Ecological Site Assessment
Lot 7, Concession 2, Township of Hanmer
Val Therese, Ontario

August 12, 2019
FINAL REPORT
DST File No.: GV-SD-035900

Prepared for:
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EXECUTIVE SUMMARY

DST Consulting Engineers Inc., A Division of Englobe (DST) was retained by Yallowega Belanger Salach Architecture (YBSA), an agent acting on behalf of Le Conseil scolaire catholique du Nouvel-Ontario to complete an Ecological Site Assessment to assess the presence/absence of three avian species at risk (SAR) and their habitat at a property located on Lot 7, Concession 2, Township of Hanmer, in Val Therese, within the City of Greater Sudbury, Ontario (herein referred to as the 'Site').

The Site is a rectangular parcel of land that measures approximately 140 m east to west and 306 m north to south for a total area of approximately 4.2 hectares in size. The Site is bound by a municipal Right-of-Way (ROW) followed by Regional Road 80 (Highway 69 North) to the east, and vacant land to the south, west and north. The Site does not currently have an assigned municipal address. The majority of the land is covered in grass/sedge, with some forested areas located along the western boundaries of the Site.

The City of Greater Sudbury (CGS) provided a list of SAR to the YBSA that were provided by the Minstry of Natural Resources and Forestry (MNRF) to be surveyed within the area of the Site. Based on habitat requirements, the MNRF identified that the Site may be utilized by Barn Swallow (*Hirundo rustica*), Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*). DST completed field surveys on four occasions to confirm the potential absence or presence of SAR and SAR habitat of Barn Swallow, Eastern Meadowlark, and Bobolink. The overall objective of the Ecological Site Assessment was to determine the potential presence/absence of protected species and/or their habitat and to identify necessary mitigation measures prior to the proposed construction of a new school on the property.

Field surveys were conducted by a DST representative on June 12, 21, 22, and 29, 2019. The Site was observed to be predominately agricultural (hay) field consisting of grass, sedges, and forbs. Forested areas are present within the western portion of the Site, consisting of mostly Trembling Aspen, Black Spruce and Birch. No evidence of Barn Swallow, Eastern Meadowlark or Bobolink or their habitat was observed at the time of the field surveys.

Overall, there was no evidence of SAR listed as threatened or endangered under the Endangered Species Act (ESA) (2007) or their habitat identified at the Site. Therefore, as no significant impacts that would violate the regulations of the ESA are anticipated, at this time, an authorization will not be required for the proposed construction activities. If any SAR or SAR habitat features are encountered during the proposed activities, work in the area must cease and the Ministry of Environment, Conservation and Parks SAR Branch consulted as to how to proceed. Applicable regulatory requirements must be adhered to and mitigation measures implemented to avoid impacting the SAR.

Several avian species protected under the Migratory Bird Convention Act (1994) were seen or heard and may be nesting in the area. It is recommended that potentially destructive activities during key nesting periods, which is from approximately April 14 to August 28 on the subject

property be avoided, if possible. If work is completed during the breeding bird season, trees proposed for removal should be inspected by a qualified biologist to confirm the presence/absence of migratory birds or nests.

