Environmental Impact Statement and Tree Conservation Report

5494-5510 Boundary Road
Ottawa, Ontario

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Prepared for:

Day & Ross Inc.

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1.0 INTRODUCTION

This Environmental Impact Statement and Tree Conservation Report addresses the existing conditions, potential environmental impacts and mitigations for a proposed development at 5495-5510 Boundary Road, Navan, in the City Ottawa (Figure 1). The subject site consists of three properties (Figure 2):

- 5494 Boundary Road, PIN 043240178 – Zoned RU and currently a residential lot
- 5500 Boundary Road, PIN 043240177– Zoned RH (260r)
- 5510 Boundary Road, PIN 043240161 – Zoned RH (260r)

On this site, the proponent proposes to construct a transfer facility to accommodate 141 vehicles, 55 tractors and 134 trailers. An office building and associated car parking lot are also planned within the development.

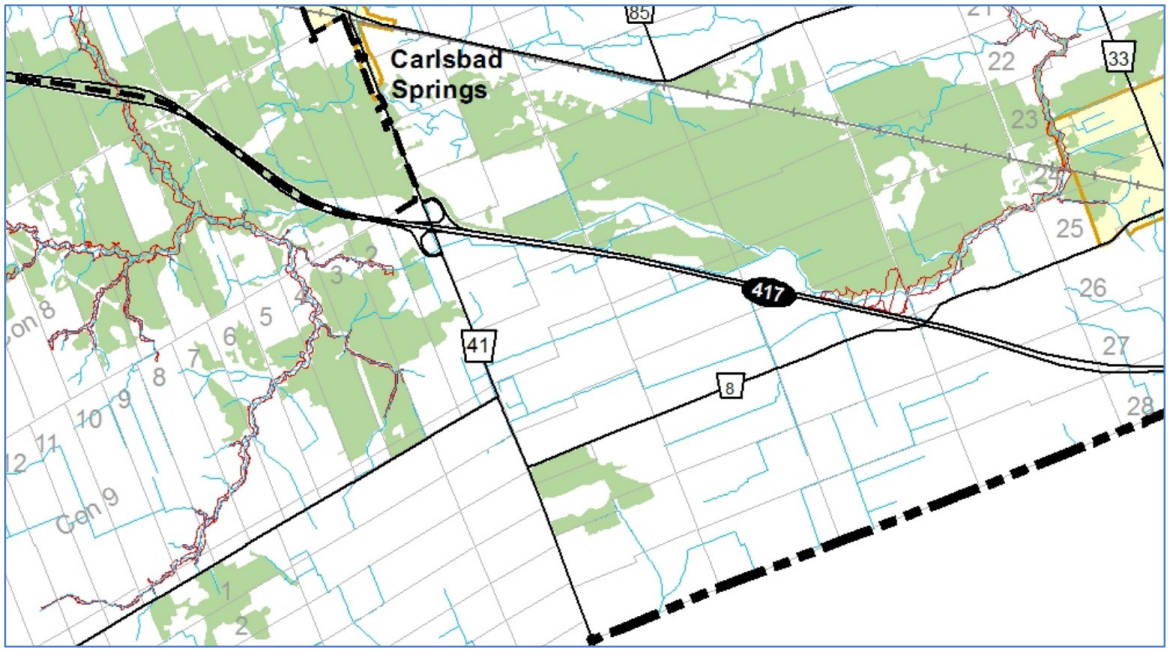


Figure 1 General Location of 5494-5510 Boundary Road. Red circle shows general site location.

Figure 2 Location of 5494-5510 Boundary Road. Parcel mapping shown in yellow. Source: GeoOttawa Dec. 16 2019, imagery date 2017.

1.1 Background and Objectives

A pre-consultation meeting was held at City Hall on 20 January, 2020 in support of a planned Site Plan Control Application and Zoning By-law Amendment application. Subsequently, a requirement for an Official Plan Amendment was identified. The property requires an EIS because it is currently designated as Rural Natural Feature (see 2.1, Environmental Designations) and it must be determined that no negative impacts will occur to any natural heritage features on or within 120 m of the property. Environmental considerations include:

- An identified watercourse along the southern property line of 5494 Boundary Road (Figure 2);
- Potential Significant Woodlands identified to the north and south of the property;
- Unevaluated wetlands identified on the adjacent property to the north;
- Significant Wildlife Habitat as per the Provincial Policy Statement;
- Potential for Species at Risk as per the Ontario Endangered Species Act;

A Tree Conservation Report is required to identify trees on the site and describe protection or mitigation measures.

A Headwater Drainage Assessment was completed by Bowfin Environmental Consulting Inc. (2021a) to evaluate identified headwaters on and adjacent to the subject property. This report describes all headwater features and documents local flow and drainage. An EIS - Fisheries Impact Component was similarly completed by Bowfin Environmental Consulting (2021b) to identify potential impacts to fish and fish habitat as well as avoidance and mitigation measures.

1.2 Approach and Methodology

A desktop review was completed to provide background information on natural heritage features and designations in proximity to the site, as well as a listing of SAR and their habitat potentially documented on or within 1 km of the subject property. Data from NHIC database was accessed via Land Information Ontario (LIO) Make a Natural Heritage Map[1] to determine any SAR or significant features in the general area in which the property is located.

A total of seven site visits were completed to collect information supporting this EIS. Six of these were within the field season by Holly Bickerton (HB) (completing terrestrial surveys and Tree Conservation Report (TCR)) or Bowfin Environmental Consulting Inc (BEC). Several additional visits were completed to conduct fisheries sampling and Headwater Drainage Feature flow assessments (see Bowfin Environmental Consulting for additional dates). The subject lands were investigated as well as adjacent lands within 120 m (Table 1).

Table 1 Site visits dates and conditions

Surveyor	Date	Conditions	Purpose
H. Bickerton	10/12/19	5°C, no snow cover	Initial site visit, watercourse identification, habitat suitability for SAR, wetlands.
Bowfin Inc.	28/4/20	7 °C, clear, light breeze	Blanding's Turtle survey, fisheries, HDA.
Bowfin Inc.	29/4/20	12 °C, overcast, light breeze	Amphibian surveys (evening)
Bowfin Ltd.	17/5/20	17 °C, clear, light breeze	Blanding's Turtle survey, fisheries, HDA.
Bowfin Ltd.	19/5/20	16 °C, clear, light breeze	Amphibian surveys (evening)
Bowfin Ltd.	21/5/20	22 °C, clear, light breeze	Blanding's Turtle survey, fisheries, HDA
H. Bickerton	28/5/20	22 °C, clear, calm	ELC, SAR, TCR, SWH[2], Significant Woodlands, Blanding's Turtle survey, flora and fauna.
H. Bickerton	8/6/20	15 °C, clear, light breeze	ELC, SAR, TCR, SWH[2], wetland boundaries, Blanding's Turtle survey, flora and fauna.
Bowfin Ltd.	16/6/20	20 °C, clear, calm	Amphibian surveys (evening)

[1] http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US

[2] ELC: Ecological Land Classification; SAR: Species at Risk, TCR: Tree Conservation Report; SWH: Significant Wildlife Habitat.

The following information was collected, using standard protocols as identified:

- Ecological Land Classification (ELC, Lee et al. 1998 and updates) for the subject lands;
- Wetland boundary assessment of the adjacent unevaluated wetland (using Ontario Wetland Evaluation System OWES). Evaluation of the entire regional wetland adjacent to the subject site to determine its provincial significance under the OWES was outside the scope of this study, as it would require access to an approximately 100 ha as well as significant inventory, analysis and scoring of this entire area.
- Identification of tree species and vegetation communities on site, and assessment of their function as per Tree Conservation Report Guidelines (City of Ottawa 2020);
- Assessment of Significant Woodlands and Significant Wildlife Habitat (OMNR 2010, Natural Heritage Reference Manual, City of Ottawa 2018);
- Avian surveys using five 10-minute point counts within each representative habitat (Ontario Breeding Bird Atlas 2001); incidental surveys also completed;
- Amphibian surveys completed for headwater drainage assessment following methods in Marsh Monitoring Program (Birds Canada 2020);
- Species at Risk surveys, targeting Butternut, Barn Swallow, Bank Swallow, Wood Thrush, Eastern Wood Pewee, and Blanding's Turtle (see below). Survey requirements for Species at Risk were confirmed with the Ministry of Environment, Conservation, and Parks (MECP) in March 2020.
- Five basking surveys for Blanding's Turtle following Ontario Ministry of Natural Resources (OMNR) protocol (OMNR 2013). Surveys were completed on 28 April (BEC), 17 May (BEC), 20 May (BEC), 21 May (BEC), 28 May (HB) and 8 June (HB). All surveys were completed under appropriate weather conditions as defined by the protocol; coverage of the entire aquatic area of the site occurred over 1.25 to 2 hours on each survey day.
- Visual surveys for bats and suitable habitat were completed in May and June 2020 to identify possible nesting habitat for SAR bats;
- Complete incidental species lists (flora, fauna) from the subject property, including any regionally significant species (Brunton 2005) and/or forest interior bird species.

