Environmental Impact Statement

8520 McArton Road
PT LT CON 12, GOULBOURN TOWNSHIP

July 2019, Revised January 2020

Prepared for:

Ottawa Valley Wild Bird Care Centre

Prepared by:
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1.0 INTRODUCTION

1.1 Property Location

The property is located approximately 40 kilometres southwest of downtown Ottawa within the City of Ottawa. The legal description is as follows: PT LT 4 CON 12 GEOGRAPHIC TOWNSHIP OF GOULBOURN, BEING PART 1 ON, PLAN 4R-31570. It is Part 1 of PIN04444-0010 LT.

The property is designated General Rural on Ottawa's Official Plan. Zoning is RU (Figure 1).

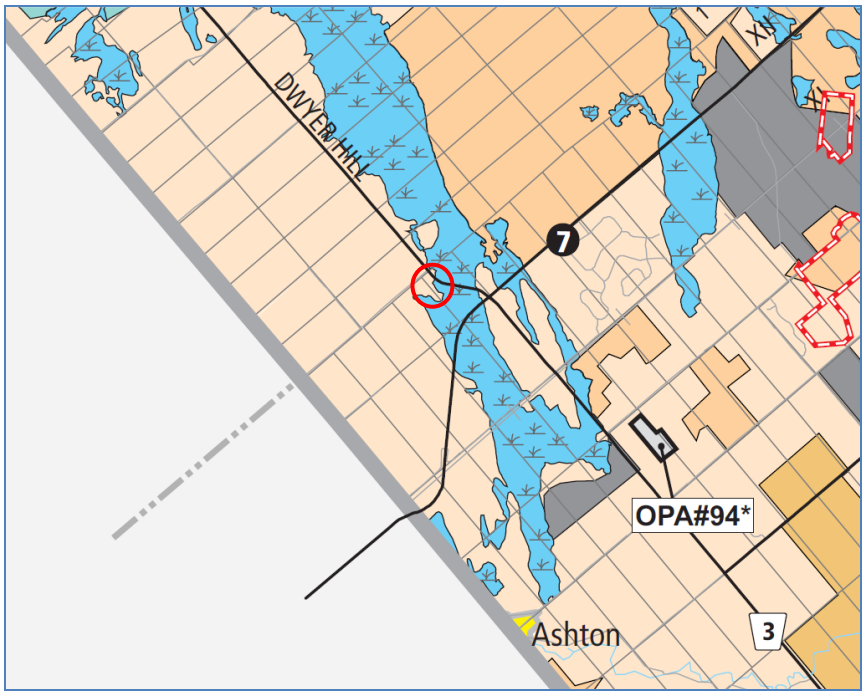

Figure 1 City of Ottawa Official Plan, Schedule A, Rural Policy Plan. Property boundary is within red circle. Light orange colour represents General Rural designation, blue is Significant Wetland.

Methodology

For the purpose of this EIS and to satisfy conditions of a development agreement, surveys were carried out on the property on the dates below. Grassland bird surveys were carried out according to the MNRF protocol (2011) on the subject property. Five point count locations were established and completed on each visit, following guidelines in the MNRF protocol.

Table 1 Fieldwork in 2019 on subject property.

Date	Time	Personnel Involved	Weather Conditions	Purpose of Visit
27 May 2019	7:30am-9am	Holly Bickerton	Sunny, light wind, ~20C	Grassland birds, wildlife vegetation
3 June 2019	7:30am-9am	Holly Bickerton	Mix of sun/cloud, moderate wind, ~10C	Grassland birds, wildlife, vegetation
10 June 2019	7:30am-9am	Holly Bickerton	Cloudy, light wind, ~20C	Grassland birds, wildlife vegetation

Prior to the severance of this property, field surveys were also completed by H. Bickerton on following dates: 23 Sept 2015, 6 October 2016, 22 June 2018 and 4 July 2018. Further details are presented in Bickerton 2018. Note that these surveys included a broader area than the current study area, and a focus was on wetland boundaries.

Desktop surveys provided background information on natural heritage features in proximity to the subject property as well as a listing of SAR and their habitat potentially present in proximity to the subject property:

- Data from NHIC database was accessed via Land Information Ontario (LIO) Make a Natural Heritage Map (http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US) for grid square 18VR1706 in which the property is located.
- Data from the Ontario Nature Reptiles and Amphibians of Ontario Atlas was accessed via http://www.ontarionature.org/protect/species/reptiles_and_amphibians/index.php (Ontario Nature 2019). Location information was obtained from the range maps provided on the website for SAR reptiles.

2.0 SITE DESCRIPTION: NATURAL ENVIRONMENT

2.1 Existing Land Use

The 17.3 acre (7.0 ha) property purchased by the Wild Bird Care Centre was severed from a larger lot at 8574 McArton Road in 2018. The parcel at 8520 McArton Road consists mainly of a hayfield. An unevaluated wetland is also found on the northeast boundary of the property. Until the time of severance, the hayfield in the centre of the proposed severance was grazed by cattle from a neighbouring farm. The hayfield is fenced. Across McArton Road to the north is a cattle farm.