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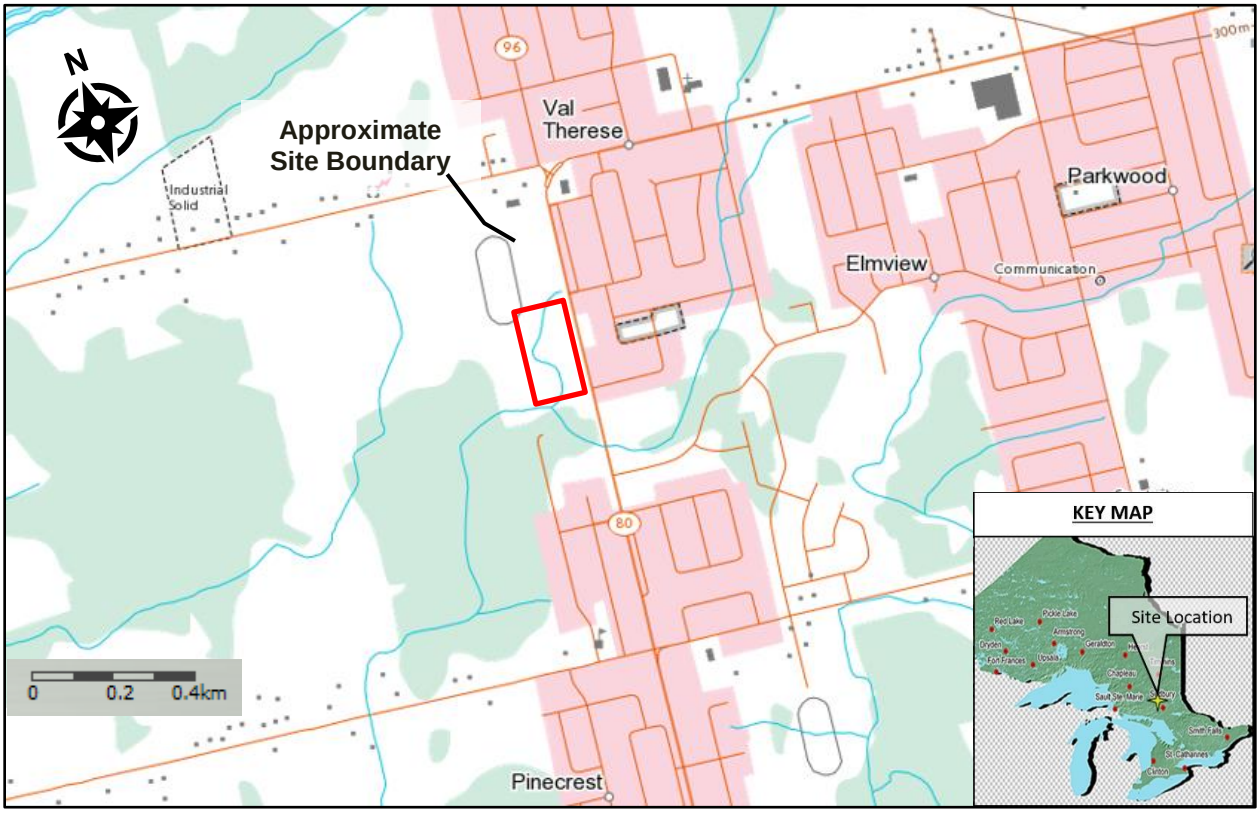
1 *INTRODUCTION*

DST Consulting Engineers Inc., A Division of Englobe (DST) was retained by Yallowega Belanger Salach Architecture (YBSA), an agent acting on behalf of Le Conseil scolaire catholique du Nouvel-Ontario (herein referred to as the 'Clients') to complete an Ecological Site Assessment to assess the presence/absence of three avian species at risk (SAR) and their habitat at a property located on Lot 7, Concession 2, Township of Hanmer, in Val Therese, within the City of Greater Sudbury, Ontario (herein referred to as the 'Site'). The location of the Site is illustrated below in Figure 1. The Ecological Site Assessment survey was completed as a due diligence to support the proposed construction of a new school on the subject lands.

Figure 1 - Site Location



1.1 Area of Investigation

The Site is a rectangular parcel of land that measures approximately 140 m east to west and 306 m north to south for a total area of approximately 4.2 hectares in size. The Site is bound by a municipal right-of-way (ROW) followed by Regional Road 80 (Highway 69 North) to the east, and vacant land to the south, west and north. The Site does not currently have an assigned municipal address. The majority of the land is covered in grass/sedge, with some forested areas located along the western boundaries of the Site.

The topography of the Site is of low topographic relief, and generally flat throughout. The ground surface elevation is approximately 290 m above mean sea level (m asl). The Site is situated in the Georgian Bay Ecoregion (Ecoregion 5E) in the heart of the Great Lakes- St. Lawrence Forest Region (Rowe, 1972).