2.0 EXISTING SITE CONDITIONS

2.1 Environmental Designations

The three lots that constitute the subject site are approximately 8.46 ha in area. They are designated **Rural Natural Feature** (Figure 2) . as a result of a variety of high level/older mapping and study in the 1997 Ottawa Natural Environment and Systems Study (NESS). Despite the site's rezoning and subsequent development in the early 2000s, the two southern lots remain designated as Rural Natural Features and are consequently identified as part of Ottawa's Natural Heritage System. A primary purpose of this EIS is therefore to identify potential for existing natural heritage features on and within

120 m of this site and ensure that no negative impacts on any natural features or ecological functions will occur through the development of the lands.

The subject site is directly adjacent to an unevaluated wetland to the north (Figure 3). There are no designated Provincially Significant Wetlands on or adjacent to the site. Woodlands occur to the north and south of the subject site and will be discussed in section 3.6.4 (Figure 3).

Figure 3 MNRF Wetland mapping. Data from Land Information Ontario (LIO) dataset, MNRF. See unevaluated wetland (open blue at top right) and woodlands north and south of site.

3.0 SITE DESCRIPTION: NATURAL ENVIRONMENT

3.1 Site History

Recent site history is relevant to the Rural Natural Features designation at 5500 and 5510 Boundary Road. Vegetation removal and filling of these two lots occurred from 1999 to about 2017 (based on assessment of historical imagery in GeoOttawa). The current land use is reflected in the zoning (RH or Rural Heavy Industrial). However, the Rural Natural Features designation remains unchanged despite evident changes in land cover, zoning, and land use.

3.2 Geology and Topography

Bedrock underlying the site is sedimentary (limestone, dolostone, shale, arkose and/or sandstone) of the Middle Ordovician era (Ontario Geological Survey 2009; map scale 1:250,000). Surficial geology

consists of more recent (i.e. quaternary) glacial deposits in the form of coarse-textured glaciomarine deposits (sand, gravel, minor silt and clay; Ontario Geological Survey 2003).

However, the ecological function of 5500 and 5510 Boundary Road is dominated by surface aggregate fill of unknown origin, resulting from past land use. Geotechnical investigation reveals that beneath aggregated fill is sand, with little absorption capacity. The two southern parcels that have been filled over the last 20 years are now topographically elevated over adjacent properties. Along the northern edge of the property, fill has been excavated and graded to the adjacent lot. This has resulting in a pond of standing water and a mapped watercourse that conveys water off the property (see 3.3, Water and Drainage Features). There are no steep slopes on the site or in the surrounding area.

3.3 Watercourse and Drainage Features

The subject property is within the Bear Brook sub-watershed of the South Nation River watershed. A Headwater Drainage Report was completed (Bowfin Environmental Consulting Inc. 2021). Headwater Drainage Features have been identified and assessed based on features including hydrology, shading, fish habitat, and other factors (Appendix 1). It appears that the site consists of fill that raised the land and created ditches around the perimeter. These features did not always drain properly, resulting in division of flow. This is identified by splitting the drains to “a” and “b”. The features have been identified and are labelled as:

Boundary Road West ditch (referred to herein as Roadside Ditch) drains south into the Simpson Municipal Drain roughly 200 m downstream.
HDF 1a/HDF 1b: Feature 1 is found along the southeast perimeter of the site, to the east of Feature 2. One part of Feature 1 (Feature 1a) inclines towards the roadside ditch, the other (Feature 1b) towards Feature 2. Feature 1a and 1b were frozen and snow covered on April 7, 2020.
HDF 2: Feature 2 travels from the perimeter of the site, south to Mitch Owens Road (roughly 530 m downstream). This feature also receives water from the treed swamp surrounding it.
HDF 3: Feature 3 is the southwest perimeter ditch. Like Feature 1, this was split into two with only the lower 20 m of Feature 3a directing water to feature 2. The rest of Feature 3a was separated by gradient changes in the ditch which were not overtopped even in early April. Feature 3b inclines towards Feature 4. Feature 3a and 3b were frozen and snow covered on April 7, 2020. All but the lower 20 m of Feature 3a is not fish habitat as it was isolated or connected for Feature 4 (Feature 4 is also isolated).
HDF 4: Feature 4 is found along the west edge of the site. This feature had many barriers to fish movement in the form of small soil berms throughout the northern portion. It was also a dead end on the downstream side, resulting in a deeper pool that was not connected to the other features. This was not fish habitat.
Ponds: Feature 5 is situated along the north side of the site. The west side consists of ponds (labelled as Ponds) and the remainder is a ditch that is connected to the Roadside Ditch. The ponds were created by

the fill activities on-site. One portion of the ponds branched south approximately 80 m into the site. This branch was seasonally separated from the other ponds by a soil berm.

Most features (except for Features 3b and 4) lead to the Simpson Municipal Drain. Features 3b and 4 are isolated and do not contribute flow to any downstream habitat. Two isolated ponds created by excavation of fill are found near the frontage with Boundary Road (Pond 2, Pond 3, Appendix 2. For more information and station data on each Feature, see Bowfin Environmental Consulting (2021a).

3.4 Fisheries

Fisheries considerations as regulated by the *Fisheries Act* were investigated by Bowfin Environmental Consulting Inc. and are addressed in a separate report (EIS – Fisheries Component: 5594-5510 Boundary Road, Bowfin Environmental Consulting 2021b), to satisfy the City of Ottawa's EIS Guidelines. Note that this report is **not** a Fisheries Report as prescribed by the Department of Fisheries and Oceans (DFO).

In summary, six of the features in Appendix 1 are considered fish habitat:

- Boundary Road West Roadside Ditch
- HDF Features 1a,2, 3a (lower 20 m only), 5
- "Ponds" (on northern property boundary, labelled as Pond 1 in Appendix 2)

The remaining headwater features (1 b, 3a (remainder), 3b, and 4) are not considered fish habitat. These features are isolated and/or ephemeral. Offsets incorporated into the site plan as well as potential impacts are discussed in 5.0, Impact Assessment. Classification of each feature is detailed in Bowfin Environmental Consulting HDF 2021).

3.5 Wetlands

Wetlands exist adjacent to the subject property to the north and to the south (Appendix 2). OWES wetland boundaries were mapped adjacent to the subject property and are shown in Appendix 2. These wetlands are greater than 2 ha and are considered functional wetlands using the Ontario Wetland Evaluation System (OWES).

As discussed above, a full OWES wetland evaluation to determine provincial significance of these adjacent wetlands is outside of the scope of this EIS. However, appropriate mitigations have been incorporated to protect and enhance the adjacent wetland features and will be discussed in 5.0 Impact Assessment.

Of the ponds on the subject lands, none are considered wetlands under OWES. Pond 1 and Pond 3 (Appendix 2) are not naturalized, having been recently excavated (< 2-4 years) and contain bare substrate, little vegetation, and open water. Pond 2 has been present in its current form since about 2005 and is now naturalized as a functional shallow Cattail marsh (MAS 3, see ELC results below).

However, at 0.13 ha, this functional wetland is less than the threshold size (2 ha) for consideration as a wetland complex under OWES.

3.6 Vegetation and Tree Conservation Report Information

3.6.1 Vegetation communities on the site

Vegetation communities on the subject lands were identified and mapped according to Ecological Land Classification methods (Lee et al. 1998; Appendix 2). The vegetation communities on adjacent lands were identified and mapped to the extent possible. Note that a wetland vegetation communities identification does not necessarily imply that an area is a wetland according to the OWES system; for details please see 3.5 Wetlands.

The description of wooded communities (e.g. Deciduous Forest) constitutes an inventory and description of the trees currently on the site, including species composition, size, age and health in accordance with Ottawa's Tree Conservation Report Guidelines (City of Ottawa 2020).

Taken as a whole, the subject site has little natural vegetation cover. Both 5500 and 5510 Boundary Road consist mainly of recent fill. The vegetation communities on these properties are early successional and are dominated by non-native vegetation. Approximately half of 5494 Boundary Road is covered by natural vegetation, with the remainder being a residence, landscaped area, and driveway.

A description of each vegetation community on the subject and adjacent lands is found below. Photos of each vegetation community are found in Appendix 3. All vegetation communities found on the site are considered secure in Ontario (NHIC 2020).

Filled area (Photo 1): The majority of the site consists of aggregate fill, and is almost devoid of vegetation (Photo 1). Scattered vegetation in this area (<30% cover, and often less) is dominated by non-native species such as Sweet White Clover (*Melilotus alba*), Cow Vetch (*Vicia cracca*) and Yellow Rocket (*Barbarea vulgaris*).

