

A single survey of deer wintering habitat was conducted on March 4, 2018, using a roaming transect through the MNRF identified Stratum 2 deer wintering yard, as well as surrounding portions of the property that contain suitable conifer cover. Data were collected along 14 transects on:

- Tree composition and cover,
- The presence and extent of tracks
- The presence and extent of scat,
- The availability of suitable browse, and
- Evidence of browse utilization.

Additional information was also collected on April 11 and 12, 2018 during bat roost surveys. It is not clear whether systematic surveys (i.e., using the same roaming transect methodology and collecting the same data as during the March survey) were conducted on the April dates. The location of the March transect survey, as well as the area surveyed in April, should be illustrated on a figure.

Original Recommendation #15

Please explain whether systematic surveys or incidental observations were used during April 2018 monitoring of deer wintering habitat. Please map areas surveyed during March and April visits.

Additional comments on Recommendation #15 based on supplemental information:

MNAL provided additional detail on deer wintering habitat methodology and survey locations. We recommend that this information detailed methods be included in an updated version of the EIS.

Updated Recommendation #15

We recommend that the detailed methods and survey locations be included in an updated version of the EIS.

Based on the survey results, the EIS concludes that the deer yard on site is not heavily used, "with only limited track and scat, and little evidence of browse" (p. 37). However, no data from the 14 transects are presented to support this conclusion. We are concerned that a single targeted survey is not sufficient to adequately document deer activity on the subject lands, especially since, as the EIS points out, use can vary from year to year (e.g., we counted 4 deer scat in Precinct A and 15 deer scat in Precinct B through incidental observations during our site visit). MNRF (2015) recommends that field surveys be conducted

over several winters to determine boundaries of Stratum 1 and 2 habitats within an “average” winter. The fact that MNRF has included part of the subject lands (including part of Precinct B) within a Stratum 2 deer yard indicates this area is important to deer over the long-term. In addition, movement corridors associated with the deer wintering habitat have not been considered in the impact assessment, particularly with respect to the roadway proposed between Precinct A and B, which would run parallel to potential deer wintering habitat, and thus could create barriers to movement.

Original Recommendation #16

Please provide the data collected from the 14 transects and justify why a single targeted survey is sufficient to document deer activity on the subject lands. Please also evaluate potential movement corridors linking deer wintering habitat and discuss the impacts of the proposed development and internal roadways on these corridors.

Additional comments on Recommendation #16 based on supplemental information:

Substantial portions of both Precincts A and B are located within MNRF defined Stratum II deer wintering habitat. Information provided in Appendix C details the winter deer survey on March 4, 2018, but additional information following (or at least in consideration of) MNRF’s Deer Habitat Assessment 101 is required to characterize deer wintering habitat and deer movement corridors in the study area beyond the data presented from a single targeted site visit due to:

a) Town of Bracebridge Official Plan Policy B10.5.3:

   - Development proposed in critical Deer Wintering Areas shall generally be subject to Site Plan Control.

b) District Municipality of Muskoka Official Plan Policy F.80:

   - Development in identified deer wintering areas shall generally be subject to:

     i. Review and consultation with the Ministry of Natural Resources

     ii. Consideration and appropriate utilization of development control techniques to ensure impact of the development is minimized such as zoning, site plan control and subdivision control or other agreements.

c) the high quality of cover, and ample evidence of tracks, scat and browse presented in Appendix C, as well as that observed during field investigations with peer reviewers on May 7, 2019,

d) the extent of development in Precinct A proposed within the deer wintering area, and

e) MNRF study requirements in *Deer Habitat Assessment 101 – Deer Wintering Areas and Deer Movement Corridors* which describes a more in-depth and standardized procedure to assess deer wintering areas and movement corridors.

Updated Recommendation #16

We recommend that additional information be collected following MNRF's Deer Habitat Assessment 101. The results of future surveys should be included in an updated version of the EIS.

The EIS acknowledges that Precinct B overlaps with the MNRF identified Stratum 2 deer wintering area, and that Precincts A and B contain suitable winter deer cover extending east beyond the Stratum 2 boundary. However, the potential importance of this area for deer is downplayed by suggesting that it is on the edge of the deer yard and constitutes a relatively small portion of it: "the overall wintering area that has been identified is large and predominantly outside of the property, extending west and southwest…the proportional extent of the overall block of Stratum 2 habitat is relatively limited within the subject property" (p. 36). While the size of the impacted deer yard may be small compared to the size of the entire deer yard, the quality of the remaining habitat should also be evaluated when determining the significance of the impacted area for deer, and any cumulative effects influencing overall quality considered (e.g., are other portions of the deer yard beyond the property threatened by development? What barriers to movement exist within the rest of the deer yard, such as road networks?).