1.2 Scope of Work

The scope of work for the Ecological Site Assessment included the completion of the following items:

- Complete field surveys to confirm the presence or absence of three avian SAR and their habitat including Barn Swallow (*Hirundo rustica*), Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) in accordance with Ontario Ministry of Natural Resources and Forestry (MNRF) survey protocols, where applicable, or applicable best practises where those protocols are not defined;
- Prepare an Ecological Site Assessment report detailing the results of the survey findings, mitigation measures and requirements under the *Endangered Species Act, 2007, S.O c.6* (ESA 2007), where applicable, for target SAR identified.

1.3 Field Survey Objective

Wildlife designated as threatened or endangered under Ontario Regulation 230/08 (O. Reg 230/08 – *Species at Risk in Ontario List*) under the ESA 2007 receive both species (Section 9) and habitat (Section 10) protection. As such, if any of the three target-species are identified, an Ecological Impact Study (EIS) would be required. The overall objective of the Ecological Site Assessment detailed herein was to determine the presence or absence of Barn Swallow, Bobolink and Eastern Meadowlark and their habitat, and to identify whether an EIS is required prior to the proposed construction activities.

2 BACKGROUND

2.1 Consultation and Pre-Survey Data Search

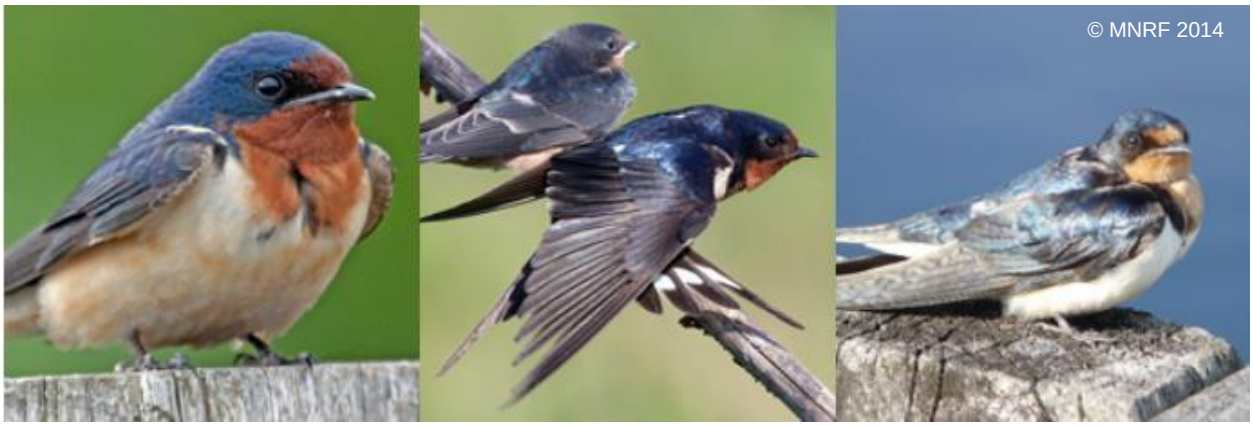
The City of Greater Sudbury (CGS) provided a list of SAR to the Client that were provided by the MNRF to be surveyed within the area of the Site. DST also reviewed SAR occurrence records on the MNRF Natural History Information Center (NHIC) website (MNRF, 2014) for the subject property, however, no recorded occurrences of SAR were identified within the 1-km square that the Site falls within.

Based on habitat requirements, the MNRF identified that the Site may be utilized by Barn Swallow, Bobolink and Eastern Meadowlark. The description of each specie is presented in Section 2.2. Field surveys were subsequently completed to identify the presence or absence of these species and their habitat, as detailed further in Section 3.0.

2.2 Species Life History

2.2.1 Barn Swallows

The Barn Swallow is a medium-sized bird that is currently listed as threatened under Ontario's ESA (2007). The Barn Swallow can be identified by its forked tail, blue upper plumage and copper underside (see Photograph 1 below). Barn Swallows are found throughout Ontario wherever suitable nesting conditions exist and are closely associated with rural settlements. They are known to build cup-shaped nests from mud pellets on artificial structures including barns, bridges, houses and culverts, typically on a beam or against a suitable vertical projection. Nests are constructed by both sexes, although more often by the female, and birds may nest colonially where sufficient high-quality nest sites are available (COSEWIC, 2011).