Fresh-Moist Poplar Deciduous Forest (FOD 8, Photo 2): This mid-successional forest is on the former residential lot at 5494 Boundary Road (northeast corner of site). It is dominated by species characteristic of mesic to moist woodlands (Photo 3). The overstory is dominated by poplars (*Populus grandidentata*, *P. tremuloides, P. deltoides*), with Red Maple (*Acer rubrum*), and Green Ash (*Fraxinus pensylvanica*). The forest is approximately ~40-50 years in age (GeoOttawa 2020). Most trees in this community range between 10-20 cm DBH, with three larger Cottonwoods (*P. deltoides*) with DBH ranging around 30 cm. Trees are in generally good health, with the exception of Ash (*Fraxinus* sp.), which are in poor health or dead. The mid-story is dominated by invasive Glossy Buckthorn (*Frangula alnus*), with Speckled Alder (*Alnus incana* ssp. *rugosa)* toward the watercourse. The understory includes a mix of upland species

including Wild Strawberry (*Fragaria virginiana*), Lady Fern (*Athyrium felix-femina*), Canada Mayflower (*Maianthemum canadense*) and Starflower (*Trientalis borea*lis), with some facultative wetland species such as Sensitive Fern (*Onoclea sensibilis*) and Meadow Horsetail (*Equisetum arvense*).

Cultural Woodland (CUW, Photo 3): The area near the residence at 5494 Boundary Road was previously cleared, but now consists of 75% cover of naturally regenerating young saplings of Trembling Aspen (*Populus tremuloides*), with remaining landscape plantings such as Blue Spruce (*Picea pungens*) and Eastern White Cedar (*Thuja occidentalis*) (Photo 4). Trees are generally in good health, with the exception of planted Jack Pine which is in moderate health. Invasive Common and Glossy Buckthorn dominate the mid-story. Virginia Creeper (*Parthenocissus inserta*), Frost Grape (*Vitis riparia*) and Common Dandelion (*Taraxacum officinalis*) are common in the understory.

Cultural Thicket/Thicket Swamp (CUT/SWT, Photo 4): The community at the edge of the residential lot grading into the watercourse is a mixture of upland and wetland shrubs in a transition zone. Staghorn Sumac (*Rhus typhina*) and Common and Glossy Buckthorn dominate toward the residence. Slender Willow (*Salix petiolaris*), Speckled Alder (*Alnus incana* ssp. *rugosa*) and other wetland plants dominate toward the mapped watercourse. These communities are described together because they represent an ecotone and are too small to map as separate units.

Shallow Aquatic Cattail Marsh (MAS, Photo 5): This pond (Pond 2 in Appendix 2) was created on the site around 2003 as a result of excavation for previous industrial use (GeoOttawa 2020 and GoogleEarth 2020). Non-native Narrow-leaved Cattails (*Typha angustifolia*) dominate the pond, which also contains Common Reed (*Phragmites australis* ssp. *australis*) (Photo 5). Submerged aquatic vegetation (*Potamogeton* sp.) is also present. The pond is surrounded by shrubs including Slender Willow (*Salix pedicellaris*), Staghorn Sumac (*Rhus typhina*), and saplings of Balsam Poplar (*Populus balsamifera*).

Cultural Meadow (CUM, Photo 6): This area is regenerating as early successional meadow, dominated by non-native species (e.g. Smooth Brome (*Bromus inermis*), Yellow Rocket (*Barbarea vulgaris*), Wild Carrot (*Daucus carota*)), with occasional natives including Common Milkweed (*Asclepias syriaca*).

Deciduous Fencerow: At the western margin of the property is a narrow fencerow with Poplar, Elm and Red Maple, and willows (e.g. Slender Willow) near the drainage line here.

3.6.2 Vegetation communities within 120 m

Vegetation communities on adjacent lands within 120 m are described below, to evaluate potential impacts of the proposed development. Representative photos are found in Appendix 3.

Fresh-Moist Red Maple Deciduous Forest (FOD 7, Photo7): To the north of the site, there is a Red Maple forest, with White Elm and Poplar. Glossy Buckthorn is common in the shrub layer; the

understory contains upland species such as Lady Fern, Wild Sarsaparilla (*Aralia nudicaulis*), and Canada Mayflower.

Red Maple Mineral Deciduous Swamp (SWD 3-1, Photo 8): There are two parcels of Red Maple mineral swamp adjacent to the subject site. To the north of the site, the Red Maple forest grades gradually into a Red Maple Deciduous Swamp. Canopy associates in the swamp include Black Ash (*Fraxinus nigra*), with Glossy Buckthorn and Speckled Alder in the mid-story. There is substantial coverage by facultative and obligate wetland plants such as Royal Fern, Sensitive Fern, Dwarf Raspberry (*Rubus pubescens*), and Bladder Sedge (*Carex intumescens*). A second, younger Red Maple Deciduous Swamp (SWD 3-1) is found to the south of the site. Soils in both areas were mainly dry in June 2020 with scattered damp depressions, and both of these areas consist of mainly of mineral soils.

Willow Deciduous Plantation (Photo 9): This polygon has no ELC code because it is planted and there it is a very unusual vegetation type for which no code exists. It was planted in the 1980s or 1990s in Crack Willow (*Salix* x *fragilis*), a non-native tree willow (GeoOttawa imagery); rows are still apparent within the woodland. The understory has naturalized with mostly native facultative wetland species including Sensitive Fern, Dwarf Raspberry, and Royal Fern (*Osmunda regalis*) and it is considered to be a wetland for this reason, according using OWES criteria. The mid-story is dominated by invasive Glossy Buckthorn (*Frangula alnus*).

White Spruce Coniferous Plantation (CUP3, Photo 10): This plantation was similarly planted in the 1980s or 1990s (GeoOttawa imagery), and was previously an agricultural field. It is dominated by planted White Spruce (*Picea glauca*) and now also contains some Large-tooth Aspen (*Populus grandidentata*), White Birch (*Betula papyrifera*) and Glossy Buckthorn with an understory of mostly upland and some facultative wetland species. It is therefore considered to be functionally an upland community, based on the percent cover of naturally occurring native vegetation present in all vegetation layers following OWES criteria.

In summer 2020, the agricultural field to the west was fallow/pasture, and the field to the southwest was in cultivation (Appendix 2).

3.6.3 Vascular Plant Species and Significant Vegetation

Surveys found that 87 vascular plant species were found on the subject lands (Appendix 4). No provincially significant (S1-S3, NHIC 2020) or regionally significant vascular plant species (Brunton 2005) were observed on the site. Note that although native stands of Jack Pine are considered Regionally Significant, individuals present on the formerly residential property were planted.

Thirty-four species (39%) on the site are considered non-native in Ontario. This is a high percentage of non-native plant composition, reflecting the disturbed site history.

3.6.4 Significant Woodlands

The City of Ottawa recently adopted the NHRM criteria for Significant Woodlands (OMNR 2010) to assess those woodlands within Ottawa's rural area. None of the woodlands on the subject property (i.e., FOD 8) meet the NHRM criteria for Significant Woodlands (City of Ottawa 2018).

The adjacent forest to the north meets the following NHRM criteria for Significant Woodlands based on its size >20 ha) for the Ottawa East- Bearbrook Rural Planning Area (29.9% forest cover, City of Ottawa 2018). It also meets the criteria based on Ecological Function, containing > 2ha woodland interior, and providing ecological linkages within a defined natural heritage system. Other criteria could not be evaluated without full investigation.

The adjacent wooded areas to the south of the subject property consist mainly of unmanaged plantation (CUP) mixed with an area that has naturalized to Deciduous Swamp. The Natural Heritage Reference Manual (OMNR 2010) considers that "plantations…can be considered to be woodlands," in cases where the assumed purpose is permanent reforestation. This 20.5 ha unmanaged wooded area contains more than 2 ha of functional woodland interior, and more than 2 ha of functional interior forest. Other ecological functions, uncommon characteristics and economic and social values are not known without full investigation, but based on available evidence it can be considered as a Significant Woodland, mainly due to the size and naturalization of the understory and mid-storey.

Mitigating buffers will be discussed in Section 5.0, Impact Assessment and Mitigation.

3.7 Wildlife Observations

Twenty-four bird species were observed or heard on the site during two field visits, at four five-minute point counts (completed on two dates) and incidental survey across the property (Appendix 5). Of these, none are considered forest-interior species and all are considered secure in Ontario (S4 or S5). Species at Risk observations are discussed in section 3.6, below.

An additional nine bird species were observed or heard in areas adjacent to the site. Two of these species are considered to be area-sensitive forest interior species (Great-crested Flycatcher and Veery), reflecting the wooded nature of the adjacent area.

A total of six amphibian species were heard or observed on the subject lands during field visits: (Green Frog (1), Northern Leopard Frog (1), Wood Frog (1), Spring peeper (3), Gray Tree Frog (1). American Toad was also heard on adjacent lands.

Two reptile species were observed (Painted Turtle (S5) and Snapping Turtle (S4, SC)). Three mammal species were observed (Eastern Gray Squirrel (S5), Eastern Chipmunk (S5) and White-Tailed Deer (S5). Species at Risk observations are discussed in section 3.6, below.

3.8 Species at Risk

A review of the NHIC database identified no records of any SAR observations within 1 km of the site. SAR surveys therefore targeted the species in the Ottawa area for which suitable habitat was present. Survey scope and methods were confirmed with MECP prior to initiating fieldwork (Carolyn Hann, pers.comm. 2020).

Two regulated species under the ESA, Bank Swallow and Barn Swallow, were observed on the subject lands. One Special Concern species, Snapping Turtle, was observed on the subject lands. Observations are described below.