2.2 Site Designations

The subject property is surrounded on three sides by the Manions Corners (Long Swamp) Provincially Significant Wetland (PSW) Complex (Figure 2). Immediately adjacent to the PSW to the east of the property is an unevaluated wetland identified by MNRF (Figure 3).

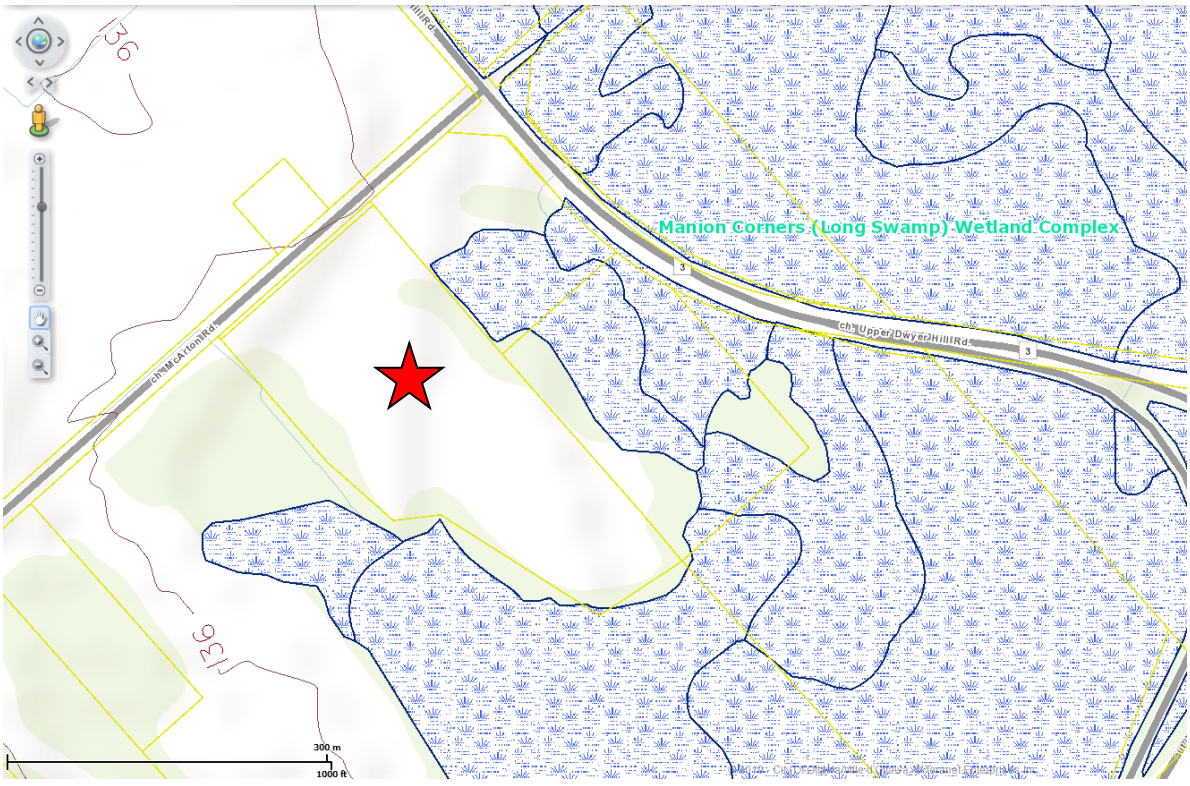

Figure 2 8520 McArton Road (red star) showing PSW complex surrounding the site to the east, south and west. Mapping from GeoOttawa, 5 June 2019.

Figure 3 PSW (filled blue), unevaluated wetland (open blue) and Significant Woodland (dark green) on and near subject property. Mapping obtained from MNRF (LIO) Make A Natural Heritage Map (provincial layers) on 5 June 2019.

The MNRF has mapped the wooded areas along the property boundary as Significant Woodlands (see Figure 3, dark green). This is primarily because the woodlands are contiguous with a large natural area to the south and east. This will be discussed below.

There are no significant valleylands, ANSIs, or other significant natural features on or adjacent to the property.

2.3 Landforms, Soil and Geology

The area proposed for severance is flat tableland. The Ontario Geological Survey data identifies that the surficial geology of the area proposed to be severed consists mostly of glacial till (sandy silt to silty sand) of unspecified depth. Recent geotechnical assessment confirmed that the soils in an area of investigation on the northern portion of the property are shallow, ie. 2-3 feet over bedrock.

Bedrock in the area consists of sedimentary limestone, dolostone, shale and/or sandstone of the Ottawa Group (Ontario Geology Survey 2015; see Geofirma Engineering 2018). Where surface depressions exist in bedrock, the area is poorly drained and surficial mineral and organic deposits have developed in the wetland areas.

2.4 Surface Water, Groundwater and Fish Habitat

The subject property is within the Jock River watershed which is governed by the Rideau Valley Conservation Authority (RVCA 2019). There is an unevaluated wetland containing permanent standing water to the east of the property, and surface drainage to the south and west of the property (Figure 3).

No creeks, drains, or other surface water was observed on the property during any site visits in (2015-2019).