Original Recommendation #17

Please discuss the quality of the remaining MNRF identified Stratum 2 deer wintering area that occurs outside the property and assess its condition in terms of cumulative effects that might exist, such as other development pressures, road fragmentation etc.

Additional comments on Recommendation #17 based on supplemental information:

The quality of the remaining Stratum 2 deer wintering area beyond the property has not been evaluated.

Updated Recommendation #17 – no change

Please discuss the quality of the remaining MNRF identified Stratum 2 deer wintering area that occurs outside the property and assess its condition in terms of cumulative effects that might exist, such as other development pressures, road fragmentation etc.

2.7 Aquatic Habitat

Sufficient characterization of aquatic habitat is lacking in the EIS. Data were collected on "width, depth, general flow conditions, substrates, channel slopes, barriers to fish access, instream cover and habitat complexity" (p. 12) and watercourses are categorized on Figure 3 as:

- Permanent tributary, with some forage fish habitat value
- Intermittent tributary, with some forage fish habitat value
- Ditched drainage, accessible to forage fish
- Intermittent drainage, with no fish access or habitat value

Results are not presented in a detailed or systematic manner (e.g., only one water temperature and flow are mentioned from one location and date), nor is data used to justify categorization presented on Figure

More detailed presentation and discussion of the data is needed (e.g., by sampling location or individual watercourse or watercourse reach) to characterize aquatic habitat, project impacts, develop mitigation measures and evaluate the effectiveness of the mitigation measures (e.g., buffer size). For example, it is our experience that aquatic habitat surveys and subsequent management recommendations for development applications of this magnitude typically follow defined protocols, such as ones developed by conservation authorities[5] or the provincial government[6]. For example, a proposed road crossing between Precincts D and E will pass through a watercourse (Photograph 3) which has been categorized as "Ditch drainage, accessible to forage fish" as opposed to an intermittent or permanent tributary, but it is not clear what information was used to classify it. Categorization is important because in Figure 9 only the permanent and intermittent tributaries are identified as a constraint and protected with a 15 m buffer (i.e., the watercourses categorized as ditched drainage and intermittent drainage are not).

Original Recommendation #18

Please present all the data on aquatic habitat that were collected on the subject lands and analyze following accepted protocols.

Additional comments on Recommendation #18 based on supplemental information:

Our original review concluded that adequate characterization of aquatic habitat was lacking in the EIS. However, based on an evaluation of the additional information presented and our observations from the May 7, 2019 site visit, we agree with the narrative in the EIS that: a) the watercourses are generally warmwater and strongly affected by beaver activity which limit migration opportunities, b) the proposed development generally avoids watercourses, and c) watercourses support a typical, warmwater, forage fish assemblage.

The watercourse characteristics in the study area are constantly changing due to beaver activity such that recent data is invaluable and we agree that they do not represent a major constraint to the development based on the watercourse characteristics, low potential for impacts and the proposed mitigation measures. We therefore agree with the proposed approach to complete aquatic habitat surveys as part of the site plan process along each watercourse where watercourse crossings are proposed and where the development will be in proximity to watercourses. Aquatic habitat surveys completed during detailed site design should be completed using standardized protocols along all watercourses that are located within 120 m of the proposed footprint of any development and both an impact assessment and mitigation measures should be developed based on the site-specific information collected at that time.

Updated Recommendation #18

We recommend a commitment be documented in the EIS that additional surveys (using standardized protocols) will be completed during the site plan process in areas where

[5] *TRCA (Toronto and Region Conservation Authority) and CVC (Credit Valley Conservation). 2014. Evaluation, Classification and Management of Headwater Drainage Features Guidelines.*
[6] *Irwin, K., B. Bergmann, and J. Boos. 2013. The Stream Permanency Handbook for South-Central Ontario. Ontario Ministry of Natural Resources.*

watercourse crossings will be required or where aspects of the development will be in proximity to watercourses.

Photograph 3. Watercourse located at proposed road crossing slightly north of Precinct D referred to as "Ditched drainage, accessible to forage fish" in EIS.

2.7 Flora

Open Woodland Bluegrass, ranked as S3 in Ontario (vulnerable due to restricted range, relatively few occurrences, recent decline, threats or other factors), as well as four locally or regionally rare or uncommon plant species, have been found on the subject lands. The location of these sensitive species should be shown on a figure in relation to the development plan, along with any mitigation plans (i.e., setbacks) to inform the assessment of impact.

Original Recommendation #19

Please map the location of Open Woodland Bluegrass and the four rare or uncommon plant species and discuss what mitigation measures will be taken to protect their populations on site.

Additional comments on Recommendation #19 based on supplemental information:

We support MNAL's plan to conduct additional surveys for rare flora within each development precinct as part of the site plan process and to apply the necessary mitigation measures to protect these plant communities.

Updated Recommendation #19

We recommend a commitment be documented in the EIS to conduct additional surveys for rare flora during the site plan process.

