

Appendix G Natural Environment Assessment Report

Natural Heritage Report

New Fort Erie Elevated Tank Class Environmental Assessment and Enhanced Conceptual Design

for:



by:



LGL Limited
environmental research associates

October 2020

prepared by:

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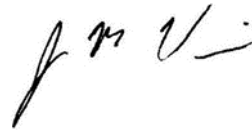
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1.0 INTRODUCTION

In order to accommodate future growth plans, the Regional Municipality of Niagara (Region) identified improvements necessary for the projected growth. One of these is the construction of a new 8.0 million litre elevated water storage tank to be located in Fort Erie. The objective of this study is to complete a Schedule 'B' Class Environmental Assessment for this new water storage tank to evaluate the alternative sites based on potential environmental impacts. The alternative sites are shown in **Figure 1**.

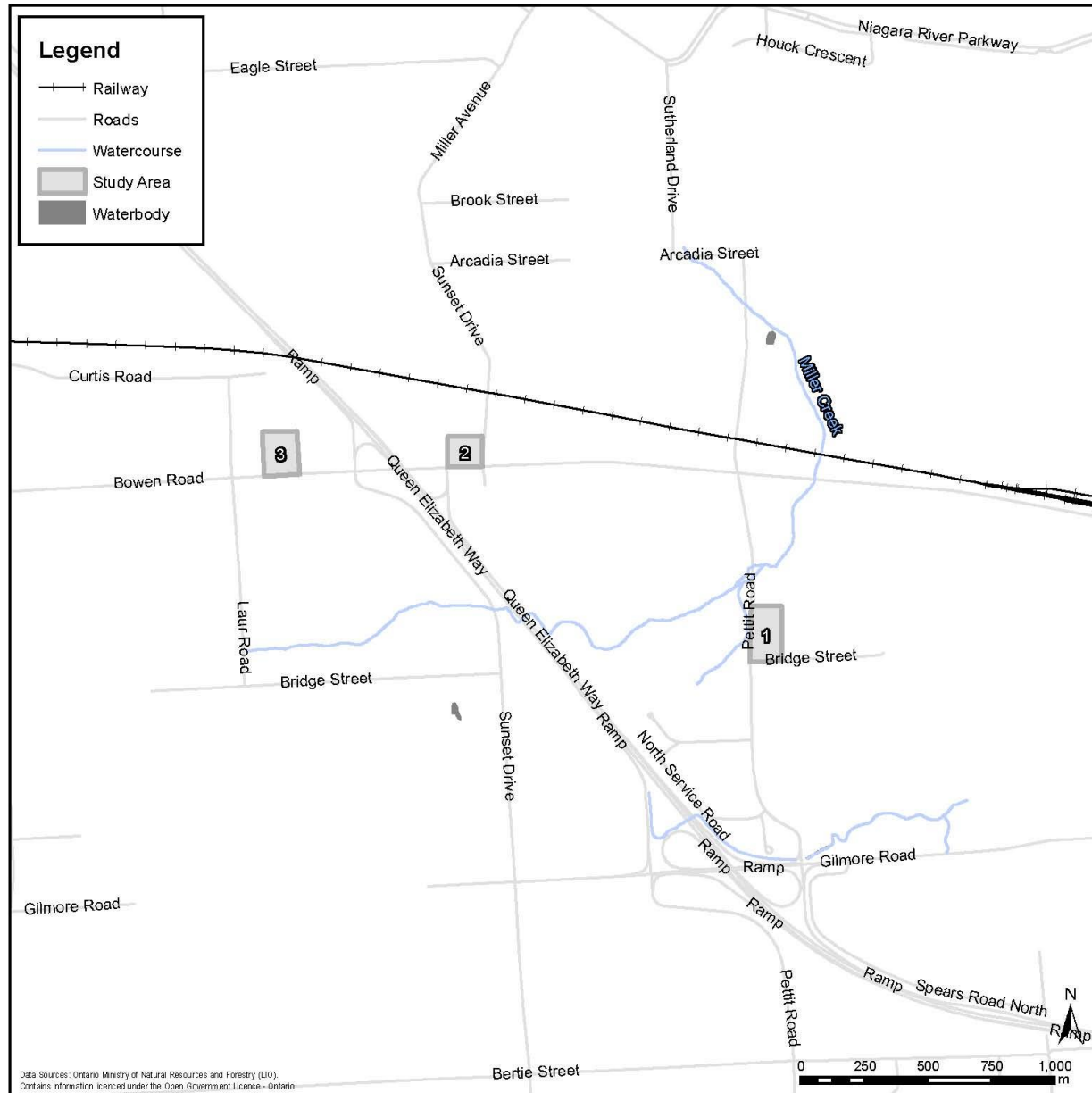


Figure 1. Key map – Alternative Sites/Study Areas

This Class EA is being conducted by R.V. Anderson Associates (RVA) on behalf of Niagara Region. LGL Limited, as a sub-consultant to RVA, is providing natural heritage services. This Natural Heritage Report documents the result of the data collected in 2019, and assesses the potential impacts of this project on natural heritage, including environmental protection and mitigation measures.

2.0 EXISTING CONDITIONS

The following discussion outlines the existing environmental conditions within the study area and identifies natural heritage areas and/or features of environmental sensitivity and/or significance.

2.1 Aquatic Habitats and Communities

The study area for the three alternatives is located within the Miller Creek watershed, with approximately half of the alternative 3 site located within the Beaver Creek watershed. There are no watercourses on or directly adjacent to the alternative 2 or 3 sites, but a tributary of Miller Creek is located directly across Pettit Road from the alternative 1 site (**Figure 1**). Miller Creek drains in a north easterly direction to the Upper Niagara River. It is under the jurisdiction of Niagara Peninsula Conservation Authority (NPCA) and the Ministry of Natural Resources and Forestry (MNRF), Guelph District.

Background Data