The average depth to the aquifer in the area has been identified from water well data as 30.5 m (range 19.8 to 42.7, Geofirma Engineering 2018). Hydrogeological work also determined that the likely direction of shallow groundwater flow is east toward the Provincially Significant Wetland (see 2.4.3., Groundwater Flow Direction p. 3). The shallow depth of soil (<2m) in this area also suggests that the bedrock aquifer is potentially vulnerable to impacts in this area (e.g. chemical inputs, septic beds).

No fish or fish habitat was observed during any site visits.

2.5 Vegetation

The subject property is located in the St. Lawrence Lowlands Ecoregion, in the Mixedwood Plains Ecozone. Vegetation surveys were completed on 10 June 2019 and also in 2015 and 2016 as outlined in Bickerton 2018.

Vegetation communities have been identified approximately following the Ecological Land Classification method (Lee et al. 1998, Figure 4). Note that vegetation classification was completed in 2015 but is unchanged in 2019 based on recent field visits. All of the vegetation communities are common in Ontario, with no rare vegetation communities or their features identified. Photographs of all communities are found in Appendix 1.

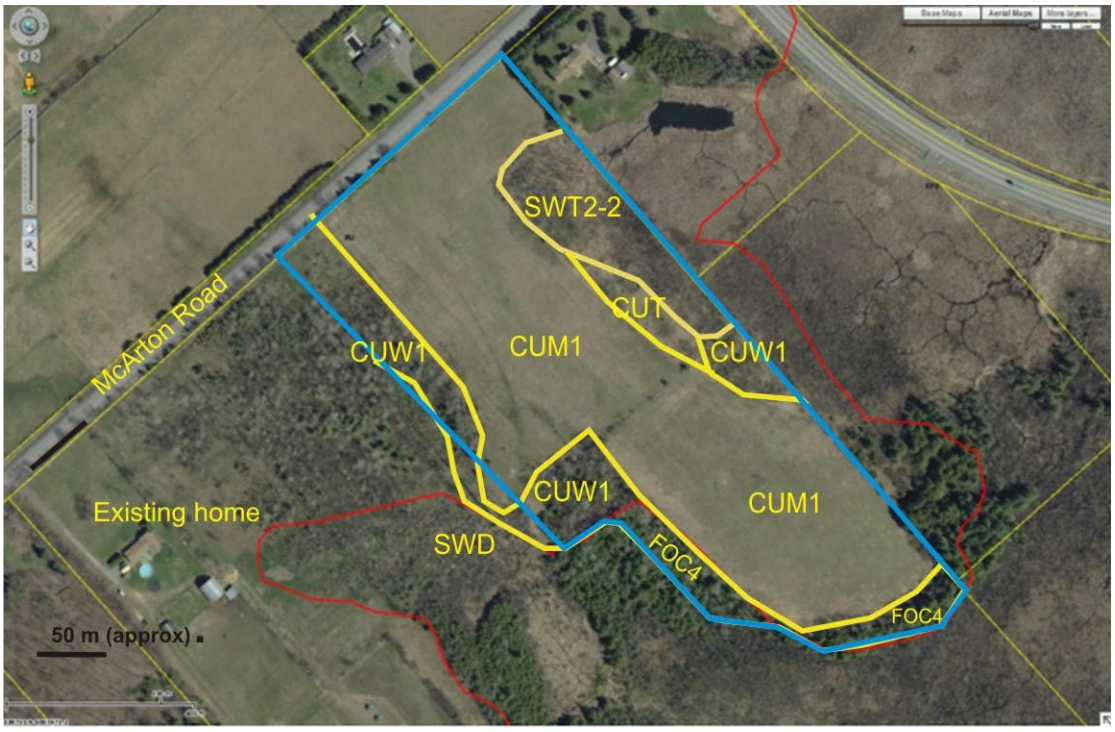

Figure 4 Vegetation Communities (yellow) on and near 8520 McArton Road. Blue line represents approximate property boundary. Please disregard red line.

Cultural Meadow (CUM1): The cultural meadow is dominated by forbs such as Red Clover (*Trifolium pretense*), Black Medick (*Medicago lupulina*), Bird's-foot Trefoil (*Lotus corniculatus*), Daisy Fleabane (*Erigeron annuus*), Wild Strawberry (*Fragaria virginiana*), Common Milkweed (*Asclepias syriaca*) and Queen Anne's Lace (*Daucus carota*) as well as forage grasses such as Smooth Brome (*Bromus inermis*), Orchard Grass (*Dactlyis glomerata)* and Timothy (*Phleum pratense*).

Willow Thicket Swamp (SWT): This community on the eastern edge of the proposed lot was probably formerly pastured and has reverted to native vegetation. It is now dominated by Willows (*Salix bebbiana, S. discolor, S. petiolaris*) and other shrubs, including Red-osier Dogwood (Cornus stolonifera) and Glossy Buckthorn (*Rhamnus frangula*). The understory is dominated by a mixture of facultative and wetland species (e.g. Blackish Bulrush (*Scirpus atrovirens*), Field Horsetail *(Equisetum arvense*). This wetland community is somewhat degraded due to its past land use, but is contiguous with the larger provincially significant wetland complex (Manion's Corners/Long Swamp) to its east and the boundary appears to generally concur with an OMNRF wetland boundary provided by the RVCA (ie. not the zoned PSW). No significant features were observed in the area investigated. Its main ecological value is to provide a vegetated buffer to the adjacent PSW.