Bank Swallow (THR): On 28 May 2020, a small flock of Bank Swallows (10-20) was observed flying over Pond 3 at the front of 5500 Boundary Road. On 5 June, one Bank Swallow was observed flying over the property. All open faces of loose fill on the property, especially the banks of Pond 3, were investigated for the presence of nest cavities and none were found. Bank Swallows are believed to be using the pond as feeding habitat: individuals were observed on 28 May flying back and forth across Boundary Road to a sand and gravel pit. As feeding habitat only, the subject site is considered Category 3 habitat under the Ontario ESA (C. Hann, pers.comm. 2020).

Barn Swallow (THR): One Barn Swallow was observed over Pond 3 in May 2020 by Bowfin Environmental. Barn Swallows (THR) use residential buildings and structures for nesting. The residence on the site was carefully examined and no nests were found. As with Bank Swallow, this is considered Category 3 habitat under the Ontario ESA (C. Hann, pers. comm. 2020).

Snapping Turtle (SC): One Snapping Turtle was observed within Feature 5 (see Appendix 1). This watercourse, connected to Pond 1, is likely habitat for Snapping Turtle on the site; see discussion in Significant Wildlife Habitat (see 3.8.1).

An Eastern Wood-Pewee (SC) was heard on adjacent lands to the south of the site, within 120 m.

Other potential SAR: There were no other SAR observed on or within 120 m of the subject lands.

- No Butternuts were observed, following searches of all wooded areas on the subject property and along property margins.
- No Blanding's Turtles were observed during five basking surveys of all standing water and ditches, following the Ontario protocol (MNR 2013).

- No bats were observed during observation of tree cavities and near the residence on the site.
- There is Common Milkweed on the site, but no Monarch (SC) were observed.
- All open gravel areas were thoroughly searched for Common Nighthawk (SC) on two occasions; no individuals or nests were observed.
- Wood Thrush (SC) were not heard or observed in adjacent forest.

There is no suitable habitat for other known Ontario-listed SAR on this site. For example, there is no habitat for meadow species such as Eastern Meadowlark (THR) or Bobolink (THR). The moist wooded area adjacent to the residence is unsuitable for Common Whippoorwill (THR) and American Ginseng (END).

3.8.1 Significant Wildlife Habitat

As a Special Concern species, the habitat of Snapping Turtle is considered Significant Wildlife Habitat under the PPS. The permanent Headwater Drainage Features (Features 5 and 7) and the connected Pond 1 are considered Significant Wildlife Habitat. Mitigations will be addressed in Section 5.1.3.

No other Significant Wildlife Habitat as defined in the Ontario Natural Heritage Reference Manual (e.g. wildlife staging areas, congregation areas, colonial nests, significant vegetation communities, regionally rare plant species) was observed on the site.

3.9 Terrestrial Corridors and Linkages

There is insufficient natural vegetation remaining on this site to provide terrestrial corridors or wildlife linkages to the surrounding area.

Aquatic connection and linkages are described in the Headwater Drainage Features Assessment (Bowfin Environmental Consulting 2020).

4.0 DESCRIPTION OF PROPOSED PROJECT

4.1 Transfer Facility Design

The proponent, Day and Ross Ltd., proposes to construct a freight terminal consisting of a central warehouse cross dock along the centre of the property (east-west), surrounded by a truck and trailer parking and staging area for 55 tractors and 134 trailers (Appendix 6, Proposed Site Plan). The entry from Boundary Road into the freight terminal is to be constructed at the north end of the property.

The development includes an office building near the Boundary Road frontage, with associated parking (141 parking spaces). Vehicle entry to the office parking lot is via a separately constructed southern entry from Boundary Road.

It is understood that the proposed site plan would require clearing existing vegetation, grading, and construction on the entire site. The central portion of the site will be paved to accommodate the transfer facility. However, mitigation and restoration have been integrated into the Site Design to a) protect existing natural features adjacent to the site and b) restore and enhance disturbed natural areas lost elsewhere on the site.

4.2 Grading and Drainage Design

Stormwater management is to be accomplished via a semi-permeable and naturalized sand around the perimeter of the development. Swales are intended to preserve groundwater flow to channels surrounding the site, while conveying surface runoff from the parking area to detention dry ponds for stormwater management.

Surface water from the parking area flowing to the western and southern margins of the property will be conveyed via swales along the southern perimeter of the property, to a dry pond at the southwest corner and discharged via culvert to Boundary Road.

Surface runoff from the northern edge of the transfer facility area will be directed to a semi-permeable swale. Runoff from this swale will be directed via culvert to a dry grass swale along the Boundary Road frontage.

4.3 Setbacks and Restoration Area Design

The proposed site plan incorporates protective setbacks and wetland restoration. Detailed plans including pond depths, habitat features, and revegetation species are pending through a Restoration Plan, Landscape Plan or similar.

Northern setbacks: Pond 1 and Feature 5 are will be realigned and restored along the northern edge of the subject site, adjacent to the wetland. The restored Pond 1 will be entirely disconnected from the semi-permeable swale network collecting surface flows at the site, receiving only minimal filtered water from the separately draining semi-permeable sand swale. This restored pond feature will drain via a culvert to Boundary Road. The realigned and restored pond and channel feature will be approximately 0.35 ha in surface area, to maintain required fish habitat (see EIS - Fisheries Component, Bowfin Environmental Consulting). Where possible, the new alignment will consider natural channel design, include a series of pools of variable depth, and naturally graded shorelines with native plantings. The

aim is to improve water quality and habitat diversity over the existing conditions for aquatic species, including fish and turtles.

The perimeter swale is disconnected from the restored pond feature and will also be revegetated. The result will be a restored pond and vegetated setback that extends approximately 45 m from the adjacent wetland to the edge of pavement.

Southern setbacks: Along the southern boundary with the adjacent wetland, the perimeter swale will also convey any surface water to a detention dry pond. The swale will form a vegetated setback from the adjacent wetland ranging from 12 – 26.5 m from the property edge.

Impacts and recommended avoidance and mitigation for natural features and functions are discussed below.

5.0 IMPACT ASSESSMENT AND MITIGATION

5.1 Potential Negative Impacts and Mitigation

Potential impacts are summarized within Table 2, together with detailed mitigation measures.

5.1.1 Adjacent Wetlands

As described above, it is understood that impacts to the adjacent wetland (SWD 3-1) to the north will be mitigated with a restored and naturalized setback that extends 45 m from the original wetland boundary (along the property boundary) to the edge of development. The intervening area, including the sand treatment swale, will be vegetated. It is understood that the pond will be restored to a natural shoreline, with pools of varying depths. It is recommended that riparian areas and perimeter swale be revegetated with native vegetation to the extent possible, including trees and shrubs common on and adjacent to the subject property.

Potential sedimentation and erosion during site preparation and construction is to be avoided and mitigated with appropriate general mitigation measures (Table 2, Headwater Drainage Feature Assessment and EIS - Fisheries Component). Following construction, surface runoff from impermeable surfaces of the transfer facility will be directed via the closed sand swale system to detention dry ponds before being conveyed to the roadside ditch.

The area between the adjacent wetland to the south (Willow plantation and SWD 3-1) and the edge of pavement, which currently is currently devoid of most vegetation, will be regraded to form the perimeter swale and revegetated. As above, the sand swale system will promote infiltration of storm events into the sand overburden layer, while directing any surface runoff from the transfer facility away from the wetland toward detention dry ponds and the roadside ditch. The sand overburden layer is

underlain with various clay layers, resulting in a perched water table and resultant generally wet soils. The purpose of the sand swale is to replicate the infiltration that is currently occurring due to the imperfect drainage on the site. The water table surrounding the proposed development should remain unchanged, and there should be no hydrological impacts on adjacent wetlands.

5.1.2 Other considerations regarding the watercourse and surrounding drainage are addressed in an accompanying Headwater Drainage Assessment (Bowfin Environmental Consulting). Fish Habitat

Fish habitat exists in Features 1a, 2, 3a (part), 5, 6, Pond 1, and the Boundary Road West ditch. Most existing features (1, 2, 3, 4, 6, and 7) will not be directly impacted by impacted by the proposed development because they will continue to receive the same water quantity and quality.

It is understood that the following will be included to minimize potential impacts to fish and fish habitat:

- All permanent disturbances will be a minimum of 15 m from the realigned and created habitat; the infiltration swales will be within the 15 m buffer which meets provincial guidelines for warm water systems in the NHRM (OMNR 2010). Per the NHRM, Table 11-3 on Page 106 notes that for warmwater streams, the recommended minimum natural vegetated cover adjacent to fish habitat *"30 m or 15 m where it is demonstrated as satisfying policy 2.1.6"* This 15 m buffer represents an improvement for this site, which currently has no on-site buffers, and flows into roadside ditches.
- A new and properly sized culvert will be installed from the roadside ditch for fish passage (see Serviceability Report, Novatech 2021).
- Properly designed and constructed dry ponds will be situated within the 15 m buffer from the Boundary Road ditch. It is recommended that this outlet be designed to prevent fish from entering the facility from the Roadside Ditch.
- Realignment of Feature 5 and Pond 1 will be redesigned (pending) from 0.27 ha to 0.35 ha.
- Repair of channels will improve current configuration which leads to shallow hot water likely resulting in fish traps.

