

Memorandum

To: Stefan Krzeczunowicz, Hemson Consulting
 From: North-South Environmental Inc.
 Date: September 18, 2025
 File: Barrie Joint Land Needs Study (25-1497)
 cc: Michael Skelly; Patrick Barbieri
 Re: **Briefing Memo - Preliminary Natural Heritage Constraints Assessment for the Barrie Land Needs Assessment**

1. Introduction

North-South Environmental Inc. (NSE) was retained by Hemson Consulting to conduct a preliminary assessment of natural heritage features and other constraints to support the evaluation of land requirements for participating municipalities to accommodate growth to 2051. The study area is identified as Blocks 2-6 on **Figure 1**. The study is being conducted on behalf of the County of Simcoe, the City of Barrie, the Township of Springwater, and the Township of Oro-Medonte.

The purpose of this memorandum is to provide a brief summary of the preliminary constraints mapping (i.e., natural heritage features that pose a constraint to development and represent the “non-developable area”) and the methods used to identify them in order to assist with the interpretation of the constraint mapping for the study area (**Figures 2a-e, 3a-e, and 4a-e**). The preliminary constraint mapping should be considered draft at this time. Further discussion on the natural heritage features and areas, and other constraints within the study area will be included in the final technical memoranda.

It is imperative to be aware that there are a number of natural heritage features that cannot be mapped at this time due to a lack of information and unavailable mapping data. The natural features and associated constraints that cannot be mapped and accounted for in the area calculations of “non-developable lands” will need to be identified through an environmental study as part of a subsequent planning process. The environmental study would include fieldwork, ground-truthing and assessment of the natural heritage features and other components within the study area. This may result in additional lands being identified as constraints, “non-developable areas”.

2. Background Review

A background review of available data was completed to inform this constraints assessment, including:

- Review of provincial legislation and plans, as well as County and Municipal Official Plans for relevant natural heritage policies and mapping. The review included the following documents:
 - Provincial Planning Statement (2024)
 - Lake Simcoe Protection Plan (2009)
 - County of Simcoe Official Plan (Office Consolidation February 2023)
 - Township of Springwater's Official Plan (Office Consolidation June 2020)
 - Township of Oro-Medonte Official Plan (Office Consolidation March 2023)
 - City of Barrie Official Plan (May 2024)
- Review of technical guidance documents including the Natural Heritage Reference Manual (OMNR 2010), Significant Wildlife Habitat Technical Guide (OMNR 2000) and Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF 2015).
- Background searches for designated significant features (e.g., provincially significant wetlands, significant woodlands, etc.).
- Ministry of Natural Resources (MNR) Geospatial Ontario Mapping
- Nottawasaga Valley Conservation Authority Regulatory Mapping
- Lake Simcoe Region Conservation Authority Regulatory Mapping

3. Natural Heritage Features and Other Constraints

The following natural heritage features and areas as identified in sections 4.1 and 4.2 of the Provincial Planning Statement (PPS) (2024) have been summarized in **Appendix 1**. Features that are present in the study area and have available data layers are shown on **Figures 2a-e & 3a-e**, including:

- Significant wetlands;
- Significant woodlands;
- Significant wildlife habitat (select data available – data incomplete);
- Surface water features; and
- Preliminary linkage areas.

The following natural heritage features and areas as identified in section 4.1 of the PPS 2024 have the potential to occur in the study area and are summarized in **Appendix 1**. These features have not been mapped due to lack of information / unavailable data layers:

- Significant wetlands – unevaluated wetlands present within the study area; once evaluated, may be designated as provincially significant;
- Significant valleylands;

- Significant wildlife habitat - many SWH types are not / cannot be mapped through desktop assessment;
- Fish habitat; and
- Habitat of endangered species and threatened species.

The following other natural heritage components and constraint considerations as identified in County and Local Municipal Official Plans, Lake Simcoe Protection Plan, and conservation authority regulatory mapping occur or have the potential to occur in the study area. These are summarized in **Appendix 1** and may or may not be mapped, depending on availability of information / data layers:

- Included in the preliminary constraints mapping (**Figures 2a-e & 3a-e**)
 - Evaluated wetlands - other;
 - Preliminary Ecological buffers;
 - Regulated wetlands and 30 metre setback;
 - Regulated Floodplain; and
 - Key Natural Heritage Features and Key Hydrologic Features and their related 30 metre vegetation protection zone within Lake Simcoe Protection Plan watershed boundary.
- Not included in the preliminary constraints mapping
 - Locally significant wetlands;
 - Cultural thickets, cultural meadows, other woodlands;
 - Corridors; and
 - Public lands.