Fresh-Moist Eastern White Cedar Coniferous Forest (FOC): This moist forest is dominated by Eastern White Cedar (*Thuja occidentalis*). The understory is very sparse due to low light

conditions. The species present are predominantly facultative species, and are not considered wetland indicators (e.g. Lady Fern (*Athyrium felix-femina*), Peduncled Sedge (*Carex pedunculata*), Helleborine (*Epipactis helleborine*), Solomon's Seal (*Maianthemum pubescens*), Sarsaparilla (*Aralia nudicaulis*).

Cultural Thicket and Woodland (CUT, CUW): There are patches of shrub-dominated thicket and woodland that are likely regenerating from past agricultural use, and are dominated by a mixture of native and non-native species. Woodlands are dominated by pioneer species such as Trembling Aspen, Balsam Poplar, Bur Oak, White Pine, and American Elm.

Deciduous Swamp (SWD): The mineral deciduous swamp found to the southeast of the property line is dominated by scattered American Elm (*Ulmus americana*) and some Bur Oak (*Quercus macrocarpa*). The understory contains wetland species including a number of wetland sedges, and non-native species including Reed Canary-grass (*Phalaris arundinacea*) and Glossy Buckthorn.

2.6 Wildlife

Wildlife species observed on the site were identified by sight and other direct evidence (song, call, tracks, scat).

Mammals identified on the site included White-tailed Deer (2019), Red Squirrel (2015), Groundhog (2015), and Eastern Cottontail (2015).

No reptiles or amphibians were identified on the site during any field investigations.

Eleven species of birds have been identified directly using the subject property; however, 18 additional species were identified nearby or flying over the property during at least five site visits (Table Appendix 1). Of these, Eastern Meadowlark is considered most significant, in that it is a Species at Risk and is listed as Threatened in Ontario and Canada (see below). All other birds observed are common in the Ottawa area and provincially. No area-sensitive bird species were observed on the property.

No other significant wildlife was observed on the property. There was no Significant Wildlife Habitat identified on the property according to definitions within the Natural Heritage Reference Manual (2010).

2.7 Species at Risk

Desktop survey results for Species at Risk (SAR) observations in the area included the NHIC grid square (NHIC 2019), the Ontario Nature Reptile and Amphibians database (2019), the Ontario Breeding Bird Atlas (2008) and eBird (2019). These searches suggested that the following species had the potential to be present in the general area: Butternut (*Juglans cinerea*), Barn

Swallow (*Hirundo rustica*), Chimney Swift (*Chaetura pelagica*), Eastern Meadowlark (*Sturnella magna*), Bobolink (*Dolinchonyx oryzivorus*), Blanding's Turtle (*Emydoidea blandingii*) and Snapping Turtle (*Chelydra serpentina*).

Field surveys completed in 2015 and 2016 for a scoped EIS prior to the property severance (2018) provided information on Species at Risk. No Butternut trees were observed, and there were no structures within the proposed area that could provide suitable nesting habitat for Barn Swallow or Chimney Swifts. No turtle habitat is present in the old field, which is entirely terrestrial and has no loose soil or other substrate suitable for nesting. MECP concurred in the IGF the site does not contain Blanding's Turtle habitat (C. Hann, pers.comm. 2019). Due to roadkill observations in the area, MECP suggested construction mitigations to prevent site nesting, which have been incorporated into this report.

During field investigations in September 2015 prior to the property severance, two Eastern Meadowlarks were observed. The late date of the survey suggested that these Meadowlarks may be migratory. Because the Cultural Meadow, an old hayfield, is considered suitable habitat for both Eastern Meadowlark and Bobolink, a requirement for surveys following the Ontario protocol was identified as part of the development agreement governing the severance.

Three surveys were completed following Ministry protocol (OMNR 2011) in May and June 2019. On 27 May, two Eastern Meadowlark were observed on the property for a few minutes, in the vicinity shown in Figure 5. On 3 June, no Eastern Meadowlark were observed on the property but individuals were singing heard to the north, across McArton Road. On 10 June, two Eastern Meadowlarks were observed as they flew toward the centre of the property where they foraged for a few minutes, then returned. One of these individuals was also frequently observed singing from trees surrounding the hayfield to the north and west.

An Information Gathering Form (IGF) was submitted to MECP on 6 May 2019 to identify potential SAR habitat on the property and to identify the scope of study planned. Comments received on 28 June 2019 requested additional detail regarding the surveys. A telephone discussion with Management Biologist Carolyn Hann at MECP (28 June 2019) confirmed that surveys were sufficient for MECP's requirements, and that the footprint of the building would be considered to fall within Category 3 habitat. See more detail in Impacts and Mitigation, below.