Additional recommended avoidance and mitigation measures are included in Table 2 and also in the EIS - Fisheries Component (Bowfin Environmental Consulting 2021b). Note that final design of the realigned watercourse will be completed during the site plan approval stage. It is recommended that a Request for Review be submitted to DFO prior to completing any works in fish habitat (Roadside Ditch, Features 1a, 2, 5 and the connected Pond 1).

5.1.3 Adjacent Significant Woodlands

Significant Woodlands are present to the north and south of the site and will be protected by restored and naturalized setbacks as described above. At the north boundary, vegetated setbacks to the Significant Woodlands range from 27.0 to 45.2 m. To the south of the site, vegetated setbacks to

Significant Woodland range from 11.9 m to 26.50 m including the naturalized swales. This represents an increase over the current status.

5.1.4 Significant Wildlife Habitat

Significant Wildlife Habitat (Snapping Turtle (SC) habitat) will be maintained by the restoration of Pond 1 and Feature 5 with an aim of improving habitat quality. The feature will be contoured, with variable depths and a natural shoreline. The current area of 0.35 ha will be retained and restored using natural design principles where possible. Standard mitigations are recommended during construction, including watercourse realignment, including vertebrate salvage during excavation (see Table 2).

5.1.5 Species at Risk

An open excavated pond on the site (Pond 3, approximate area of 2000 m^2) constitutes Category 3 Bank Swallow and Barn Swallow habitat under the Ontario ESA. This will be removed as a result of development. Open water will remain on the site in the restored pond and channel along the north lot line.

Filling of Pond 2 and Pond 3 will occur outside of the active season (20 April to 1 September) when Barn Swallow and Bank Swallow are not present in the Ottawa area and are not using this feature. Communication with the Ministry of Environment, Conservation and Parks to date indicates that this mitigation and timing were deemed to be reasonable under the Ontario ESA (Carolyn Hann pers.comm., Appendix 7).

Table 2 Potential Impacts and Proposed Mitigation of development at 5494-5500 Boundary Road

Activity	NH Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
Site preparation				
Clearance of existing terrestrial vegetation. Grading of site to accommodate site plan.	Vegetation communities (no significant features, SWH, Significant Woodlands) Category 3 feeding area for Bank Swallow/Barn Swallow	Loss of some native vegetation at 5494 Boundary Road. Replacement of Category 3 SAR feeding habitat Potential harm to migratory birds or habitat (MBCA) Potential compaction or physical damage to trees and vegetation on adjacent land	• *Native vegetation to be restored within Pond 1 restoration area.* • *Restoration areas to use locally native plant species, including native trees where possible, and locally sourced where possible.* • *Category 3 SAR habitat (Barn/Bank Swallow feeding habitat) to be replaced by enhanced vegetated restored pond feature along north boundary of site.* • *Vegetation removal to occur outside of bird breeding period (May 1 – July 30) to ensure compliance with the federal Migratory Birds Convention Act (MBCA)* • *There will be no change in grade within the Critical Root Zone (CRZ) of trees on adjacent lands. Temporary tree protection fencing to be established at the CRZ of trees located adjacent to grading/construction areas. No equipment or stockpiling within CRZ. See additional measures in 6.1.2.* • *Signage will be posted every 15-20 m along protective fencing, indicating that 1) fencing is to protect trees and their critical root zones, 2) the fence is not to be moved and 3) the fence is to be maintained until construction is complete.*	• Replacement of areas of native vegetation on site. • Increased vegetated areas protecting adjacent features. • Increase in quality and area of functional native riparian habitat associated with restoration • Compliance with ESA, MBCA, PPS.
Watercourse realignment	Fish and fish habitat Snapping Turtle habitat (SWH)	Alteration or loss of fish habitat	• *Preservation of fish habitat through restoration of Pond 1 and watercourse;* • *Increase in habitat quality;*	• Minimized disturbance to existing fish habitat while realigning watercourse and

Activity	NH Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
			• *See additional avoidance and mitigation measures in EIS - Fisheries Component, Bowfin EC 2021.*	improving aquatic and riparian habitat quality
		Alteration of loss of SWH (Snapping Turtle)	• *Preservation of SWH (Snapping Turtle habitat) due to watercourse realignment/restoration and improvement in habitat quality through improved diversity and increase of vegetated setbacks;*	• SWH (Snapping Turtle habitat) in Pond 1 and watercourse retained; improvement in habitat quality.
		Sedimentation and/or erosion to watercourse	• *No in-water works within fish habitat between March 15 and June 30 inclusive; excavation is to avoid periods of rain to minimize erosion.*	• Avoidance of harm to aquatic vertebrates during site preparation
		Potential for direct harm to warmwater baitfish and/or turtles, including Snapping Turtle (SC)	• *Erosion and sediment control measures to be installed prior to any clearing of vegetation and within 30 of the watercourse, and maintained in place until 80% vegetative cover is in place to stabilize banks* • *Aquatic vertebrates encountered in construction area to be removed and relocated to a safe area nearby.*	
Construction				
Realignment of watercourse	Watercourse, aquatic life	Fish and fish habitat disturbance Sedimentation, erosion of shoreline	• *No in-water works within fish habitat between March 15 and June 30; stabilization or revegetation immediately; excavation to avoid periods of rain to minimize erosion.* • *Contractor to develop Erosion and Sediment Control Plan. Sediment and erosion control measures to be used and maintained throughout construction as above.*	• Prevention of harm to aquatic vertebrates constructon • Erosion minimized through use of appropriate techniques.

Activity	NH Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
			• *In-water works are to be conducted in that isolated area only, using appropriate techniques to control turbidity.* • *Machinery working within 30 m of water will be well maintained, free of leaks.* • *Machinery entering the site should be cleaned to minimize the introduction of invasive species (e.g. Common Reed, Reed Canary Grass).* • *See additional detailed recommended measures in EIS - Fisheries Component (Bowfin Environmental Consulting Inc.)* • *Once Restoration plan (including realignment design and plantings) is complete it will be reviewed by a qualified biologist familiar with native vegetation.*	
Infill of offline Ponds 2 and 3	SAR Category 3 feeding habitat (Barn Swallow, Bank Swallow)	Removal of feeding habitat during active season	• *Ponds to be filled outside of active season (April 10 – Sept 1).*	• No effect on active feeding habitat during construction.
Paving and construction of structures	Adjacent Significant Woodland,	Compaction of Critical Root Zone and damage to adjacent vegetation	• *Equipment storage and stockpiling will be on site only, and outside of CRZ.* • *See Tree Protection Measures in 6.1.2.*	
Operation				
Effluent from parking operations and/or spills	Adjacent wetland, restored watercourse	Chemical inputs to wetlands, sediments, habitat disturbance.	• *Surface runoff directed to closed, vegetated semi-permeable sand swale network surrounding the site.* • *Swales to convey to detention dry ponds before release to ditch along Boundary Road.*	All site runoff prevented from contact with adjacent wetland areas. No chemical inputs, sediments, or habitat disturbance to adjacent wetlands. Vegetated buffer providing protection increased over existing condition.

6.0 TREE CONSERVATION: MITIGATION AND PROTECTION

6.1.1 Conserved and Impacted Vegetation

The development of the property will require changes to grading and establishment of impervious surfaces that will require the removal of most of the existing vegetation on the site. Vegetation on the residential lot at 5494 Boundary Road will be removed. This mainly impacts the naturally-occurring Fresh-Moist Poplar Deciduous Forest (FOD 8), estimated at 0.24 ha. Other vegetation communities impacted at 5494 Boundary Road are anthropogenic, including the Cultural Woodland (0.08 ha), Cultural Thicket/Swamp Thicket (0.13 ha), as well as mostly non-native landscape trees on the developed residential lot. For site plan overlay as per Tree Conservation Report Guidelines, please see Appendix 6.

Vegetation in the Deciduous Fencerow at the western property boundary is to be retained.

6.1.2 Tree Protection Measures

Tree protection measures described in this section are intended to ensure the survival of trees on the subject and adjacent lands during the construction period and for the future. Tree Protection measures should be applied along the wooded area of the northern property line (SWD 3-1 or unevaluated wetland and FOD 7, Red Maple Forest), and along the western property line (Deciduous Fencerow).

Recommended measures include the following:

- Where excavation is adjacent to wooded areas to be retained or on adjacent lands, temporary tree protection fencing should be established at the Critical Root Zone (CRZ) of trees located next to construction. Fencing should remain upright and in good repair throughout construction to avoid injury or compaction to the upper roots of the adjacent trees. Within the CRZ, the following must not occur:
    - Disturbance or grade alteration unless approved, including addition of fill or excavation
    - Storage or disposal of materials, equipment, fill, waste or contaminants
    - Movement of vehicles or equipment.
    - Affixing of notices to trees.

- Signage will be posted every 15-20 m along protective fencing, indicating that 1) fencing is to protect trees and their critical root zones, 2) the fence is not to be moved and 3) the fence is to be maintained until construction is complete.

- Exhaust from equipment should not be directed toward the canopy of adjacent trees.
- Periodic monitoring of retained trees and those on adjacent lands during and after construction is recommended to ensure that protection has been successful.