Photograph 1 – Barn Swallow Physical Appearance

Barn swallows typically select nesting and foraging sites close to open habitats such as farmlands of various description, wetlands, road rights-of-way, large forest clearings, cottage areas, islands, sand dunes, and subarctic tundra. They require wet sites that have a source of nearby mud

(COSEWIC, 2011). Most foraging takes place within a few hundred metres from the colony and usually within 500 m (COSEWIC, 2011).

Barn Swallows have experienced significant declines since the mid 1980s, and according to the MNRF (2014), the number of Barn Swallows in Ontario decreased by 65 % between 1966 and 2009. The decline in Barn Swallow population have been attributed to losses in the number of available nest sites, such as barns, and in the amount of foraging habitat in open agricultural areas (MNRF, 2014).

2.2.2 Bobolink

The Bobolink is a medium-sized passerine that is currently listed as threatened under Ontario's ESA (2007). In the breeding season, males are black on their underside with a white rump and creamy nape (see Photograph 2 below), while female are yellow-brown with fine streaking on breast sides and stripes on head. Bobolink can be found primarily in forage crops such as hayfields and pastures, and also occur in grassland habitats such as wet prairie, graminoid peatlands and abandoned fields dominated by tall grasses, remnants of uncultivated virgin prairie, no-till cropland, and small-grain fields (COSEWIC, 2010). It is generally not abundant in short-grass prairie, alfalfa fields, or in row crop monocultures (COSEWIC, 2010). They often build their small nests on the ground in dense grasses. Bobolink abundance and density are positively associated with a moderate litter depth, high lateral litter cover, high grass-to-legume ratios, an abundance of small shrubs as perches, and a high percent of forb cover (COSEWIC, 2010).

In the breeding season, male Bobolinks are conspicuous and vocal, while nesting females can go undetected early in the nesting cycle. Males can be found perched on shrubs, tall forbs, and fence posts, and often seen performing their characteristic aerial display flights. Bobolink nests are built on the ground, usually at the base of tall forbs (McCracken, 2013).

Photograph 2 – Male bobolink physical appearance in breeding season

Bobolink can be found throughout most of Ontario south of the boreal forest, however populations have declined over the past half century (MNRF, 2014). Along migration routes and in wintering areas, Bobolink are considered a pest of grain crops, and mowing hay during the breeding period

may inadvertently kill and disturb nesting adults and young birds, as well as eggs and nests (MNRF, 2014). In addition, the quality of their nesting habitat has likely declined over time due to modern hay production practices (MRNF, 2014).

2.2.3 Eastern Meadowlark

The Eastern Meadowlark is a medium sized songbird that is currently listed as threatened under Ontario's ESA (2007). Adults have a brown back, a bright yellow throat and belly with a large black "V" pattern in the middle of the chest (see Photograph 3 below). The breeding range of the Eastern Meadowlark in Ontario extends from the southwestern part of the province continuously north to include southern Algoma, Sudbury and Nipissing districts (COSEWIC, 2011). It prefers grassland habitats, including native prairies and savannahs, as well as non-native pastures, hayfields, weedy meadows, herbaceous fencerows and airfields (COSEWIC, 2011). In hayfields, it prefers older sites due to the availability of short, sparse, patchy stands of grass-dominated vegetation (COSEWIC, 2011). Nests of Eastern Meadowlark are built on the ground, are well concealed in the vegetation, and consists of a grass cup covered by grass woven from the surrounding vegetation (COSEWIC, 2011).

Photograph 3 – Eastern Meadowlark physical appearance

Eastern Meadowlark numbers are shrinking due to changes in land use and the loss of habitat that has resulted from development, changes in farming practices, over-grazing of pasturelands by livestock, grassland fragmentation, reforestation and use of pesticides (MNRF, 2014). In Ontario, the number of Eastern Meadowlarks has decreased by almost 65% during the past 40 years (MNRF, 2014).