3.1. Mapping of Natural Heritage Features and Areas

Provincial geospatial data, including the 2022/2023 LiDAR imagery, was used to map significant wetlands, significant wildlife habitat (where existing mapping was available), evaluated wetlands - other, unevaluated wetlands, surface water features (watercourses and waterbodies) and key natural heritage features and key hydrologic features and their related vegetation protection zone within the Lake Simcoe Protection Plan watershed boundary. Woodland mapping data was created from provincial 2022/2023 LiDAR imagery for a more accurate woodland boundary identification.

Natural feature definitions and significance criteria were based on existing information where available from the background materials reviewed in section 2 above; however, the Natural Heritage Reference Manual (NHRM) (OMNR 2010) was used as the overarching guidance document.

For the purpose of identifying and mapping significant woodlands, criteria were determined using the NHRM (OMNR 2010) and City of Barrie's Official Plan. The City of Barrie's Official Plan was used as it will direct land use planning decisions for those lands proposed for annexation. The Natural Heritage System in the City's Official Plan contains three levels of protection for woodlands. Based on the definition and / or criteria of the natural feature component, its associated level of protection and the

permitted uses, woodlands can be significant at any size. Therefore, all woodlands within the study area have been mapped and constraint rankings applied.

3.2. Preliminary Ecological Buffers

Preliminary ecological buffers were included in the constraints assessment and corresponding mapping. The buffer constraint criteria included a 30 metre wide area from significant wetlands and significant woodlands, and watercourses. The preliminary ecological buffer is considered ecologically appropriate at this time given the uncertainty of adjacent land uses. The preliminary buffer follows the precautionary approach, as recommended by the NHRM (OMNR 2010) when there is a lack of information about the sensitivity of the feature and potential impacts are unknown. As a preliminary buffer width, it is acknowledged that through more detailed studies a narrower or wider buffer may be determined to be more ecologically appropriate. Preliminary ecological buffers will be discussed further in the technical memoranda.

3.3. Preliminary Linkage Areas

Preliminary linkage areas are areas that provide ecological connectivity between natural features/areas. Linkages areas support the movement of wildlife and plants (including genetic material such as seeds) between natural features/areas and contribute to long-term sustainability of natural areas. These natural linkage areas are identified and are naturalized / enhanced when there is a change in land use from a permeable landscape (e.g., agricultural land use) to an impermeable landscape (e.g., residential, commercial, industrial land use).

The criteria used to identify linkages may vary depending on the scale being considered. Geographic scale is a strong consideration in the identification of linkages. Linkages that are designed to function at the landscape scale may be wider compared to connections at the local or site scale, with corridor widths ranging from 50 meters for general species to up to 500 meters in rural areas for species that require interior forest habitat (NHRM, 2010 148pp.).

For the purpose of mapping preliminary constraints, we have identified potential linkage areas in the study area that are conceptually represented on **Figures 2b, 2c, and 2e**. Additional discussion on linkage areas will be included as part of the technical memoranda.

The criteria used to identify potential linkage areas are as follows:

Linkage Width: 50 metres

Distance between features: No minimum distance

Linkage Criteria:

Linkages were identified between the following features:

- Woodlands >4 hectares in size
- Wetlands/waterbodies >0.5 hectares in size

3.4. Conservation Authority Regulations

Ontario Regulation (O. Reg.) 41/24 under the Conservation Authorities Act gives the Nottawasaga Valley Conservation Authority (NVCA) and Lake Simcoe Region Conservation Authority (LSRCA) the authority to regulate development, interference with wetlands and alterations to shorelines and watercourses. Generally, the NVCA and LSRCA regulated floodplains, hazard lands, wetlands, and 30 metre wetland and watercourse setbacks.

Data from the NVCA was used for wetlands, surface water features and regulated areas including floodplains and regulated setbacks. For lands within the LSRCA watershed, only the regulated areas have been mapped (e.g. individual components were not mapped).

3.5. Lake Simcoe Protection Plan

The Lake Simcoe Protection Plan (2009) is a comprehensive plan to address environmental threats, reduce pollutants like phosphorus, and restore the ecological health (e.g. fish and other aquatic life) of Lake Simcoe and its watershed. The Lake Simcoe Protection Plan contains policies that protect key natural heritage features (wetlands, significant woodlands and significant valleylands), key hydrologic features (wetlands, permanent and intermittent streams, and lakes other than Lake Simcoe), and requires 30 metre vegetation protection zones that contribute to the ecological health of the watershed.

The Lake Simcoe Protection Plan watershed boundary is identified on **Figures 3a, 3b, and 3e**. Key natural heritage features, key hydrologic features and their related 30 metre vegetation protection zone within the Plan area have been identified on **Figures 2a, 2b, and 2e**.