In summary, observations of Eastern Meadowlark on three of four visits suggest that they are using the property for foraging. Based on field observations, Eastern Meadowlark are thought to be nesting on the cattle farm across McArton Road to the north, which contains a large area of suitable habitat. There is no evidence that Eastern Meadowlark are nesting on the subject property.

Figure 5 Area where foraging Eastern Meadowlarks were observed, May-June 2019.

A single Monarch (SC) was observed on 23 Sept 2015 in the Cultural Meadow, which contains several forb species suitable for breeding and feeding Monarch. The habitat of Special Concern species is considered Significant Wildlife Habitat (SWH) under the Natural Heritage Reference Manual (OMNR 2010).

Bobolink were not observed at any time in the hayfield, despite the presence of suitable habitat. No Butternut were found on the property.

No other SAR or their habitat were observed on the property during any visits. There were no observations of Barn Swallow (*Hirundo rustica*) or Chimney Swift (*Chaetura pelagica*) and there are no structures to provide nesting or roosting habitat. Although the PSW may provide habitat for both Blanding's Turtle (*Emydoidea blandingii*) and Snapping Turtle (*Chelydra serpentina*), none were observed. The Cultural Meadow is entirely vegetated with no open or loose substrate that could be considered suitable for nesting.

2.8 Significant Woodlands

As shown in Figure 3, the MNRF has identified woodlands on the property margin as Significant Woodlands.

However, the area mapped as Significant Woodland is in fact open, young Cultural Woodland to the west, and Fresh-Moist Cedar Forest to the south (see Figure 5, site photos in Appendix 1). Neither of these areas meets the criteria identified in the Natural Heritage Reference Manual (OMNR 2010) or by the City of Ottawa (2018) to be considered Significant Woodlands. The woodland on the property is under 2 ha in area, is estimated to be less than 80 years in age, contains no uncommon characteristics, and all ecological functions are all well below the threshholds for significance in Ottawa West. The Cultural Woodland in particular is young and open. Both communities have no particular diversity of native forest species and as they are recently regenerated from disturbed sites, do not contain any uncommon characteristics.

2.9 Corridors and Linkages

The unevaluated wetland to the east of the developable area (Figure 3) is contiguous with the PSW and provides a habitat linkage for wetland wildlife to the Manion's Corners PSW, which extends several kilometres to the northwest and south (Figure 6).

Woodlands and forests on the property, while not significant according to the City or PPS definitions (City of Ottawa 2018), provide a margin of contiguous wooded habitat to buffer and support the Manion's Corners PSW.

Figure 6 8570 McArton Road (red star) shown within the regional context together with natural heritage linkages including PSWs (dark blue), unevaluated wetlands (open blue) and Woodlands (dark green). Mapping obtained from MNRF (LIO) Make A Natural Heritage Map (provincial layers) on 5 June 2019.

None of the trees on the site have been identified as “distinctive trees” under the City’s guideline definitions (i.e. > 50 cm in diameter).

The remainder of the trees on the property are outside of the developable area will all be retained. They are described here in order to inform the necessary conservation measures required for their protection during construction. A Tree Conservation Report is being developed separately.

3.0 DESCRIPTION OF PROPOSED PROJECT

The Ottawa Valley Wild Bird Care Centre is planning to build a wild bird rehabilitation centre on the subject property. For the purposes of planning, the new centre is considered to fall under the use of “animal hospital” as defined in the City of Ottawa’s Official Zoning Bylaw (Ottawa Letter 19 July 2018).

The proposed site plan allows for the main centre with a footprint of 623.25 m^2 (Figure 7). An attached partially covered outdoor porch (hard surface aviary space) will provide a fly area for recovering birds. A shed is planned to the east of the main building, as well as the required 24 parking spaces. A septic tank and leaching bed is planned east of the main building. A well is proposed to the west of the building, and pond planned on the west side of the building. The pond may serve as a water reservoir for fire suppression purposes.

At a future undefined date subject to funding, open-air flight cages may be erected near the main centre. These aviaries are described as large cages for recovering birds, approximately 100 ft x 30 ft, with no concrete floor, no electricity or plumbing. It is not anticipated that such cages will require site plan control applications (S. Rehman pers. comm. 10 May 2019).