2.8 Bat Maternity Roosts

The forested portions of the subject lands represent potential habitat for bat maternity colonies, which are considered Significant Wildlife Habitat.

Surveys for potential maternity roosting habitat were conducted on site in April 2018, using 31 randomly located plots within Precincts A-D. Surveys were not conducted in Precinct E because it was included in the development layout after the survey period. While the EIS indicates that Precinct E has a similar tree composition to Precinct C (and thus can be assumed to have a similar snag density), we recommend that surveys still be conducted in this area.

Original Recommendation #20

Please conduct surveys for potential bat maternity roosting habitat in Precinct E.

Additional comments on Recommendation #20 based on supplemental information:

We support MNAL's plan to conduct snag surveys in Precinct E and to update any existing snag surveys where development occurs after 2023.

Updated Recommendation #20

We recommend a commitment be documented in the EIS to collect additional snag survey information in Precinct E during the site plan process.

Tables 4-7 show the ranking of potential maternity roosting habitat by precinct, based on the information from these plots.

Table 4. Bat Maternity Roost Habitat Ranking Development Precinct A

Plot Number	Suitable Maternity Roost Relative Quality[1]	Number of Snag Trees Recorded
1	High	1
2	N/A	0
3	Medium	2
4	Low	1
5	N/A	0
6	Low	1
7	N/A	0
8	High	2
9	N/A	0
10	Low	1
11	N/A	0

The snag tree survey plots are mapped on Figure 2, but their plot numbers are not included. It is thus not possible to link the information on habitat quality presented in the tables with locations on the map.

Original Recommendation #21

Please label survey plots on Figure 2.

Additional comments on Recommendation #21 based on supplemental information:

We recommend that the locations and numbering of bat maternity surveys provided in Appendix B Figures 2a-2d be included in an updated version of the EIS. Based on this information, it appears that Tables 6 and 7 in the EIS should be switched, as Plots #21-24 are shown in the figures as part of Precinct D and Plots #25-31 are shown in the figures as part of Precinct C.

Updated Recommendation #21

We recommend that the locations and numbering of surveys provided in Appendix B Figures 2a-2d be included in an updated version of the EIS.

Table 8 summarizes the criteria used to classify maternity roost trees as either low, medium or high quality habitat. However, no explanation is given on how these criteria are used to categorize trees into the three separate classifications. For example, must a tree meet all these criteria to qualify as high quality? How many criteria must be met for low and medium quality rankings?

Table 8. Criteria for Determining Best Suitable Maternity Roost Trees

- Tallest snag
- Snag exhibits cavities/crevices often originating as cracks, scars, knot holes or woodpecker cavities
- Snag has the largest dbh (>25 cm)
- Snag is within the highest density of snags (e.g., cluster of snags)
- Snag has a large amount of loose, peeling bark (naturally occurring or due to decay)
- Cavity or crevice is high on the tree (>10 m) or is "chimney like" with a low entrance
- Tree is a species known to be rot resistant (e.g., black cherry, black locust)
- Tree species provides good cavity habitat (e.g., white pine, maple, aspen, ash, oak)
- Snag is located within an area where the canopy is more open
- Snag exhibits early stages of decay (Decay Class 1-3)

Original Recommendation #22

Please explain how the criteria presented in Table 8 are used to rank snag trees into low, medium or high-quality classifications.

Additional comments on Recommendation #22 based on supplemental information:

No explanation for ranking snag trees has been provided.

Updated Recommendation #22 - no change

Please explain how the criteria presented in Table 8 are used to rank snag trees into low, medium or high-quality classifications.

The density of snags found in each precinct is used to determine the relative potential impacts of the development by precinct on SAR bats. The EIS states that MNRF considers 10 snags/ha indicative of high quality potential maternity roosting habitat. Table 9 summarizes the snag density for each precinct. The results show that Precinct C had the highest density (3.8 snags/ha) followed by Area D (3.7 snags/ha) then Area B (1.5 snags/ha) and Area A (1.3 snags/ha).

We are not clear on how snag density was calculated. We believe 'snags/ha' should be calculated as '# of snags'/'total plot area'. Following that approach, Precinct A has 8/0.5 = 16 snags/ha; Precinct B has 6/0.4 = 15 snags/ha; Precinct C has 3/0.2 = 15 snags/ha; and Precinct D has 9/0.3 = 30 snags/ha. Thus, all precincts qualify as high quality potential maternity roosting habitat.

Recommendation #23

Please explain how snag density is calculated.