4. Identification of Constraint Levels (High, Medium, Low)

Based on the background and secondary review, the study area has been assessed to determine areas of High, Medium and Low Constraints for natural features and other constraints that can be mapped based on available data. These are summarized in **Appendix 1** and described below. Constraints mapping for the study area is included on **Figures 4a-e**.

The definitions, criteria and policies from the PPS 2024 as well as the City of Barrie's Official Plan were used to determine the constraint rankings. The City of Barrie's Official Plan was used as it will direct land use planning decisions for those lands that are proposed annexation.

Regard was given for the Official Plans for Township of Springwater, the Township of Oro-Medonte and County of Simcoe. These official plans were considered informative, rather than determinative, for this assessment.

Each constraint level for natural features and other constraints that can be mapped are provided below. For those natural heritage features and areas that cannot be mapped, the constraints assessment will be discussed in the final technical memoranda.

High Constraint

Areas of 'High Constraint' have legislative or policy restrictions that require them to be protected or must generally be retained, with some / limited exceptions.

- Areas identified as Natural Heritage Features and Areas (significant wetlands, significant woodlands, significant wildlife habitat (where information was available))
- Surface water features (e.g. watercourse, stream)
- NVCA and LSRCA regulated features (e.g., wetlands; watercourses; regulated setbacks)
- Areas identified as Key Natural Heritage Features or Key Hydrologic Features and their related 30 metre vegetation protection zone in the Lake Simcoe Protection Plan watershed boundary.

Medium Constraint

Areas of 'Medium Constraint' may be approved for development, though will generally require a higher threshold of ecological investigations and mitigation assessment.

- Preliminary ecological buffers
- Preliminary linkage areas

Low Constraint

Areas of 'Low Constraint' can generally be approved for development following baseline ecological investigations and the application of appropriate mitigation as documented in an Environmental Impact Study (EIS) report and approved by the reviewing/regulating agency.

- Floodplains as regulated by the NVCA and LSRCA

5. Summary of Preliminary Results

Based on the preliminary desktop analysis of natural heritage features and areas and other constraints assessment that can be mapped, 1349 ha of 2517 ha (53.6%) of the study area will be considered non-developable land, which consists of all three constraint categories; 1183 ha (47.0%) is considered 'High Constraint', 136 ha (5.4%) is considered 'Medium Constraint' and 31 ha (1.2%) is considered 'Low Constraint'. This can be further broken down by Block.

Table 1. Preliminary Summary of Non-Developable Lands*

Block No.	Gross Block Area (ha)	High Constraint (ha)	Medium Constraint (ha)	Low Constraint (ha)	Non-Developable Lands*(ha)
2	381.82	128.33 33.6%	20.55 5.4%	0.37 0.1%	149.25 39.1%
3	192.43	4.14 2.2%	6.03 3.1%	2.68 1.4%	12.85 6.7%
4	1225.78	750.48 61.2%	56.67 4.6%	17.81 1.5%	824.96 67.3%
5	183.32	81.27 44.3%	24.56 13.4%	0.0 0%	105.83 57.7%
6	533.44	218.34 40.9%	27.72 5.2%	10.33 1.9%	256.39 48.1%

* The Preliminary Summary of Non-Developable Lands does not include natural heritage features and areas that cannot be mapped due to a lack of information and unavailable mapping data. As a result, these numbers may change.

6. Potential Community Buffer

Through previous plenary discussions, a potential community buffer in the northern part of Blocks 4 and 5 was identified to create separation between the City of Barrie and the Midhurst community. The location, width, and intended use of the community buffer is unknown and is subject to further discussion.

As part of these discussions, the potential for the community buffer to include naturalized areas was questioned. We have provided a summary of natural heritage considerations for the potential transitional zone pertaining to Blocks 4 and 5.

Block 4

The Provincially Significant Willow Creek/Little Lake Wetlands, as well as other natural heritage features, extend along most of the northern boundary in Block 4. Development is not permitted within Provincially Significant Wetlands in accordance with the PPS 2024 and the County and Local Official Plans. As a result, there would be a natural separation from any development on lands in the southeastern part of Block 4.

The lands north of Patridge Road in Block 4, on both the east and west side of Highway 400, are currently being farmed. There are very limited natural heritage features in this area, and therefore, no potential for natural linkages / corridors to be identified and implemented.

Block 5

There is an opportunity for a potential linkage area from Willow Creek/Little Lake to natural heritage features (e.g., woodlands, potential wildlife habitat) to the west.

A preliminary linkage area was identified along the northern boundary of Block 5 on **Figure 2c**. The final location, shape and width of the linkage area should be analyzed and determined through a subwatershed study or environmental impact study when more detailed information of the natural heritage features and their ecological functions are known. The linkage area should be naturalized / enhanced as described in section 3.3 of this memorandum.