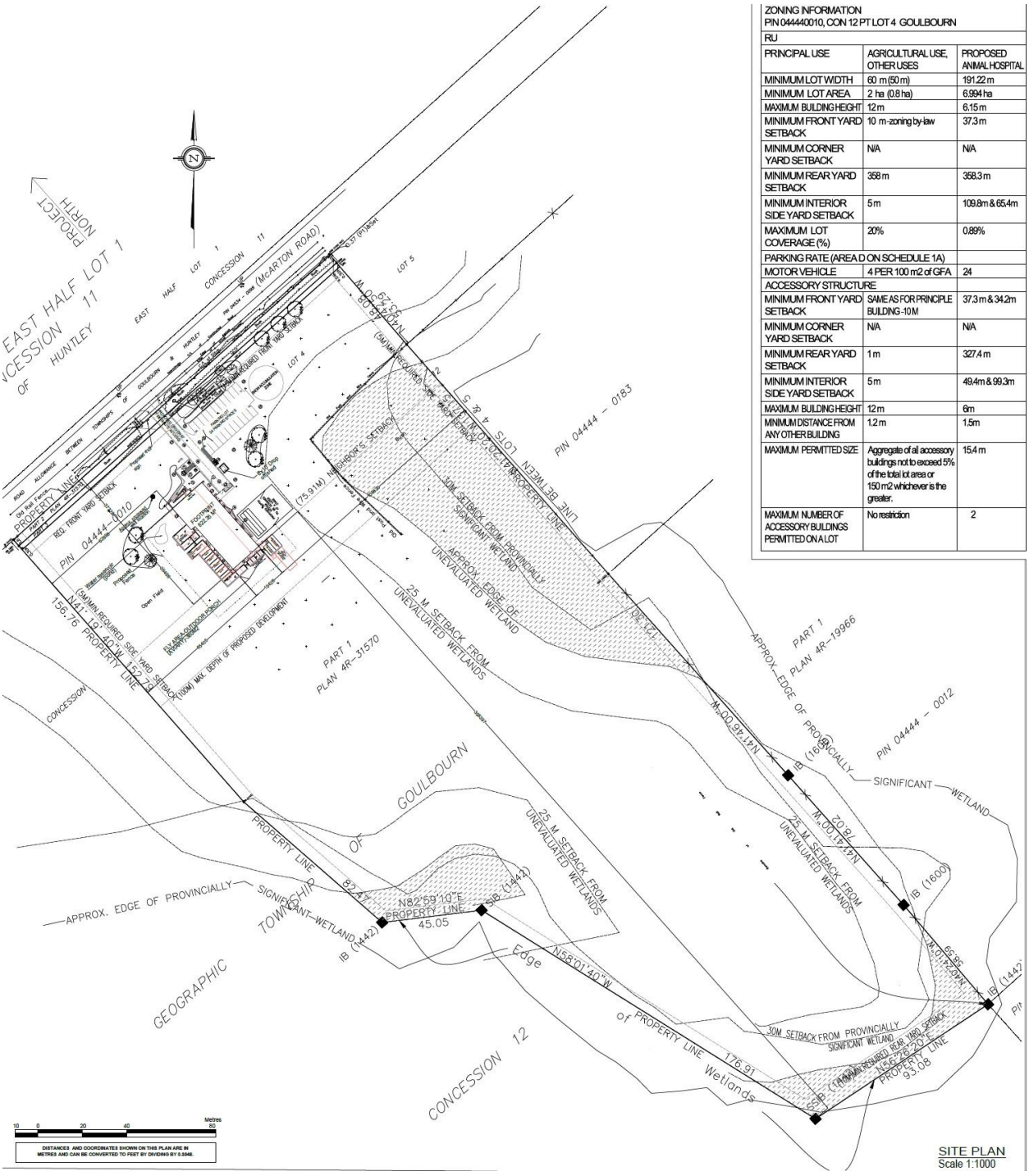

Figure 7 Proposed Site Plan, 8520 McArton Road.

4.0 IMPACT ASSESSMENT AND MITIGATION

Potential impacts have been thoroughly assessed and are described below, together with proposed mitigation measures.

4.1 Wetlands and Groundwater

All proposed development (main centre, parking, storage) has been placed well outside a 30 m setback from the Provincially Significant Wetland to mitigate any potential impacts. This is because 30 m is a standard distance above which it has been shown that impacts due to construction, etc. are mitigated (Environment Canada 2004). All proposed development has been placed outside of a 25 m setback from the unevaluated wetland boundary.

The septic bed location will also be placed to the east of the main building, at least 35 m in all directions from the PSW. Measures will be taken to ensure that there will be no chemical or sediment effluent entering the wetland. The area will be revegetated with native species and there will be no permanent development within the 25 m setback limit.

A water tank for fire suppression may be placed approximately 25-30 m from the unevaluated wetland boundary on the property. However, the tank is entirely self-contained and has no exchange or flow with the surrounding environment, and therefore will have no impact on the hydrologic function of the wetland.

It is recommended that silt fencing be erected on the PSW (east) side of the site during construction to prevent any sediment flow into the wetland.

4.2 Species at Risk and their Habitat

Two Eastern Meadowlarks were observed foraging, perching and/or singing on the property on three occasions between 2015 and 2019. Eastern Meadowlarks are likely breeding in the large hayfields to the north, where they are heard singing in breeding season. There was no evidence that Eastern Meadowlark are nesting on the property (e.g. adults visiting nest, carrying food, carrying nesting material, nest observation, etc.). For the purposes of the Ontario Endangered Species Act (ESA), an undetermined portion of the property is considered Category 3 habitat (C. Hann, pers. comm. 2019). An IGF was completed and reviewed by MECP (attached).

The relatively small development envelope (approximately 1.3 ha) in Category 3 habitat does not significantly impact Meadowlark because foraging habitat is not limiting in the area (Carolyn Hann, MECP 2019). However, due to requirements by the Ministry of Culture, the entire agricultural field (4.8 ha) must be plowed to “plantable” condition in order to complete a pedestrian archeological survey.