6.1.3 Tree Clearance

Tree clearance will occur outside of the bird breeding season (April 15 to August 15), unless authorized by a qualified biologist to ensure no active migratory birds nests are within the area to be removed.

6.1.4 Restoration Recommendations

It is understood that a portion of the subject property is to be restored to natural conditions, including a pond, channel and riparian areas along the northern property boundary, as well as revegetated swales along the perimeter of the subject lands. There is a perimeter area of approximately 3.06 ha available to replace native vegetation which will be revegetated following construction. To the extent possible, it is recommended that this area be restored in vegetation including native vegetation, primarily Shallow Marsh (MAS), Meadow Marsh (MAM) and riparian Swamp Thicket (SWT) but including native trees wherever possible. Details will be outlined in a Restoration Plan prior to construction. Where possible, planting of native trees will be incorporated into the Restoration Plan.

The following recommendations are made for the restoration of areas adjacent to wetlands and streams:

- The Restoration Plan (or similar) should be developed with the participation of a qualified biologist during the Site Plan Control application stage. This plan will provide site specific information on the setbacks and tree species. This plan should include a figure that illustrates setbacks and buffers. A Monitoring Plan should be incorporated into the Restoration Plan to identify that the restoration functions as planned.

- Tree species that were previously common on the site and in the adjacent area (Appendix 2) should be prioritized for planting selections, subject to site suitability, e.g. Red Maple, Balsam Poplar, Trembling Aspen, Eastern Cottonwood, American Elm, and used where appropriate based on final grading and site suitability.

- All vegetation (whether plugs, seeds, or container stock) selected should be of native species, sourced from local stock subject to availability.

- Both the final list and plantings received should be approved by a qualified biologist prior to installation.

- Non-native and invasive species are not to be used within restoration areas.

SUMMARY AND RECOMMENDATIONS

The proponent, Day and Ross Inc. propose development of a transfer facility for tractor-trailers together with an office building and associated parking on the subject site at 5494-5500 Boundary Road. Despite changes in zoning and land use, the subject site remains designated as a Rural Natural Feature and is part of Ottawa's Natural Heritage System. This EIS/TCR identifies existing natural heritage features on

and within 120 m of this site and ensure that no negative impacts on any natural features or ecological functions will occur.

Site visits were completed in winter 2019 and spring-summer 2020 to examine environmental considerations, including wetlands, watercourses and drainage, fisheries, vegetation, wildlife, Significant Wildlife Habitat, Significant Woodlands and Species at Risk. SAR surveys were completed in 2020 following MECP scoping based on habitat suitability. A Headwater Drainage Assessment and EIS - Fisheries Component were completed and submitted together with this EIS.

There are no OWES wetlands on the subject site; however, wetlands exist to the north and south Mitigating setbacks of approximately 45 m will be employed adjacent to the OWES wetlands and between 27-45 m of the Significant Woodlands to the north of the site, with a restored and revegetated pond and watercourse proposed in this area as part of the site design. The area of fish habitat will be preserved through this and improved in quality. Vegetated setbacks of 12-26.5 m along the southern boundary represent an increase in vegetated area over the current condition.

All surface water from the transfer facility is to be directed to a separate swale and detention pond system before release to the ditch on Boundary Road, and will not interact with wetlands adjacent the property.

Snapping Turtle habitat in Pond 1 and its connected watercourse is considered to be Significant Wildlife Habitat on the subject site. This habitat will be realigned with no loss in area (as per *Fisheries Act* requirements for fish habitat) and improvements in quality.

Feeding habitat of Barn Swallow and Bank Swallow, both Species at Risk, is considered Category 3 habitat and is not considered limiting within the area. No breeding habitat of either species was found.

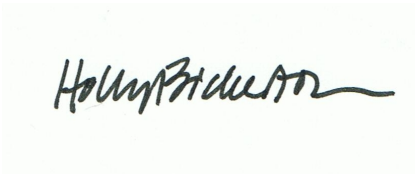
Approximately 0.24 ha of native forest vegetation (an early to mid-successional poplar forest) will be removed due to the proposed development, together with 0.13 ha of anthropogenic early successional habitat). This woodland contains no significant features. To the extent possible, native vegetation including shrubs and trees, is recommended for use in the revegetated area of 3.06 ha on the property, including a restored pond, associated watercourse, riparian area and vegetated water treatment swales.

Many additional recommended mitigations are detailed in Table 2, including timing windows, monitoring, erosion and sediment control measures; fisheries and drainage related avoidance and mitigation measures are outlined in reports by Bowfin Environmental Consulting Inc.

It is my professional opinion that with the avoidance and mitigation measures proposed, the proposed development and proposed mitigations will not have a negative impact on the ecological features and

functions of the applicable natural heritage areas, in particular the adjacent wetlands, Significant Woodlands, or Species at Risk.

The information contained in this EIS is accurate and complete, to the best of my knowledge. Please contact me if you have any questions.



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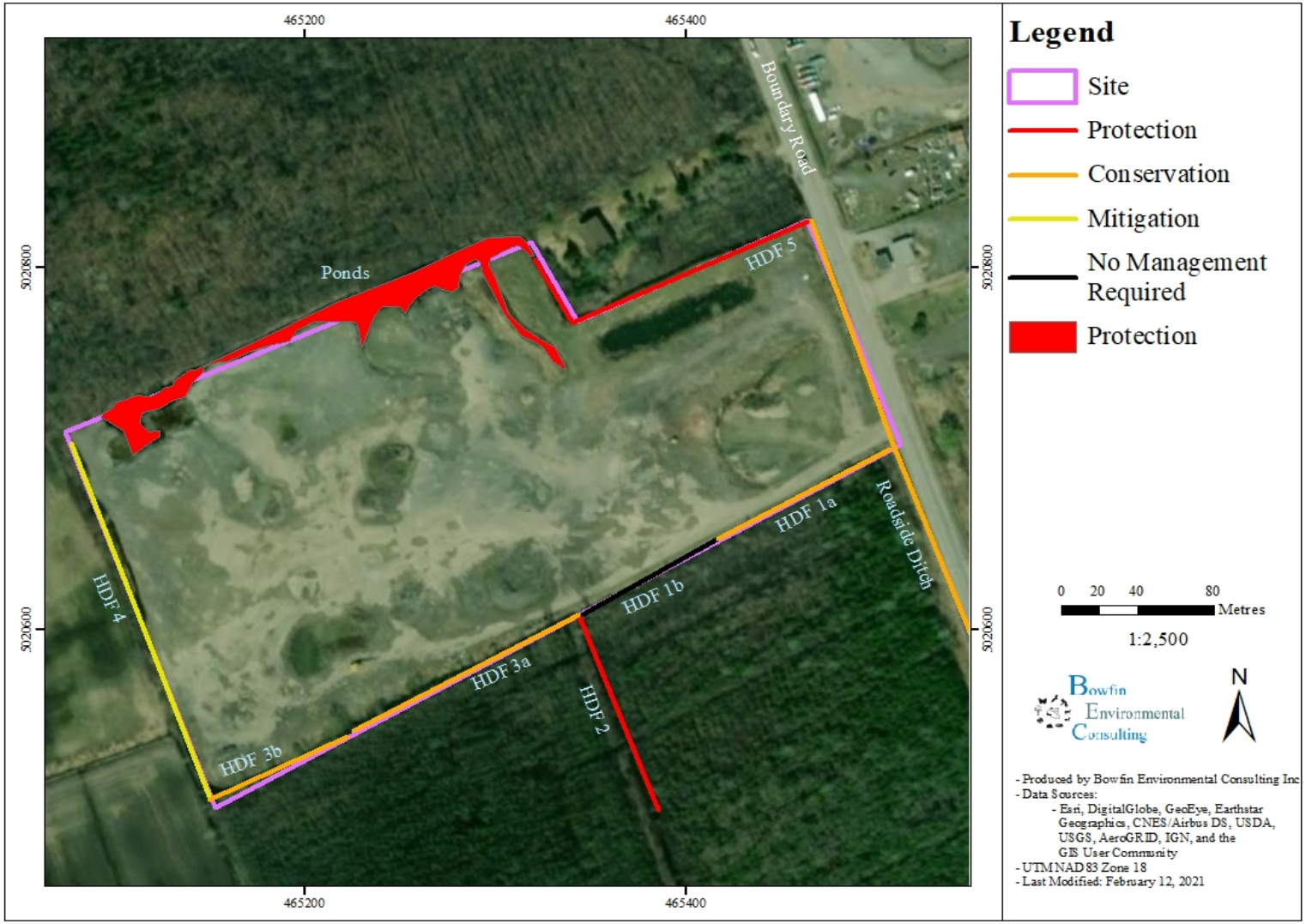
8.0 LIMITATIONS

The investigations undertaken with respect to this report and conclusions or recommendations reflect the consultant's professional judgement based on the site conditions observed at the time of the site inspection, on the identified dates, and on information available at the time of preparation of this report. The report has been prepared for a specific application to this site and is based in part upon visual observation of the site. These observations occurred at various locations during a specific time interval as outlined in the report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, or to portions of the site which were not subject to the direct investigation.