3 *METHODOLOGY*

DST completed field surveys for Barn Swallows, Bobolink and Eastern Meadowlark. Surveys for Bobolink and Eastern Meadowlark were completed in accordance with the MNRF survey protocols provided by the Sudbury district MNRF (MNRF 2011 and MNRF, 2013). As there is no formalized field protocol for Barn Swallows, DST developed a protocol that identifies signs of use of Barn Swallows. Survey methodologies are described in the following table.

Table 1: Habitat Description and Survey Methodology

Species	Habitat Description	Survey Methodology
Bobolink	Bobolink can be found primarily in forage crops such as hayfields and pastures, and also occur in grassland habitats such as wet prairie, graminoid peatlands and abandoned field dominated by tall grasses, remnants of uncultivated virgin prairie, no-till cropland, and small-grain fields. It is generally not abundant in short-grass prairie, alfalfa fields, or in row crop monocultures (COSEWIC, 2010).	Surveys for Bobolink were completed according to the protocol provided by the Sudbury District MNRF (2011). Three surveys were conducted at least one week apart. Parallel transects and point count stations were established across the Site at approximately 250 m intervals. Observations including visual and auditory were recorded for a ten-minute period at each point count station.
Eastern Meadowlark	Eastern Meadowlark prefers grassland habitats, including native prairies and savannahs, as well as non-native pastures, hayfields, weedy meadows, herbaceous fencerows and airfields. In hayfields, it prefers older sites due to the availability of short, sparse, patchy stands of grass-dominated vegetation (COSEWIC, 2011).	Surveys for Eastern Meadowlark were completed according to the protocol provided by the Sudbury District MNRF (2013). Three surveys were conducted at least one week apart. Point count locations and transect routes were established throughout the Site, with a minimum of one-point count established per 5 hectares of suitable habitat.
Barn Swallow	Barn Swallows build cup-shaped nests from mud pellets in man-made structures, typically on a beam or against a suitable vertical projection. Barn swallows are known to nest in old barns, under briges, and culverts, and will re-use nests from year to year displaying nest fidelity. Barn swallows typically select nesting and foraging sites close to open habitats such as farmlands of various description, wetlands, road rights-of-way, large forest clearings, cottage areas, islands, sand dunes, and subarctic tundra. They require wet sites that have a source of nearby mud. Most foraging takes place within a few hundred metres from the colony and usually within 500 m (COSEWIC, 2011).	To determine if Barn Swallows were utilizing the Site, a DST representative inspected the Site for signs of previous nesting by Barn Swallows (i.e. old nests, nest scars, droppings, etc.) and/or foraging behaviour. Field surveys were conducted on two occasions (no less than 10 days apart) during the peak breeding period to identify active nests, listen for calling Barn Swallows and to observe for foraging and nesting activity. Binoculars were used to observe from a distance to determine the presence of Barn Swallows circling and/or defending territories, the number of nests, and the status of the nest.

Six (6) pre-determined point-count locations were surveyed during each visit (Figure 2). Surveys were undertaken in the early morning during favourable weather, using a point count method where any birds that were heard or seen in the vicinity of the survey location were recorded. These surveys addressed requirements for Bobolink and Eastern Meadowlark.

Figure 2 - Site Plan

© Google Earth

In addition to the surveys for the above-noted species, all incidental observations of other species present were additionally recorded (i.e. avifauna and small mammals) during Site visits and additional effort was made to locate nests of migratory birds.

4 RESULTS

4.1 Field Survey

The Site is located east of Regional Road 80 (a.k.a. Old Highway 69), with residences located to the east and south, and fields and/or forested land located north and west of the Site. The Site is predominately an agricultural (hay) field with forested areas in the northwestern, central western and southwestern portion of the Site. Based on topographic mapping of the Site, there is a stream running through the central portion of the Site, however, the stream was dry at the time of the field surveys. Several recreational vehicle tracks were also noted throughout the Site, particularly in the eastern portion.