The 4.8 ha area of Cultural Meadow affected by plowing is well under 30 ha threshold required to undertake the permitting process under the ESA (C. Hann, pers.comm. 2019). Therefore, the

Wild Bird Care Centre has registered the proposed development activity with the Ministry of Environment, Conservation and Parks (MECP). A restoration and habitat management plan has being prepared to satisfy the requirements of registration. As per ESA requirements, all former habitat outside of the 1.3 ha development envelope (~3.5 ha). Key components of the restoration plan include:

- The site will be plowed for archeological purposes only after Aug 1 (outside breeding season and MBCA guidelines) and a minimum of 14 days following registration.
- No herbicide will be used in field preparation, to maintain live rootstock for regeneration.
- The 3.5 ha plowed site will be seeded in fall 2019 with a Meadowlark/Bobolink grassland seed mix following MECP guidelines.
- Annual monitoring will be completed for 5 years in compliance with MECP requirements and managed as Meadowlark habitat as described in the Management Plan.

Further recommendations:

- It is recommended that screened flight cages used by predatory birds such as raptors be obscured from view of songbirds such Eastern Meadowlark, to avoid negative impacts on breeding birds in the vicinity.
- It is recommended that the minimal loss of Monarch nectaring and breeding habitat be offset by plantings of a suite of native wildflower species, including Milkweeds (*Asclepias* sp.) in landscape plantings at the front of the building. In this way, concentrated larval and feeding habitat will replace less concentrated grassland habitat, resulting in no negative impacts on the ecological function of the field to Monarchs.
- It is recommended that no loose fill be stockpiled on site, and that the construction site be fully fenced with a perimeter fence for the duration of construction, to limit potential access to the site by nesting turtles, including Blanding's Turtle.

SUMMARY AND RECOMMENDATIONS

The proposed new Wild Bird Care Centre lies in close proximity to the Manion's Corners PSW and unevaluated wetland. Shallow soils and drainage of the shallow aquifer to the PSW in the east suggest that the groundwater is sensitive in this area. A portion of the area has also been identified as a foraging area (Category 3 habitat under the Ontario ESA) for Eastern Meadowlark, a Threatened grassland bird species.

No other species at risk, regionally rare species, Significant Woodlands or Significant Wildlife habitat have been observed or will be impacted by this proposed development.

Consequently, the following mitigations have been undertaken to minimize potential impacts in the design of the WBCC:

- Development of the main centre, septic, and well bed will be a minimum of 30 m from the PSW and 25 m from the unevaluated wetlands in all directions, in order to reduce the possibility of impacts of construction and/or ongoing maintenance (e.g. nutrient flow through aquifer) on the PSW.
- Parking lot runoff will be treated prior to discharge. Grading and temporary soil disturbance just within the 25 m unevaluated wetland setback is required to complete this mitigation and will be fenced with sediment fencing and revegetated following construction.
- A self-contained water tank for fire suppression may be placed approximately 25-30 m from the unevaluated wetland, and this is anticipated to have no ongoing impacts.
- The loss of Eastern Meadowlark foraging habitat (Category 3) due to the building envelope and required archeological surveys will be mitigated by reseeding of the undeveloped rear of the property (~3.5 ha) with a native seed mix suitable for grassland birds. As part of registering the activity under the ESA, a Habitat Management Plan has been developed that follows requirements of the MECP, including a monitoring plan. An IGF has been completed, submitted, and approved by MECP.

The following additional recommendations are made:

- No loose fill should be stockpiled on site. A professional biologist should be notified for advice in the event that turtles are observed in the construction area.
- During construction, silt fencing should be maintained across the east side of the site, to prevent sediment flow into the PSW.
- Perimeter (exclusionary) fencing should be erected around the construction site for the duration of construction.
- Native plant forb species including Milkweeds (*Asclepias* sp.) should be used in landscaping, where possible sourced from local native stock.
- Flight cages should be vegetated to reduce visibility of injured raptors to native birds.

The information contained in this EIS is accurate and complete, to the best of my knowledge. I trust the aforementioned satisfy the requirements of an Environmental Impact Statement.

Please contact me if you have any questions on this Environmental Impact Study.

Holly J. Bickerton, B.A.Sc., MES
Consulting Ecologist, Ottawa, Ontario.

5.0 REFERENCES

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6.0 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 Photos of ELC Vegetation Communities, 8520 McArton Road

Photo 1. Cultural Meadow from centre of 8520McArton Road, facing NW to McArton Rd.

Photo 2. Cultural Meadow.

Photo 3. Willow Thicket Swamp (SWT2-2); unevaluated wetland area adjacent to Manions Corners PSW.

Photo 4. Cultural Woodland at west boundary 8520 McArton Road.

Photo 5. Eastern White Cedar Coniferous Forest at south and southeastern end of property.

Appendix 2 Bird Observations on and near 8520 McArton Road, 2015-2019.