LGL conducted a secondary source review to identify the fish community within the watercourse. The secondary source review included a species at risk screening through aquatic species at risk mapping (DFO 2020) and the Natural Heritage Information Centre (NHIC) database (MNRF 2020). LGL also reviewed the Fort Erie Creeks - Watershed Plan (Philips Engineering 2008).

According to background investigations, there is no regulated habitat for aquatic species at risk and no species at risk were recorded in the study area, but Miller Creek does constitute habitat for a species of Special Concern (DFO 2020). Presumably, this species is Grass Pickerel (*Esox americanus vermiculatus*) as it has been reported from Miller Creek historically (Philips Engineering 2008; Beauchamp *et al.* 2011). Secondary source data from the MNRF Natural Heritage Information Centre (NHIC) was reviewed to screen for the presence or absence of aquatic species at risk within Miller Creek adjacent to the alternative 1 site. In contrast to the DFO database, the NHIC database indicated that no species at risk have historically been found in the vicinity of the Miller Creek watercourse adjacent to the study area.

Field Investigations

No site investigations were undertaken for fish and fish habitat for this project as there are no watercourses located directly on any of the sites. In addition, despite its proximity to the alternative 1 site, the Miller Creek tributary is located across Pettit Road with no direct connection to the site.

Species at Risk

As stated above, Grass Pickerel, a species of Special Concern, is likely found within Miller Creek and its tributary on the west side of Pettit Road.

2.2 Vegetation and Vegetation Communities

The geographical extent, composition, structure and function of vegetation communities were identified through air photo interpretation and field investigations. Air photos were interpreted to determine the limits and characteristics of vegetation communities. A field investigation of the vegetation communities within the proposed three site alternatives for the new Fort Erie elevated tank was undertaken on June 21, 2019.

Vegetation communities were classified according to the *Ecological Land Classification for Southern Ontario: First Approximation and Its Application* (Lee *et al.* 1998). The communities were sampled using a plotless method for the purpose of determining general composition and structure of the vegetation. Plant species status was reviewed for Ontario (Oldham 2009) and Vascular plant nomenclature follows Newmaster *et al.* (1998) with a few exceptions that have been updated to Newmaster *et al.* (2007).