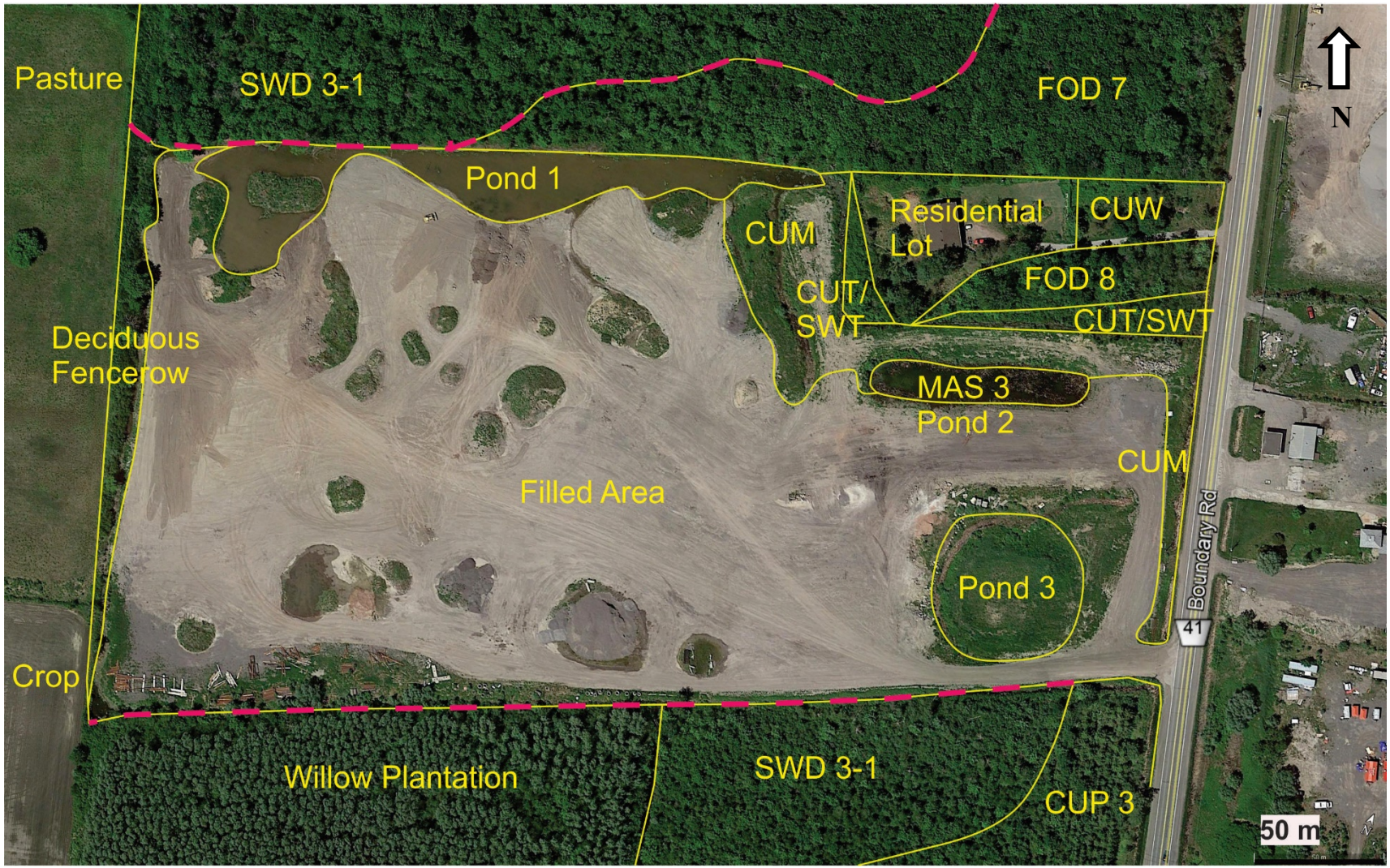
If site conditions or applicable standards change, or if additional information becomes available, then modifications to the conclusions and recommendations in this report may become necessary.

Appendix 1 Watercourse and other drainage features, 5494-5510 Boundary Road. Outlines of water features may differ slightly from 2017 imagery (GeoOttawa). Figure by Bowfin Environmental Consulting Inc. 2021a.



Appendix 2 Vegetation Communities and OWES wetlands on and adjacent to the site.

OWES boundaries are identified with red dashed line. CUM: Cultural Meadow; CUT: Cultural Thicket; SWT: Swamp Thicket; CUW: Cultural Woodland; FOD8: Poplar Forest; MAS3: Cattail Shallow Marsh; SWD 3-1: Red Maple Swamp; FOD 7: Red Maple Forest; CUP 3: White Spruce Plantation.



Appendix 3 Photos of Vegetation communities

Photo 1. Filled Area

Photo 2. Fresh-Moist Deciduous Poplar Forest (FOD 8)

Photo 3. Cultural Woodland (CUW)

Photo 4. Cultural Thicket/Thicket Swamp (CUT/SWT)

Photo 5. Shallow Cattail Marsh (MAS), Pond 2

Photo 6. Cultural Meadow (CUM)

Photo 7. Fresh-Moist Red Maple Deciduous Forest (FOD7)

Photo 8. Red Maple Mineral Deciduous Swamp (SWD 3-1)

Photo 9. Willow Deciduous Plantation

Photo 10. White Spruce Coniferous Plantation (CUP3)

Appendix 4 Vascular Plant species observed

BOTANICAL NAME		COMMON NAME	Regional Status	Prov. Status[3]
Acer	*rubrum*	Red Maple	Common	S5
Alnus	*incana ssp. rugosa*	Speckled Alder	Common	S5
Ambrosia	*artemisiifolia*	Ragweed	Common	SNA
Anemone	*canadensis*	Canada Anemone	Common	S5
Apocynum	*androsaemifolium ssp. androsaemifolium*	Spreading Dogbane	Common	S5
Arctium	*minus*	Common Burdock	Common	SNA
Arisaema	*triphyllum*	Jack-in-the-pulpit	Common	S5
Asclepias	*syriaca*	Common Milkweed	Common	S5
Athyrium	*filix-femina*	Northern Lady Fern	Common	S5
Barbarea	*vulgaris*	Yellow-rocket	Common	SNA
Betula	*papyrifera*	White Birch	Common	S5
Betula	*populifolia*	Gray Birch	Common	S4
Bromus	*inermis*	Smooth Brome Grass	Common	SNA
Calla	*palustris*	Wild Calla	Common	S5
Capsella	*bursa-pastoris*	Shepherd's Purse	Common	SNA
Carex	*intumescens*	Bladder Sedge	Common	S5
Cirsium	*arvense*	Canada Thistle	Common	SNA
Cornus	*stolonifera*	Red-osier Dogwood	Common	S5
Coronilla	*varia*	Crown Vetch	Common	SNA
Cynoglossum	*officinale*	Comfrey	Common	SNA
Dactylis	*glomerata*	Orchard Grass	Common	SNA
Daucus	*carota*	Queen Anne's Lace	Common	SNA
Dryopteris	*cristata*	Crested Woodfern	Uncommon	S5
Eleocharis	*acicularis*	Needle Spikerush	Common	S5
Elodea	*canadensis*	Canada Waterweed	Common	S5
Equisetum	*arvense*	Field Horsetail	Common	S5
Equisetum	*hyemale*	Scouring Rush	Common	S5
Eupatorium	*perfoliatum*	Boneset	Common	S5
Fragaria	*virginiana*	Common Strawberry	Common	S5
Frangula	*alnus*	Glossy Buckthorn	Common	SNA
Fraxinus	*pennsylvanica*	Green Ash	Common	S5
Fraxinus	*nigra*	Black Ash	Common	S5
Glechoma	*hederacea*	Ground-ivy	Common	SNA
Hesperis	*matronalis*	Dame's Rocket	Common	SNA
Ilex	*verticillata*	Winterberry Holly	Common	S5
Iris	*germanica*	Bearded Iris	Rare	SNA
Leonurus	*cardiaca*	Motherwort	Common	SNA
Leucanthemum	*vulgare*	Ox-eye Daisy	Common	SNA
Lonicera	*tatarica*	Tartarian Honeysuckle	Common	SNA
Lotus	*corniculatus*	Bird's-foot Trefoil	Common	SNA
Lythrum	*salicaria*	Purple Loosestrife	Common	SNA
Maianthemum	*canadense*	Wild Lily-of-the-valley	Common	S5