Table 9. Snag Tree Densities for each Development Precinct

Development Precinct A								
Assessment Area (ha)	**# of plots**	**# of snags**	**Average # of snags/plot**	**Average radius (m)**	**Each plot area (m^2)**	**Total plot area (m^2)**	**Total plot area (ha)**	**Snag density (snag/ha)**
Approximate Area (7.57 ha)	11.0	8.0	0.7	12.6	498.8	5,486.3	0.5	1.3
Development Precinct B								
Assessment Area (ha)	**# of plots**	**# of snags**	**Average # of snags/plot**	**Average radius (m)**	**Each plot area (m^2)**	**Total plot area (m^2)**	**Total plot area (ha)**	**Snag density (snag/ha)**
Approximate Area (5.56 ha)	9.0	6.0	0.7	12.6	498.8	4,488.8	0.4	1.5
Development Precinct C								
Assessment Area (ha)	**# of plots**	**# of snags**	**Average # of snags/plot**	**Average radius (m)**	**Each plot area (m^2)**	**Total plot area (m^2)**	**Total plot area (ha)**	**Snag density (snag/ha)**
Approximate Area (2.4 ha)	4.0	3.0	0.8	12.6	498.8	1,995.0	0.2	3.8
Development Precinct D								
Assessment Area (ha)	**# of plots**	**# of snags**	**Average # of snags/plot**	**Average radius (m)**	**Each plot area (m^2)**	**Total plot area (m^2)**	**Total plot area (ha)**	**Snag density (snag/ha)**
Approximate Area (4.22 ha)	7.0	9.0	1.3	12.6	498.8	3,491.3	0.3	3.7

Additional comments on Recommendation #23 based on supplemental information:

As discussed at the meeting on May 17, 2019, we recommend that snag density for each precinct be recalculated as # of snags/total plot area. We believe this approach will provide a more accurate estimate of potential snag trees to be affected by the development, which is to be used to inform determination of how many bat boxes are needed for habitat compensation. We recommend that these revised calculations be included in an updated version of the EIS.

Updated Recommendation #23

Please calculate snag density within each precinct using the formula # of snags/total plot area. We recommend that this revised calculation be included in an updated version of the EIS.

2.9 Animal Movement Corridors

The EIS states that “animal movement corridors of provincial or regional importance are not found on the subject property” (p. 41). No evidence (i.e., surveys) is provided to support this statement and it is not clear what criteria were used to make this determination.

Original Recommendation #24

Please explain how it was determined that no provincially or regionally important animal movement corridors exist on the property.

Additional comments on Recommendation #24 based on supplemental information:

We accept the clarification provided in the supplemental information and expect that a more detailed examination of deer movement will be completed as per our comments under Recommendation #16 in order to meet this recommendation.

Updated Recommendation #24

We recommend that the results of future surveys be included in an updated version of the EIS.

2.10 Wetlands

In Section 5.2, the EIS states that “there are no Provincially Significant wetlands within the property” (p. 53). To our knowledge, none of the wetlands on the property have yet been evaluated by MNRF, thus it is not accurate to state that no provincially significant wetlands exist here (although we do acknowledge that none have been identified due to a lack of assessment). We suggest rewording this to “wetlands within the property have not been formally evaluated for provincial significance”.

Original Recommendation #25

Please reword text to clarify that wetlands on the property have not been evaluated for provincial significance.

Additional comments on Recommendation #25 based on supplemental information:

We agree that wetlands on and adjacent to the site have not been evaluated by MNRF and thus have no designation as locally or provincially significant. We also acknowledge that formal wetland evaluations to identify provincially significant wetlands are not commonly completed as part of development applications. Consequently, we reiterate this recommendation regarding clarification in the EIS that the wetlands on the property have not been formally evaluated for provincial significance.

Updated Recommendation #25 - no change

Please reword text to clarify that wetlands on the property have not been evaluated for provincial significance.

2.11 Mitigation Measures

The EIS recommends a number of mitigation measures relating to internal road construction, construction phasing and management, and stormwater management. However, many of the recommendations are vague and discretionary, and leave determination of more specific actions to the site plan stage. While details on design maynot yet be available at the EIS stage, we believe it is still possible (and important) to recommend specific examples of more detailed mitigation measures now, in order to demonstrate that mitigation is feasible. Otherwise, it is difficult to determine the net effect of the proposed development from the EIS.

For example, in 6.1.2 Internal Road Construction, the EIS recommends that

- "the project biologist and engineer work together on a design which minimizes the extent of encroachment into the area of deciduous swamp, and a sensitive design through this area" (p. 61),
- "the crossing of the permanent tributary be designed by the project engineer, with input from the project biologist, to avoid interference with fish passage, and to minimize impacts on fish habitat" (p. 61), and
- "all watercourse crossings be designed and implemented to avoid any short-term or longer-term impacts on water quality" (p. 62).

In each of these cases, the EIS should give examples of specific mitigation measures that could apply. For example, MNRF provides useful guidance on specific best management practices for mitigating the effects of roads[7] and construction[8] on amphibians and reptiles (e.g., road crossing structures and exclusionary fencing) which should be referenced and discussed in detail.