2.2.1 Vegetation Communities

2.2.2 Vegetation

Pettit Road and Bridge Street (alternative 1)

The natural/semi-native features of the site are comprised of a large Deciduous Forest (FOD) and Deciduous Swamp (SWD) communities. These communities generally support higher quality habitat and a number of native plant species. Within the deciduous forest a clearing exists that is comprised of a Dry-Moist Old Field Meadow community (CUM1-1). This community is comprised of a mixture of old field species. The vegetation communities identified in the study area are described in **Table 1** and presented on **Figure 2a**.

Bowen Road and Sunset Drive (alternative 2)

This site is comprised of a large Dry-Moist Old Field Meadow (CUM1-1) with a large Dry-Fresh Sugar Maple Deciduous Forest (FOD5) beyond the site to the north and east. The cultural meadow community contains a high proportion of invasive and non-native plant species that are disturbance tolerant and is considered to be of low quality. The deciduous forest community contains a high proportion of mature native trees. In

general, the forest community is considered to be of higher quality and contain a higher proportion of native species. The vegetation communities identified in the study area are described in **Table 1** and presented on **Figure 2b**.

Bowen Road and QEW (alternative 3)

This site is comprised of a large agricultural field. Vegetation communities are restricted to a small Dry-Moist Old Field Meadow (CUM1-1) community that parallels Bowen Road. The cultural meadow community is largely comprised of non-native and disturbance tolerant plant species. A hedgerow is located along the property boundary of the agricultural field and the highway maintenance yard. This site supports low quality vegetation communities. The vegetation communities identified in the study area are described in **Table 1** and presented on **Figure 2c**.

All of the vegetation communities within the study area are considered widespread and common in Ontario and are secure globally.

2.2.3 Flora

A total of 103 plant species have been recorded within the study area. Five of these plants could only be identified to genus and are not included in the following calculations. Of the 98 plants identified to species, 53 (54%) plant species identified are native to Ontario and 45 (46%) plant species are considered introduced and non-native to Ontario. A list of vascular plants is presented in **Appendix A**. Definitions of the acronyms and species ranks used in **Appendix A** are described in **Appendix B**.

2.2.4 Species at Risk

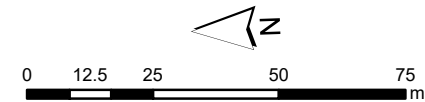
No plant species that are regulated under the Ontario *Endangered Species Act* or the Canada *Species at Risk Act* were encountered during LGL's botanical investigation within the subject area (those plant species regulated as Special Concern, Endangered, Threatened). A description of provincial species ranks is provided in **Appendix B**.



LEGEND

-  Watercourse
-  Approximated Regulation Lands (NPCA)
- Vegetation Community**
-  Vegetation Community Boundary
- CUM1-1a** Dry - Moist Old Field Meadow Type
- FOD** Deciduous Forest
- M** Manicured
- SWD** Deciduous Swamp

Data Sources: Niagara Peninsula ConservAtion Authority & Ontario Ministry of Natural Resources and Forestry (LIO).
Contains information licenced under the Open Government Licence - Ontario and from the Niagara Peninsula Conservation Authority EIP End-User Licence Agreement



Natural Heritage



Project: TA8901	Figure: 2a
Date: October, 2020	Prepared By: AJ
Scale: 1:1,500	Verified By: JMV



LEGEND

 Approximated Regulation Lands (NPCA)

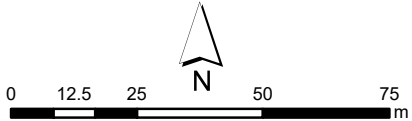
Vegetation Community
 Vegetation Community Boundary

CUM1-1c Dry - Moist Old Field Meadow Type

FOD5 Dry-Fresh Sugar Maple Deciduous Forest Ecosite

Data Sources: Niagara Peninsula ConservAtion Authority & Ontario Ministry of Natural Resources and Forestry (LIO).