The forested areas consisted primarily of Trembling Aspen (*Populus tremuloides*), Black Spruce (*Picea mariana*), and Birch species (*Betula spp.*) among small shrubs such as honeysuckle (*Lonicera spp*.). The vegetation within the field consisted of several species of sedges (C*yperaceae spp.*), grasses such as Bare Indian Grass (*Sorghastrum nutans*), and forbs such as Common Daisy (*Bellis perennis*), Alsike clovers (*Trifolium hybridum*) and Common Dandelion (*Taraxacum).* The height of grass/sedges within the field ranged from approximately 10 cm in the eastern portion of the Site, to approximately 80 cm in small patches in the western portion of the Site, however, most of the field was approximately 10-40 cm throughout the month of June.

A DST representative completed field surveys on June 12, 21, 22, and 29, 2019. The field survey completed on June 22, 2019 was to ensure there was at least 10 days from the initial survey for Barn Swallows, to space surveys in order to effectively capture any potential Barn Swallow activity occurring on Site. Photographs from the field activities are provided in Appendix A. Weather conditions during each of the field surveys are summarized in the table below.

Table 2: Field Survey Weather Conditions

Visit #	**1**	**2**	**3**	**4**
Date	June 12, 2019	June 21, 2019	June 22, 2019	June 29, 2019
Time on-Site	6:10 am	6:10 am	6:00 am	6:30 am
Weather Conditions	Partly Cloudy	Overcast	Sunny	Sunny
Air Temperature (ºC)	7	11	12	15
Precipitation	None	None	None	None
Cloud Cover (%)	75	50	10	0
Wind Speed (Beaufort Scale)	1	1	0	0

No Barn Swallows, Eastern Meadowlark or Bobolink were observed or heard during any of the field surveys, although the agricultural field appeared to provide suitable habitat to these species.

No mammal species were observed during the field surveys. Avian species seen or heard during the field survey included: Black-capped Chickadee (*Poecile atricapillus*), American Robin (*Turdus*

migratorius), Blue Jay (*Cyanocitta cristata*), American Crow (*Corvus brachyrhynchos*), Common Yellowthroat (*Geothlypis trichas*), Savannah Sparrow (*Passerculus sandwichensis*), Song Sparrow *(Melospiza melodia*) and White-throated Sparrow (*Zonotrichia albicollis*).

4.2 Areas Subject to Protection & Proposed Mitigation Measures

According to the NHIC map, the Site is not considered an Area of Natural Heritage and Scientific Interest (ANSI) and there are no Conservation Reserves, Provincial Parks or Natural Heritage Systems (NHS) within the subject property. In addition, no SAR or SAR habitat was identified on the Site, therefore, no mitigation measures are required.

As no Barn Swallow, Bobolink, or Eastern Meadowlark were identified during the Ecological Site Assessment, an EIS is not required prior to the proposed construction activities.

5 *ASSESSMENT*

5.1 Constraints on Survey Information

The assessment was completed by a DST representative with experience conducting SAR habitat surveys in northeastern Ontario. The DST representative had full access to the Site. Overall, no constraints on the survey information are expected to have occurred that will materially affect the conclusions and recommendations of this report.

5.2 Constraints on Equipment Used

The equipment used during the field survey was limited to a pair of binoculars (Bushnell 10 x 42) and a handheld GPS. The equipment used was in good condition and allowed the surveyor to increase the accuracy of the observations made during the assessment. Overall, no constraints on equipment are expected to have occurred that will materially affect the conclusions and recommendations of this report.

5.3 Potential Impacts of Development

At the time of the field survey, there was no evidence to suggest that Barn Swallows, Eastern Meadowlark, and Bobolink were actively utilizing the Site for foraging, nesting, roosting or migration. As such, negative impacts on these species are not expected. If a Barn Swallow, Eastern Meadowlark, or Bobolink are encountered during construction activities, all work in the area must cease and the MECP SAR branch consulted as to how to proceed.

Numerous bird species protected under the Migratory Bird Convention Act, 1994 (MBCA 1994) were seen or heard during the field survey. As such, there is the potential to impact the nesting or roosting sites of these species, particularly in areas where tree removal will occur. Mitigation measures for the protection of migratory birds and their nests are provided in Section 6.1.