Original Recommendation #26

Please provide specific examples of mitigation measures that should be applied during construction, with particular reference to crossing structures and exclusionary fencing designed to mitigate effects to amphibians and reptiles. We recommend referring to MNRF best management practices.

Additional comments on Recommendation #26 based on supplemental information:

In order to meet requirements of this recommendation, we agree that additional mitigation measures should be developed through site-specific study as part of the site plan process. We support MNAL's commitment to develop mitigation measures that do not use discretionary language and that are designed based on the characterization of site-specific features.

Recommendation #26 is considered resolved.

In 6.1.3 Construction Phasing and Management, the EIS recommends that

[7]*MNRF. 2016. Best Management Practices for Mitigating the Effects of Roads on Amphibians and Reptile Species at Risk in Ontario. Queen's Printer for Ontario.*
[8]*MNR. 2013. Reptile and Amphibian Exclusion Fencing: Best Practices, Version 1.0. Species at Risk Branch Technical Note. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario.*

- "within Precinct B, which encroaches into an area of identified Stratum 2 deer winter yard, *an effort is to be made* to complete tree cutting during the October – November period, before deer are yarding" (p. 62),
- "in clearing along the permanent boundaries of new forest edges, *efforts are to be made* to stagger the edges" (p. 63),
- "*there is to be some effort* to ensure some variations in the size and design of the bat boxes" and "*every effort made* to install all or a majority of bat boxes prior to April 15" (p. 63).

We have added emphasis to the above examples to highlight use of discretionary wording, which we believe leaves too much room for interpretation and opportunity to apply the minimum level of mitigation required, rather than the ideal level to protect environmental features and functions on site. Instead, the EIS should be more forthright in its recommendations, by stating that the mitigation measures *should* or *shall* be implemented.

Original Recommendation #27

Please strengthen language regarding mitigation measures to be applied during construction phasing and management to clarify that specific measures *should* or *shall* be implemented, rather than recommending that efforts are made to *try* to implement them.

Additional comments on Recommendation #27 based on supplemental information:

In order to meet requirements of this recommendation, we agree that additional mitigation measures should be developed through site-specific study as part of the site plan process. We support MNAL's commitment to develop mitigation measures that do not use discretionary language and that are designed based on the characterization of site-specific features.

Recommendation #27 is considered resolved.

2.12 Figures

The ELC mapping in Figure 3 (representing information from 1999-2012) has since been updated by ELC mapping in Figure 4 (representing information from 2018). We recommend that Figure 3 be removed and only Figure 4 ELC mapping be presented. The ELC codes in Figure 4 are very difficult to read, and no legend is provided; the figure should be clarified.

Original Recommendation #28

Please remove Figure 3 and include only the 2018 ELC mapping from Figure 4. Please clarify Figure 4 so that the ELC codes can easily be read and interpreted with a legend.

Additional comments on Recommendation #28 based on supplemental information:

MNAL justified inclusion of both figures at the May 17, 2019 meeting. However, Figure 4 has not been clarified.

Updated Recommendation #28

Please clarify Figure 4 so that the ELC codes can easily be read and interpreted with a legend.

In Figure 8, it would be useful to include the 15 m and 30 m buffers, in addition to the proposed constraints mapped in relation to development.

Original Recommendation #29

Please include buffers around constraints in Figure 8.

Additional comments on Recommendation #29 based on supplemental information:

MNAL clarified at the May 17, 2019 meeting that buffers are included as part of the constraints mapping.

Recommendation #29 is considered resolved.

2.13 References

Original Recommendation #30

Two references listed in the EIS are outdated and should be replaced by updated versions:

- **The 1996 Provincial Policy Statement should be updated to the 2014 Provincial Policy Statement, and**
- **Cadman et al. 1987 Atlas of the Breeding Birds of Ontario (which covers the 1981-1985 survey) should be updated to Cadman et al. 2009 (which covers the 2001-2005 survey).**

Additional comments on Recommendation #30 based on supplemental information:

We accept the clarification from MNAL that the more up-to-date versions were used in the EIS and recommend that the references be revised in an updated version of the EIS.

Updated Recommendation #30

Please update the EIS with the more recent references.

2.14 Appendices

Appendix B - 1999 Wildlife List

Most of the species observed in 1999 are not discussed in the EIS. The location of these observations should be mapped in a figure, and relevant Significant Wildlife Habitat requirements should be discussed in the text (e.g., mast producing areas for Black Bear, White-tailed Deer, Ruffed Grouse, denning sites and movement corridors for mink and otter, late winter moose habitat).

Original Recommendation #31

Please map 1999 wildlife observations and discuss in terms of relevant Significant Wildlife Habitat that may exist on the subject lands (e.g., mast producing areas for Black Bear, White-tailed Deer, Ruffed Grouse, denning sites and movement corridors for mink and otter, late winter moose habitat).