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Project: TA8901	Figure: 2b
Date: October, 2020	Prepared By: AJ
Scale: 1:1,500	Verified By: JMV

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

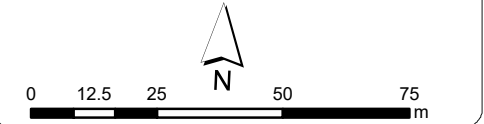
LEGEND

Approximated Regulation Lands (NPCA)

Vegetation Community
 Vegetation Community Boundary

Ag Agriculture
CUM1-1b Dry - Moist Old Field Meadow Type
H Hedgerow
M Manicured

Data Sources: Niagara Peninsula Conservation Authority & Ontario Ministry of Natural Resources and Forestry (LIO).
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Natural Heritage



Project: TA8901	Figure: 2c
Date: October, 2020	Prepared By: AJ
Scale: 1:1,500	Verified By: JMV

Table 1 Summary of Ecological Land Classification Vegetation Communities

ELC Code	Vegetation Type	Species Association	Community Characteristics
Terrestrial			
CUM	Cultural Meadow		
CUM1-1a-c	Mineral Dry – Moist Old Field Meadow	Ground Cover: includes awnless brome (<i>Bromus inermis</i> ssp. <i>inermis</i>), Kentucky bluegrass (<i>Poa pratensis</i>), common dandelion (<i>Taraxacum officinale</i>), white clover (<i>Trifolium repens</i>), wild carrot (<i>Daucus carota</i>), and bird's-foot trefoil (<i>Lotus corniculata</i>).	• Cultural communities (CU). • Tree cover and shrub cover < 25 % (M). • Community occurs on a wide range of soil moisture regimes (Dry-Moist). • Dominated by grasses and forbs.
FOD	Deciduous Forest		
FOD	Deciduous Forest	Canopy: includes silver poplar (<i>Populus alba</i>), black walnut (<i>Juglans nigra</i>), sugar maple (<i>Acer saccharum</i> var. <i>saccharum</i>), and bur oak (<i>Quercus macrocarpa</i>). Understory: includes chokecherry (<i>Prunus virginiana</i> var. <i>virginiana</i>), black walnut, white elm (<i>Ulmus americana</i>), and common buckthorn (<i>Rhamnus catharica</i>). Ground Cover: includes yellow avens (<i>Geum aleppicum</i>), yellowish enchanter's nightshade (<i>Circaea lutetiana</i> ssp. <i>canadensis</i>), and wild red raspberry (<i>Rubus idaeus</i> ssp. <i>strigosus</i>).	• Tree cover > 60 % (FO). • Deciduous tree species > 75% (D).

ELC Code	Vegetation Type	Species Association	Community Characteristics
FOD5	Mixed Forest	Canopy: includes sugar maple (<i>Acer saccharum</i> ssp. <i>saccharum</i>), red oak (<i>Quercus rubra</i>), black cherry (<i>Prunus serotina</i>), black walnut (<i>Juglans nigra</i>), and shagbark hickory (<i>Carya ovata</i> ssp. <i>ovata</i>). Understory: includes sugar maple, chokecherry, black cherry, black walnut, alternate-leaved dogwood (<i>Cornus alternifolia</i>). Ground cover: includes thimble-berry (<i>Rubus occidentalis</i>), spotted crane's-bill (<i>Geranium maculatum</i>), yellow avens, and false Solomon's seal (<i>Maianthemum racemosum</i> ssp. <i>racemosum</i>).	• Tree cover >60 % (FO). • Deciduous trees >75 % of canopy cover (D). • Sugar maple is dominant (5).