7. References

City of Barrie Official Plan (May 2024)

County of Simcoe Official Plan (Office Consolidation February 2023)

Ontario Endangered Species Act. 2007. Consolidation period, June 5, 2025.

Ontario Ministry of the Environment, Ministry of Natural Resources, Lake Simcoe Region Conservation Authority. 2009. Lake Simcoe Protection Plan 2009.

Ontario Ministry of Municipal Affairs and Housing. 2024. Provincial Planning Statement 2024. 21-22 pp.

Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide. 151 pp.

Ontario Ministry of Natural Resources (OMNR). 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition.

Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF 2015)

Township of Oro-Medonte Official Plan (Office Consolidation March 2023)

Township of Springwater Official Plan (Office Consolidation June 2020)

Appendix 1 Natural Heritage Components, Criteria Mapping and Constraint Rankings

Natural Features and Other Constraints	Simcoe County ¹ Natural Heritage component (Yes/-) Mapped/Not mapped	Springwater ² Natural Heritage component (Yes/-) Mapped/Not mapped	Oro-Medonte ³ Natural Heritage component (Yes/-) Mapped/Not mapped	Barrie ⁴ Natural Heritage component (Yes/-) Mapped/Not mapped	Data Source	Mapped Yes/No	Constraint Ranking High/Medium/Low Mapped/Not mapped
Natural Heritage Features and Areas (Provincial Planning Statement 2024)							
Significant wetlands	Yes Mapped	Yes Mapped	Yes Mapped	Yes Mapped	LIO; NVCA	Yes	High Mapped
Significant woodlands	Yes Mapped	Yes Mapped	Yes Mapped	Yes Mapped	Barrie OP; NHRM	Yes	High Mapped
Significant valleylands	Yes Not mapped	Yes Not mapped	Yes Not mapped	Yes Not mapped	-	No	High Not mapped
Significant wildlife habitat	Yes Not mapped	Yes Mapped (incomplete)	Yes Not mapped	Yes Not mapped	LIO	Yes - incomplete	High Partially mapped
Fish habitat	Yes Not mapped	Yes Not mapped	Yes Not mapped	Yes Not mapped	-	No	Medium Not mapped
Habitat of endangered species and threatened species	Yes Not mapped	Yes Not mapped	Yes Not mapped	Yes Not mapped	-	No	Medium Not mapped
Other Components							
Evaluated wetlands - other	-	Yes Mapped	Yes Mapped	Yes Mapped	LIO; NVCA	Yes	High Mapped
Unevaluated wetlands	-	Yes Mapped	Yes Mapped	Yes Mapped	LIO; NVCA	Yes	High Mapped
Locally significant wetlands	Yes Not mapped	Yes Not mapped	Yes Not mapped	-	-	No	Medium Not mapped
Surface water features	-	Yes Mapped	Yes Mapped	Yes Mapped	OHN; OMNRF; NVCA	Yes	High Mapped
Cultural thickets, cultural meadows, other woodlands	-	-	-	Yes Mapped	-	No	Medium Not mapped
Ecological buffers	-	Yes Not mapped	Yes Not mapped	Yes Not mapped	Barrie OP; NHRM	Yes	Medium Mapped
Linkage areas	Yes Not mapped	Yes Not mapped	Yes Not mapped	Yes Mapped	NHRM	No	Medium Mapped
Corridors	-	-	Yes Mapped	-	-	No	Low Not mapped
Public lands	Yes Not mapped	-	Yes Not mapped	-	-	No	Low Not mapped
Regulated setbacks and wetlands	-	-	-	-	NVCA	Yes	High Mapped
Floodplain	-	-	-	-	NVCA; LSRCA	Yes	Low Mapped
Key Natural Heritage Features, Key Hydrologic Features, and 30 m vegetation protection	-	-	-	-	LIO	Yes	High Mapped

¹ County of Simcoe Official Plan (Office Consolidation February 2023)

² Township of Springwater Official Plan (Office Consolidation June 2020)

³ Township of Oro-Medonte Official Plan (Office Consolidation March 2023)

⁴ City of Barrie Official Plan (May 2024)

Natural Features and Other Constraints	Simcoe County ¹ Natural Heritage component (Yes/-) Mapped/Not mapped	Springwater ² Natural Heritage component (Yes/-) Mapped/Not mapped	Oro-Medonte ³ Natural Heritage component (Yes/-) Mapped/Not mapped	Barrie ⁴ Natural Heritage component (Yes/-) Mapped/Not mapped	Data Source	Mapped Yes/No	Constraint Ranking High/Medium/Low Mapped/Not mapped
zone in the Lake Simcoe Protection Plan watershed boundary							