Additional comments on Recommendation #31 based on supplemental information:

MNAL explained at the May 17, 2019 meeting that this mapping data is not available, but they have completed more up to date wildlife surveys and a generalized assessment of Significant Wildlife Habitat in the EIS. Specific issues related to assessment of wildlife and Significant Wildlife Habitat are addressed under separate recommendations.

Recommendation #31 is considered resolved.

Appendix C – 2018 Breeding Bird Survey Results

Warbler species in the *Dendroica* genus should be updated to the currently accepted AOU taxonomic classification of *Setophaga* genus. Breeding codes should be explained.

Original Recommendation #32

Please update the scientific names of warbler species. Please explain breeding codes.

Additional comments on Recommendation #32 based on supplemental information:

The information has not been provided.

Updated Recommendation #32 - no change

Please update the scientific names of warbler species. Please explain breeding codes.

3. Overall Peer Review Assessment

It is apparent that the overall layout of the proposed development, in five separate precincts, has been designed with the goal of protecting the natural landscape of the property as much as possible. Several sensitive environmental features have been addressed as primary (wetlands and watercourses) or secondary (rock barrens, drainage features, very steep slopes, deer wintering habitat) constraints in the proposed site plan, and buffers have been applied to reduce negative impacts. The development footprint seems relatively modest compared with many development projects within Bracebridge's urban boundary, and numerous recommendations are made within the EIS to preserve the remaining natural environment on the subject lands. However, we identified numerous gaps in the EIS in our initial peer review relating to the characterization of natural features and functions on site, evaluation of the potential impacts of the development, and proposed mitigation to minimize or avoid negative impacts.

MNAL has addressed or partially addressed a number of our initial concerns and recommendations in the "Clarifications and Supplementary Technical Information on our Environmental Impact Study for Muskoka Royale Collection; Our File 3517" submitted to the Town on May 28, 2019. Several outstanding issues remain, however, mainly relating to justification of minimum buffer widths, characterization of deer wintering habitat and movement corridors, and calculation of snag tree density for bat maternity roosting habitat. We agree with MNAL that some of the remaining information necessary can be collected during the site plan process and used to dictate detailed design, but other information should be collected and used to update the EIS, especially site-specific information on vernal pools and deer wintering habitat, which could impact the development of Precinct A. In addition, we recommend that a minimum 30 m buffer be applied to all wetlands and watercourses on the property to protect key ecological functions such as core wildlife habitat, and water quality and quantity.

3.1 Evaluation of Review Objectives

1. Does the EIS contain sufficient information on the natural environment of the area (including detailed documentation of natural features, ecological functions, and natural and human-made hazards, environmental sensitivities and constraints, and potential impacts of the proposed development on these features, functions, and hazards)?

   It is our opinion that this objective has not been satisfied for the following reasons:

- Adequate information on vernal pools and deer wintering habitat is lacking.

2. Does the EIS use correct methodologies to gather the information (e.g., that follow industry standards and apply appropriate scientific approaches)?

   It is our opinion that this objective has not been satisfied for the following reasons:

- Survey effort for amphibians and deer wintering habitat is not sufficient to characterize these natural heritage components.

3. Does the EIS make sound conclusions and recommendations, based on the best available information, so that the development proposal avoids negative impacts on significant natural heritage features and their ecological functions and conforms with applicable environmental

policies and legislation?

It is our opinion that this objective has not been satisfied for the following reasons:

- Additional information is required on natural heritage features (vernal pools and deer wintering habitat) to inform the impact assessment.
- Buffer width is not justified with respect to the natural features and functions to be protected and supported by specific recommendations from peer-reviewed studies.

4. Conclusions

Overall, the layout of the proposed development has generally been designed in consideration of sensitive environmental features and the development footprint is relatively small for a project within Bracebridge's urban boundary. Nonetheless, we believe that additional information and analysis (as recommended in our review) is required to enable a thorough impact assessment of the proposed development on natural heritage features and functions.

5. Closing

Please feel free to contact us if you have any questions or concerns regarding this peer review.

Sincerely,
per. Hutchinson Environmental Sciences Ltd.