ELC Code	Vegetation Type	Species Association	Community Characteristics
Wetland			
SWD	Deciduous Swamp		
SWD	Deciduous Swamp	Canopy: includes trembling aspen (<i>Populus tremuloides</i>), red ash (<i>Fraxinus pennsylvanica</i>), cottonwood (<i>Populus deltoides</i>), and Manitoba maple (<i>Acer negundo</i>). Understory: includes trembling aspen, Manitoba maple, and red-osier dogwood (<i>Cornus sericea</i> ssp. <i>sericea</i>). Ground cover: includes sensitive fern (<i>Onoclea sensibilis</i>), soft rush (<i>Juncus effuses</i> ssp. <i>solutus</i>), and common reed (<i>Phragmites australis</i>).	• Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). • Deciduous tree cover >75% of canopy cover.
Other*			
M	Manicured grasses and planted shrubs and/or trees	Areas where large expanses of grass/shrubs/trees are maintained and/or planted.	

* Not identified as an ELC community by Lee, H., W. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig, and S. McMurray. 1998. *Ecological Land Classification for Southern Ontario: First Approximation and Its Application*. Natural Heritage Information Centre.

2.3 Wildlife and Wildlife Habitat

Field investigations were conducted with the purpose of documenting wildlife and wildlife habitat and to characterize the nature, extent and significance of wildlife usage within the study area. Wildlife investigations were focused within and immediately adjacent to the three sites (alternatives 1-3; **Figure 1**). Direct observations, calls and tracks were used to record wildlife present within the study area. A summary of survey date(s), tasks and weather conditions is presented in **Table 2**. Information concerning wildlife species at risk previously recorded within the study area limits was obtained from the Natural Heritage Information Centre (NHIC), while data requests were sent to the Niagara Peninsula Conservation Authority and the Ministry of Natural Resources and Forestry (MNR), Guelph District Office on December 16, 2019. Data was not provided by MNR and was not available through NPCA.

Table 2. Summary of Date of Inventory, Task, Weather and Personnel

Date of Inventory	Task	Weather	Personnel Involved
June 21, 2019	Breeding Bird survey and incidental wildlife observations	Clear, 18°C, calm	Judson Venier (LGL)

2.3.1 Wildlife Habitat

Wildlife and wildlife habitat was found to be unevenly distributed between sites. The alternative 1 site was the most diverse in terms of both habitat and species, followed by the alternative 2 site and, finally, the alternative 3 site. The alternative 1 site is mainly forested habitat with clearing (meadow) in the portion close to the road. It is bounded by wetland and forest to the west and north. The alternative 2 site consists of meadow habitat with forest west and north and wetland to the north. The alternative 3 site is an open agricultural field bordered by a hedgerow to the east. The sites adjacent to large natural areas provide better habitat for wildlife because of their connectivity with the larger natural landscape (see **Figures 2a-2c**). As a result, the species diversity was highest at the site at alternative 1, followed by alternative 2 and alternative 3.

2.3.2 Fauna

Based on field observations, 27 species of wildlife could be verified as occurring in the study area and the majority of these recordings came from avian identification through calls and sightings as presented in **Table 5**. Wildlife species identified within the study area are largely species tolerant of human disturbance and anthropogenic influences.

Bird Species

A breeding bird survey was conducted on June 21, 2019 during the breeding bird season to document breeding bird evidence (BBE) and to characterize the nature, extent and significance of breeding bird usage of the habitats within the study areas, as

presented in **Table 2**. Breeding bird survey methodology and breeding bird behaviours used as evidence of breeding success were categorized according to the Breeding Bird Atlas five-year surveys organized by Bird Studies Canada (Cadman *et al.* 2007).

A total of 25 species of birds were observed within the three study areas during field investigations. Bird species were recorded across the study area in each proposed site; however, higher species diversity was noted within more noteworthy natural heritage features such as forested areas, open agricultural fields and wetlands.

The study areas contained a relatively modest number of breeding bird species that are representative of several habitat types across each study area. Breeding evidence was obtained for 25 species of birds; confirmed in one species, and suspected in the 24 species. Presumed nesting of Barn Swallow (*Hirundo rustica*) was identified at sites for alternative 1 and 3, as multiple individuals were observed entering/exiting and flying around salt storage buildings on adjacent properties. A summary of the breeding birds documented in the study area during field investigations is presented in Appendix C.