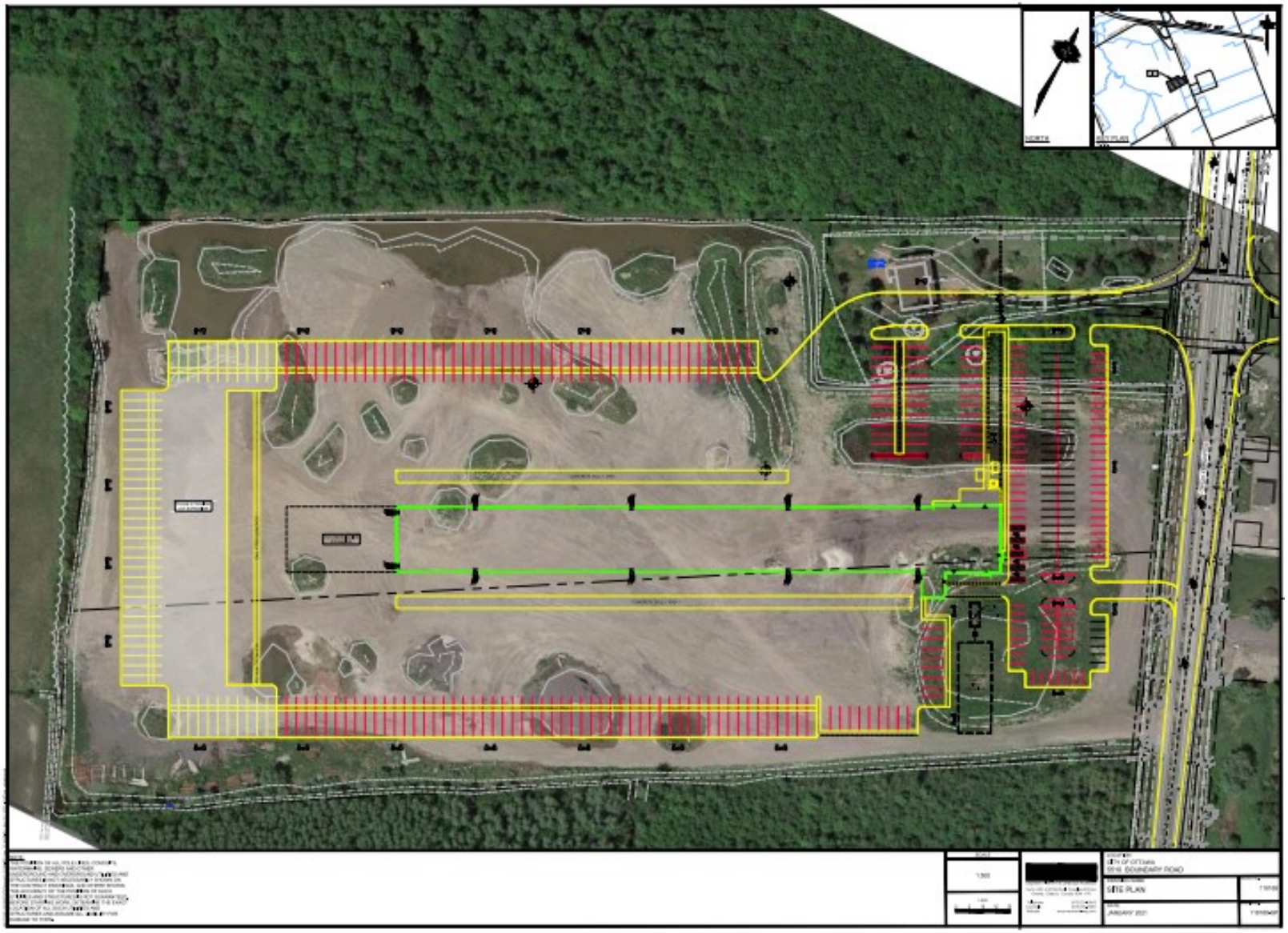
[3] S5: Common and secure in Ontario; S4: Secure in Ontario; SNA: non-native species, not assessed.

BOTANICAL NAME		COMMON NAME	Regional Status	Prov. Status[3]
Matricaria	*discoidea*	Pineapple-weed	Common	SNA
Medicago	*lupulina*	Black Medick	Common	SNA
Melilotus	*alba*	White Sweet Clover	Common	SNA
Oenothera	*biennis*	Common Evening Primrose	Common	S5
Onoclea	*sensibilis*	Sensitive Fern	Common	S5
Osmunda	*regalis*	Royal Fern	Common	S5
Parthenocissus	*vitacea*	Virginia Creeper	Common	S5
Phragmites	*australis ssp. australis*	Common Reed	Common	SNA
Pinus	*strobus*	Eastern White Pine	Common	S5
Pinus	*banksiana*	Jack Pine	RS (3) - native	S5
Plantago	*major*	Common Plantain	Common	SNA
Poa	*compressa*	Wire Grass	Common	SNA
Populus	*balsamifera*	Balsam Poplar	Common	S5
Populus	*deltoides*	Cottonwood	Common	S5
Populus	*grandidentata*	Large-tooth Aspen	Common	S5
Populus	*tremuloides*	Trembling Aspen	Common	S5
Potamogeton	*nodosus*	Longleaf Pondweed	Uncommon	S5
Prunus	*virginiana*	Choke Cherry	Common	S5
Pyrola	*elliptica*	Shinleaf	Common	S5
Rhamnus	*cathartica*	Common Buckthorn	Common	SNA
Rhus	*typhina*	Staghorn Sumac	Common	S5
Robinia	*pseudo-acacia*	Black Locust	Common	SNA
Rubus	*pubescens*	Dwarf Raspberry	Common	S5
Sagittaria	*latifolia*	Broad-leaved Arrowhead	Common	S5
Salix	*eriocephala*	Cottony Willow	Uncommon	S5
Salix	*x fragilis*	Crack Willow	Common	SNA
Salix	*petiolaris*	Slender Willow	Common	S5
Schoenoplectus	*tabernaemontanae*	Softstem Bulrush	Common	S5
Scirpus	*sp.*	Rush sp.	N/A	N/A
Solidago	*sp.*	Canada Goldenrod	N/A	N/A
Sonchus	*arvensis*	Sow-thistle	Common	SNA
Stuckenia	*pectinata*	Sago Pondweed	Common	S5
Symphyotrichum	*novae-angliae*	New England Aster	Common	S5
Syringa	*vulgaris*	Lilac	Common	SNA
Taraxacum	*officinalis*	Common Dandelion	Common	SNA
Thuja	*occidentalis*	Eastern White Cedar	Common	S5
Tragopogon	*pratensis*	Goat's-beard	Common	SNA
Trientalis	*borealis*	Starflower	Common	S5
Trifolium	*pratense*	Red Clover	Common	SNA
Tussilago	*farfara*	Coltsfoot	Common	SNA
Typha	*angustifolia*	Narrow-leaved Cattail	Common	S5
Ulmus	*americana*	White Elm	Common	S5
Vicia	*cracca*	Cow Vetch	Common	SNA
Vitis	*riparia*	River Grape	Common	S5
Xanthium	*strumarium*	Cocklebur	Common	S5

Appendix 5 Bird Species observed on and adjacent to the site.

COMMON NAME	SCIENTIFIC NAME	Prov, Status	Forest interior	On site	Ad-jacent
Alder Flycatcher	*Empidonax alnorum*	S5B		H	
American Crow	*Corvus brachyrhynchos*	S5B		O	
American Robin	*Turdus migratorius*	S5B		O	
Bank Swallow	*Riparia riparia*	S4B		O	
Barn Swallow	*Hirundo rustica*	S4B		O	
Black-capped Chickadee	*Poecile atricapillus*	S5B		H	
Blue Jay	*Cyanocitta cristata*	S5B		H	
Brown Thrasher	*Toxostoma rufum*	S4B			H
Chestnut-sided Warbler	*Setophaga pensylvanica*	S5B		O	
Common Grackle	*Quiscalus quiscula*	S5B		O	
Common Yellowthroat	*Geothylpis trichas*	S5B		H	
Downy Woodpecker	*Picoides pubescens*	S5		H	
Eastern Phoebe	*Sayornis phoebe*	S5B		H	
Eastern Wood-Pewee	*Contopus virens*	S4B			H
European Starling	*Sturnus vulgaris*	SNA		O	
Green Heron	*Butoroides virescens*	S4B		H	
Great Crested Flycatcher	*Myiarchus crinitus*	S4B	*		O
Killdeer	*Charadrius vociferus*	S5B		O	
Mallard	*Anas platyrhynchos*	S5B		O	
Northern Flicker	*Colaptes auratus*	S4B		H	
Northern Rough-winged Sw	*Stelgidopteryx serripennis*	S4B			H
Northern Waterthrush	*Parkesia noveboracensis*	S5B			H
Pileated Woodpecker	*Dryocopus pileatus*	S5		S	
Red-winged Blackbird	*Agelaius phoeniceus*	S5B		O	
Ring-billed Gull	*Larus delawarensis*	S5B, S4N			fly-over
Rock Pigeon	*Columba livia*	SNA		O	
Song Sparrow	*Melospiza melodia*	S5B		O	
Spotted Sandpiper	*Actitis macularius*	S5		O	
Swamp Sparrow	*Melospiza georgiana*	S5B		O	
Veery	*Catharus fuscescens*	S4B	*		H
White-throated Sparrow	*Zonotrichia albicollis*	S5B			H
Yellow Warbler	*Setophaga petechia*	S5B		H	
Yellow-rumped Warbler	*Setophaga coronata*	S5B		H	

Appendix 6 **Conceptual Site Plan.** Figure provided by Novatech Engineering Consultants Ltd.



Appendix 7 Species at Risk Communication with MECP