Common Name	On property	Adjacent/ Flyover	S Rank
Alder Flycatcher		x	S5B
American Crow	x	x	S5B
American Goldfinch	x	x	S5B
American Robin	x	x	
American Woodcock		x	
Black-and-White Warbler		x	
Black-capped Chickadee		x	S5
Blue Jay		x	S5
Brown-headed Cowbird	X		Non-native
Canada Goose		x	
Chipping Sparrow		x	
Common Grackle	x	x	S5B
Common Yellowthroat		x	S5B
Downy Woodpecker		x	
Eastern Meadowlark	x	x	
Eastern Phoebe	x	x	
Great-crested Flycatcher		x	
Hairy Woodpecker		x	
Mourning Dove		x	
Northern Flicker		x	
Red-eyed Vireo		x	
Red-winged Blackbird	x	x	S5B
Ring-billed Gull		x	
Song Sparrow	x		S5B
Swamp Sparrow		x	
Swan sp.		x	
Wilson's Snipe	x		
White-breasted Nuthatch		x	
Yellow Warbler	x	x	S5B

Appendix 3 Consultant qualifications, Holly Bickerton, MES

Ms. Bickerton is an Ottawa-based field ecologist. She has over fourteen years of experience in field ecology and applied conservation research. Ms Bickerton conducts flora and fauna inventories, EIS and EA reports, vegetation mapping, invasive species assessments and management, ecological and species at risk assessments and monitoring, as well as conducting literature reviews and research. She advises agency and private clients on all aspects of terrestrial ecological management and/or mitigation. As part of the permitting process, Ms Bickerton has also participated in the development of restoration and compensation programs. She also regularly works with agencies in the development of policies and guidelines concerning a variety of environmental topics.

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EDUCATION

MES, York University, Toronto, Ontario, 1998.

BEd, Queen's University, Kingston, Ontario, 1997.

BASc (Hons). McMaster University, Hamilton, Ontario, 1995.

RECENT TRAINING AND COURSES

Butternut Health Assessment, Ontario Ministry of Natural Resources (OMNR), September 2010.

Ecological Land Classification (ELC), OMNR, October 2007.

Ontario Wetland Evaluator, OMNR, June 2005.

PROFESSIONAL ASSOCIATIONS

Field Botanists of Ontario (Member)

Ontario Invasive Plant Council (Member)

Ontario Field Ornithologists (Member)

Ottawa Field-Naturalists (Committee Member)

EMPLOYMENT HISTORY

Consulting Ecologist, Ottawa, ON, (2005 to present)

Species at Risk Biologist, OMNR, Kemptville District (2007-2008)

Species at Risk Biologist, OMNR, Species at Risk Unit, Peterborough, ON, (2003-2005)

Scientific Officer, Department for Environment and Heritage, Adelaide, South Australia, 2001-2002.

RELEVANT PROJECT EXPERIENCE

Ecological Inventory, Vegetation Mapping and Assessment

Ms Bickerton is experienced in the development and undertaking of field programs in ecological assessment (EIS, EAs). This includes flora and fauna inventories, mapping of vegetation communities using Ecological Land Classification (ELC) methods, the identification of species at risk and provincially and regionally rare flora and fauna, and the development of management and/or mitigation approaches. Ms Bickerton has worked with many agencies, including national and provincial parks, conservation organizations, as well as private clients. She is experienced in standard data collection methods and in identification of the flora and fauna of southern Ontario. Ms Bickerton has participated in the development of federal screening environmental assessments, municipal environmental impact statements, monitoring programs, and has also developed recommendations for conservation land management. In addition to certification and experience in wetland identification, Ms Bickerton has participated in a provincial Wetland Plant working group to develop supporting materials for wetland evaluators.

Species at Risk

Ms. Bickerton is experienced in field identification of many species at risk. She has authored two peer-reviewed COSEWIC status reports and nine species at risk recovery documents and has developed survey and/or monitoring protocols for three federal species at risk (Pitcher's Thistle, Louisiana Waterthrush, Cerulean Warbler). Ms Bickerton is skilled in interpretation and application of provincial and federal legislation governing species at risk and their habitats. Ms. Bickerton also routinely works with federal and provincial agencies to develop species at risk policy and/or programs and has also led or participated in the development of communication and training documents. Ms. Bickerton is a certified Butternut Health Assessor.

Invasive Species and their Management

A specialist in invasive plant species and their management, Ms Bickerton has designed and undertaken field programs to identify locations and management actions for invasive species (Common Reed, *Phragmites australis* ssp. *australis* and European Water Chestnut, *Trapa natans*), and has developed land management plans for conservation organizations that include mapping and management options for several other species. She is familiar with most invasive plant species in the National Capital Region. Ms Bickerton is a current member of the Ontario Invasive Plant Council (www.ontarioinvasiveplants.ca) and recently (October 2011) attended its AGM. Through this organization, Ms Bickerton is well-connected to current research, best-practices, and experienced practitioners. While living in Australia (2000-2003), Ms Bickerton became experienced in the design of invasive plant control programs, especially within high-quality natural areas.

Monitoring of Species and Communities

Ms Bickerton has worked with agencies including Environment Canada, Parks Canada, the Ontario Ministry of Natural Resources and the South Australian Department for Environment and Heritage to develop monitoring programs and protocols on topics including a) vegetation community change as a result of disturbance and/or restoration, b) population, abundance and/or range monitoring for a number of species at risk, c) long-term inventory and monitoring programs for species at risk in national parks.