Several bird species at risk were also identified within the datasets described above (see Section 2.3.3 for further details). There are also multiple species that are considered area-sensitive and/or interior species according to the Significant Wildlife Habitat Technical Guide (MNR 2000). A number of bird species identified within the study area are protected under the Migratory Birds Convention Act (MBCA) and/or the Fish and Wildlife Conservation Act (FWCA).

Table 3. Wildlife Species Documented within the Study Area by LGL and Others

Wildlife	Scientific Name	Common Name	Species Status under Legislation/ Local Sensitivity				Source of Species Identification	
			Canada SARA	Ontario ESA	Legal Status	Local	LGL ¹	Secondary Source ²
Birds	<i>Columba livia</i>	Rock Pigeon	-	-	-	-	*	
	<i>Charadrius vociferus</i>	Killdeer	-	-	MBCA	-	*	
	<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	-	-	MBCA	Level 2	*	
	<i>Contopus sordidulus</i>	Eastern Wood-Pewee	SC	SC	MBCA	-	*	
	<i>Myiarchus crinitus</i>	Great Crested Flycatcher	-	-	MBCA	-	*	
	<i>Cyanocitta cristata</i>	Bluejay	-	-	FWCA(P)	-	*	
	<i>Eremophila alpestris</i>	Horned Lark	-	-	MBCA	Level 3	*	
	<i>Hirundo rustica</i>	Barn Swallow	THR	THR	MBCA	Level 3	*	
	<i>Baeolophus bicolor</i>	Tufted Titmouse	-	-	MBCA	Level 3	*	
	<i>Sialia sialis</i>	Eastern Bluebird	-	-	MBCA	Level 1	*	
	<i>Turdus migratorius</i>	American Robin	-	-	MBCA	-	*	
	<i>Bombycilla cedrorum</i>	Cedar Waxwing	-	-	MBCA	-	*	
	<i>Passer domesticus</i>	House Sparrow	-	-	-	-	*	
	<i>Spinus tristis</i>	American Goldfinch	-	-	MBCA	-	*	
	<i>Vermivora cyanoptera</i>	Blue-winged Warbler	-	-	MBCA	Level 1	*	
	<i>Oporornis agilis</i>	Connecticut Warbler	-	-	-	-	*	
	<i>Setophaga petechia</i>	Yellow Warbler	-	-	MBCA	-	*	

Wildlife	Scientific Name	Common Name	Species Status under Legislation/ Local Sensitivity				Source of Species Identification	
			Canada SARA	Ontario ESA	Legal Status	Local	LGL ¹	Secondary Source ²
	<i>Passerculus sandwichensis</i>	Savannah Sparrow	-	-	MBCA	Level 1	*	
	<i>Spizella passerina</i>	Chipping Sparrow	-	-	MBCA	-	*	
	<i>Melospica melodia</i>	Song Sparrow	-	-	MBCA	-	*	
	<i>Cardinalis cardinalis</i>	Northern Cardinal	-	-	MBCA	-	*	
	<i>Dolichonyx oryzivorus</i>	Bobolink	THR	THR	MBCA	Level 2		*
	<i>Agelaius phoeniceus</i>	Red-winged Blackbird	-	-	-	-	*	
	<i>Quiscalus quiscula</i>	Common Grackle	-	-	-	-	*	
	<i>Molothrus ater</i>	Brown-headed Cowbird	-	-	-	-	*	
	<i>Icterus galbula</i>	Baltimore Oriole	-	-	MBCA	-	*	
Mammals	<i>Sciurus carolinensis</i>	Eastern Gray Squirrel	-	-	FWCA(G)	-	*	
	<i>Odocoileus virginianus</i>	White-tailed Deer	-	-	FWCA(G)	-	*	

All acronyms used in this table are defined in **Appendix B** (Acronyms and Definitions Used in Species Lists).