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HESL Peer Review Recommendation #	Subject	Original Recommendation	Addressed	MNAL Response	Notes	Updated Recommendation
1	Development Footprint	Please clarify how the total development footprint is calculated, and include the area taken up by the internal roadway and other infrastructure (e.g., sanitary sewers, watermains, stormwater management ponds).	Partially	1	MNAL provided an architect's drawing showing a minimum 10 m cleared area around all development for the current concept plan at full build-out, representing 25.46 ha (14.19%) of the subject property.	Please clarify what the maximum cleared area around all development within precincts would be at full build-out and provide this % footprint.
2		Please map all development components (including sanitary sewers, watermains and stormwater management ponds) on a figure and provide a through assessment of the potential impacts and recommended mitigation measures for these components in the text.	Yes	2	MNAL comfirmed that this will be completed as part of the site plan process	Resolved
3		Please confirm that the environmental impacts associated with future development within the precincts will be assessed separately in the future or base the projection of impacts on a “full build-out” to the edges of the precincts.	Partially		MNAL stated that individual site plans will consider site-specific impacts for each precinct. It is still unclear whether impacts are calculated from the edge of each precinct or from the edge of the development footprint (e.g., 10 m cleared area).	Please clarify whether effects are calcuated from the edge of each precinct or from the edge of the development footprint.
4	Buffers	Please justify why a 15 m buffer around most wetlands and all watercourse will adequately protect these natural features and their ecological functions. Please explain what the primary functions of these buffers will be and how they will achieve these functions given site conditions. We recommend referring to the Beacon Environmental (2012) document for guidance on ecological buffers and recommend that the final selection of buffers and rationale be reviewed.	No	3	MNAL has committed to a minimum 30 m average buffer around all wetlands and protected watercourses. However, this raises the possibility of buffer widths <30 m, down to a 15 m minimum. The minimum buffer distance has not been justified based on site-specific natural features and functions, and in relation to recommendations in the literature.	We recommend a minimum 30 m buffer around all wetlands and watercourses. If the 15 m buffer width is to be applied, we reiterate the need to provide ecological justification as per our original recommendation.
5		Please clarify whether buffers will extend into development precincts, and if so, how they will be preserved as vegetated areas despite future potential growth. We recommend that all buffers be zoned as Environmental Protection to avoid encroachment of development into them in future.	No		MNAL mentioned at the May 17, 2019 meeting that all buffers would be zoned as Environmental Protection and would be outside development precincts.	We recommend that the EIS be revised to read that all buffers will be zoned as Environmental Protection.
6		Please include any recommendations on alternative routing and mitigation measures for the internal road proposed to pass through the deciduous swamp south of Precinct D.	Yes	4	MNAL confirmed that this would be completed as part of the site plan process.	Resolved
7		Please clarify the route of the road into Precinct D and explain why mapping shows it within the 15 m wetland buffer and outside the defined Precinct Development Area.	No		The route and mapping has not been clarified.	Same as recommended in peer review.
8	Field Survey Effort			5	MNAL provided a summary of field survey effort in the supplementary information.	We recommend that the table summarizing field survey effort be included in an updated version of the EIS.
9		Please explain the methodology used to survey amphibians and justify why a single survey is sufficient to characterize the amphibian community on the subject lands or complete additional surveys.	Partially	6	The approach was justified based on the inherent buffering of wetland environments.	We recommend that additional surveys be completed or a conservative approach be used which assumes the presence of Significant Wildlife Habitat and factors that presence into determination of buffer widths.
10		Please label survey stations on Figure 2.	Partially	6	Survey stations have been labelled.	We recommend that the updated figure be included in an updated version of the EIS.