5.4 Legislation and Policy Guidance

No SAR related regulatory requirements or authorization under the Ontario Endangered Species Act are required, at this time. If any SAR or SAR habitat features are observed during the construction process, work in the area must immediately cease and measures must be taken to avoid negatively impacting SAR. The MECP must be contacted for guidance on how to proceed prior to recommencing work.

6 *RECOMMENDATIONS*

6.1 Mitigation Measures

If any Barn Swallow, Bobolink, or Eastern Meadowlark or their habitat are observed during construction activities, work in the area must immediately cease and the MECP SAR Branch consulted as to how to proceed. Applicable regulatory requirements must be adhered to and mitigation measures implicated to avoid impacting the SAR.

The incidental taking of nests and eggs is governed by Migratory Birds Regulations (MBR) under subsection 6(a), which prohibits the disturbance, destruction or taking of nests and eggs under the Migratory Bird Convention Act, 1994 (MBCA,1994). The MBR recommends avoiding potentially destructive activities during key nesting periods, which is from approximately April 14 to August 28 in the area of the Site (Environment Canada and Climate Change, 2017). Tree removal, if required, should take place outside of the breeding bird season, if possible. If work is completed during the breeding bird season, trees proposed for removal should be inspected by a qualified biologist to confirm the presence/absence of migratory birds or nests. Tree protection should additionally be undertaken, when necessary, to avoid damaging adjacent trees. If any active nests are located during construction, work around the area must cease and a qualified biologist consulted to determine a buffer zone appropriate to the species. A buffer around the nest should be established, and work inside the buffer avoided until the young have fledged and left the area.

6.2 Permitting

No evidence of SAR listed as threatened or endangered under the ESA (2007) or their habitat was identified at the Site. As such, no significant impacts that would violate the regulations of the Ontario ESA are anticipated. At this time, an authorization under the ESA (2007) will not be required for the proposed construction activities.

7 CLOSURE

We trust this report meets your present requirements and appreciate this opportunity to provide environmental services to you. If you have any questions or comments, please contact the undersigned.

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Environmental Technician

Reviewed by:

David Vardy, Ph.D
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8 *LIMITATIONS OF REPORT*

The information, conclusions and recommendations given herein are specifically for this project and this Client only, and for the scope of work described herein. It may not be sufficient for other uses. DST does not accept responsibility for use by third parties.

The data, conclusions and recommendations which are presented in this report, and the quality thereof, are based on a scope of work authorized by the Client. Note, however, that no scope of work, no matter how exhaustive, can identify all ecological and/or environmental conditions. This report therefore cannot warranty that all conditions on or off the site are represented by those identified at specific locations.

Any recommendations and conclusions provided that are based on conditions or assumptions reported herein will inherently include any uncertainty associated with those conditions or assumptions. In fact many aspects involving professional judgment contain a degree of uncertainty which cannot be eliminated. This uncertainty should be managed by periodic review and refinement as additional information becomes available.

Note also that standards, guidelines, methodologies and practices related to environmental investigations may change with time. Those which were applied at the time of this investigation may be obsolete or unacceptable at a later date.

Any topographic benchmarks and elevations documented in this report are primarily to establish relative elevation differences between study locations and should not be used for other purposes such as grading, excavation, planning, development, etc.

Any comments given in this report on potential environmental conditions/site ecology are intended only for the guidance of the Client. The scope of work may not be sufficient to determine all of the environmental factors at each site. Contractors bidding on this project should, therefore, make their own interpretation of the factual information presented and draw their own conclusions as to how the conditions may affect their work.

Any results from an analytical laboratory, federal or provincial government agencies, other subcontractors, or any other third party, reported herein have been carried out by others, and DST cannot warranty their accuracy. Similarly, DST cannot warranty the accuracy of information supplied by the Client.

9 *REFERENCES*

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Appendix A

Photographs

(June 12, 2019)

Photograph 1: View of Site, facing south-southwest.

Photograph 2: View of forest in northwestern portion of Site, facing east.

Photograph 3: View of forested area in southwestern portion of Site, facing southwest.

Photograph 4: View of field, facing north-northeast.

Photograph 5: View of field, facing north-northeast.

Photograph 6: View of forested area in central-western portion of Site, facing southeast.