11	Amphibians	Please explain why no surveys were conducted in suitable amphibian habitat in the eastern half of the subject lands or complete additional surveys.	Yes	6	Surveys were not completed in Precinct C or D beause the potential development footprints did not support potential amphibian breeding habitat. This was confirmed during site investigations with the peer reviewers.	Resolved
12		Please map all vernal pool complexes and identify them as high constraint areas. Depending on the locations of amphibian observations (see Recommendation #9), some vernal pools may represent Significant Wildlife Habitat. Please justify buffers applied to vernal pools within this context.	Partially	5	MNAL agreed to conduct supplementary surveys of vernal pool features this spring to inform the site plan process.	We recommend that the results of the 2019 surveys be included in an updated version of the EIS. Any vernal pools that are identified in these surveys as amphibian breeding habitat should be located outside the development footprint, with at least a 30 m buffer around them.
13	Breeding Birds	Please explain the methodology used to survey breeding birds and indicate the location of surveys on Figure 2. Please justify why surveys of wetland habitats was not necessary or complete surveys in these areas.	Yes	7	MNAL provided additional detail on methodology and survey locations.	Resolved
14		Please monitor for Common Nighthawk in nocturnal surveys at suitable rock barrens within the subject lands.	Partially	7	MNAL agreed to conduct additional surveys for nocturnal SAR bird species this spring.	We recommend that the results of the 2019 surveys be included in an updated version of the EIS.
15	Deer Wintering Habitat	Please explain whether systematic surveys or incidental observations were used during April 2018 monitoring of deer wintering habitat. Please map areas surveyed during March and April visits.	Partially	8	MNAL provided additional detail on deer wintering habitat methodology and survey locations.	We recommend that the detailed methods and survey locations be included in an updated version of the EIS.
16		Please provide the data collected from the 14 transects and justify why a single targeted survey is sufficient to document deer activity on the subject lands. Please also evaluate potential movement corridors linking deer wintering habitat and discuss the impacts of the proposed development and internal roadways on these corridors.	Partially	8	MNAL provided the results from the survey completed on March 4, 2018 but additional information is required to characterize deer wintering habitat and deer movement corridors.	We recommend that the results of future surveys be included in an updated version of the EIS.
17		Please discuss the quality of the remaining MNRF identified Stratum 2 deer wintering area that occurs outside the property and assess its condition in terms of cumulative effects that might exist, such as other development pressures, road fragmentation etc.	No		The quality of the remaining Stratum 2 deer wintering area beyond the property has not been evaluated.	Same as recommended in peer review.
18	Aquatic Habitat	Please present all the data on aquatic habitat that were collected on the subject lands and analyze following accepted protocols.	To be completed as part of the site plan process	8	Additional surveys will be completed in areas where watercourse crossings will be required or where aspects of the development will be in proximity of watercourses.	We recommend that this commitment be documented in the EIS.
19		Please map the location of Open Woodland Bluegrass and the four rare or uncommon plant species and discuss what mitigation measures will be taken to protect their populations on site.	To be completed as part of the site plan process	9	MNAL agreed to conduct additional surveys for rare flora during the site plan process.	We recommend that this commitment be documented in the EIS
20	Bat Maternity Roosts	Please conduct surveys for potential bat maternity roosting habitat in Precinct E.	To be completed as part of the site plan process	10	MNAL agreed to collect additional snag survey information in Precinct E.	We recommend that this commitment be documented in the EIS
21		Please label survey plots on Figure 2.	Partially	10	MNAL provided an updated figure.	We recommend that the locations and numbering of surveys be included in an updated version of the EIS.
22		Please explain how the criteria presented in Table 8 are used to rank snag trees into low, medium or high-quality classifications.	No		No explanation for ranking snag trees has been provided.	Same as recommended in peer review.
23		Please explain how snag density is calculated.	No		As discussed at the May 17, 2019 meeting, please recalculate snag density for each precinct as # of snags/total plot area and update this section of the EIS accordingly.	We recommend that the revised calculation be included in an updated version of the EIS.

24	Animal Movement Corridors	Please explain how it was determined that no provincially or regionally important animal movement corridors exist on the property.	Partially	11	A more detailed examination of deer movement corridors is needed.	See #16 above.
25	Wetlands	Please reword text to clarify that wetlands on the property have not been evaluated for provincial significance.	No		The text has not been clarified.	Same as recommended in peer review.
26	Mitigation Measures	Please provide specific examples of mitigation measures that should be applied during construction, with particular reference to crossing structures and exclusionary fencing designed to mitigate effects to amphibians and reptiles. We recommend referring to MNRF best management practices	To be completed as part of the site plan process	13	MNAL committed to provide site-specific mitigation measures and to avoid discretionary language, as part of the site plan process.	Resolved
27		Please strengthen language regarding mitigation measures to be applied during construction phasing and management to clarify that specific measures *should* or *shall* be implemented, rather than recommending that efforts are made to *try* to implement them.	To be completed as part of the site plan process	13	MNAL committed to provide site-specific mitigation measures and to avoid discretionary language, as part of the site plan process.	Resolved
28	Figures	Please remove Figure 3 and include only the 2018 ELC mapping from Figure 4. Please clarify Figure 4 so that the ELC codes can easily be read and interpreted with a legend.	Partially		MNAL justified inclusion of both figures at the May 17, 2019 meeting. However, Figure 4 has not been clarified.	Please clarify Figure 4 so that the ELC codes can easily be read and interpreted with a legend.
29		Please include buffers around constraints in Figure 8.	Yes		MNAL clarified at the May 17, 2019 meeting that buffers are included as part of the constraints mapping.	Resolved
30	References	Two references listed in the EIS are outdated and should be replaced by updated versions	Partially	14	MNAL indicated that the more up-to-date versions were used in the EIS.	Please update EIS with the more recent references.
31	Appendices	Please map 1999 wildlife observations and discuss in terms of relevant Significant Wildlife Habitat that may exist on the subject lands (e.g., mast producing areas for Black Bear, White-tailed Deer, Ruffed Grouse, denning sites and movement corridors for mink and otter, late winter moose habitat).	Yes		MNAL explained at the May 17, 2019 meeting that this mapping data is not available but they have completed more up to date wildlife surveys and a generalized assessment of Significant Wildlife Habitat in the EIS. Specific issues related to assessment of wildlife and Significant Wildlife Habitat are addressed under separate recommendations.	Resolved
32		Please update the scientific names of warbler species. Please explain breeding codes.	No		The information has not been provided.	Same as recommended in peer review.