Legislation Referenced in the Table:

SARA – Canada *Species at Risk Act*

ESA – Ontario *Endangered Species Act*

MBCA – *Migratory Bird Convention Act*

FWCA – *Fish and Wildlife Conservation Act*

Local Ranks:

Significant Wildlife Habitat Technical Guide (MNR 2000):

SWH – Area Sensitive Species

INT - Interior Species

Level 1 – Highest Priority Level 4 – Lowest Priority (as defined by Conservation Priorities for Southern Ontario).

Source of Species Identification:

¹Species recorded within the study area (LGL 2019).

²Species recorded based on SAR data provided by the MNRF (NHIC 1m x 1m grid) (2020).

Mammal Species

Two mammal species were identified during field investigations in the study areas. The majority of mammal activity was found in association with the forested natural features at site Alternative 1. White-tailed Deer (*Odocoileus virginianus*) and Eastern Gray Squirrel (*Sciurus carolinensis*) were identified along the edge of the forested community nearest the adjacent road. Eastern Gray Squirrel was also observed in roadside trees throughout disturbed areas. A data request was sent to NPCA on December 16, 2019 to obtain additional mammal species previously recorded within the study area, however, no data was available. Given the relatively large tract of natural areas associated with these forested areas, these features are likely to function as locally significant wildlife movement corridors. Generally, the mammal species expected within the study area represent an assemblage that readily utilizes human influenced landscapes. Both mammal species identified within the study area are protected under FWCA.

2.3.3 Species at Risk

Of the 27 wildlife species recorded within the study area, two species, Eastern Wood Pewee (*Contopus sordidulus*) and Barn Swallow (*Hirundo rustica*) are considered species at risk under the Ontario *Endangered Species Act, 2007* (ESA) and/or the Canada *Species at Risk Act* (SARA). Under the ESA, Eastern Wood Pewee is listed as Special Concern and Barn Swallow is regulated as Threatened. Barn Swallow were identified feeding over the agricultural field at the alternative 3 site and using the large storage buildings adjacent to the alternative 1 and alternative 3 sites. Eastern Wood Pewee was identified adjacent to the alternative 2 site within the forest habitat. The Natural Heritage Information Centre (NHIC) database (MNRF 2019) contained records for only one rare species, Bobolink (*Dolichonyx oryzivorus*), within the vicinity of the study area, but this species was not observed during 2019 field surveys. Additionally, an information request was sent to the MNRF, Guelph District on December 16, 2019 requesting additional information on species at risk previously identified within proximity to the study area. No records were provided from this request.

Each of the three species discussed above, their respective legal status, biological requirements and the likelihood of presence within the study area are discussed below and summarized in **Table 4**.

Table 4. Wildlife Species at Risk Summary

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area	Species Confirmed in Study Areas
<i>Dolichonyx oryzivorus</i>	Bobolink	Within 1 km square containing a portion of the alternative 1 site	THR	THR	Unknown	Open country/grasslands and agricultural.	None	No
<i>Hirundo rustica</i>	Barn Swallow	Alternative 3 study area; adjacent to alternative 1 and 3 in salt storage structures	THR	THR	June 21, 2019	Open country and agricultural; man-man structures for nesting.	Open country and aquatic habitat types identified may provide habitat suitable to support foraging Barn Swallow. Suitable structures to support nesting Barn Swallow were identified adjacent to the alternative 1 and 3 study areas.	Yes

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area	Species Confirmed in Study Areas
<i>Contopus virens</i>	Eastern Wood Pewee	Adjacent to alternative 2 study area in forest habitat	SC	SC	June 21, 2019	Forest species, typically associated with forest openings, clearing or edges.	Forest and forest edges were identified as habitat for the species. However, forested areas within the study area are limited in size/distribution. Only limited habitat suitable to support this species identified within the study area. None in alternative 3.	Yes

*Preferred habitat is based on a review of secondary sources; however, these species may be found in other habitats.

Barn Swallow

Barn Swallow is regulated as Threatened under the ESA and SARA. Barn Swallow generally builds mud nests on bridges, walls, ledges and barns (Cadman *et al.* 2007). The Barn Swallow typically forages in open areas such as agricultural lands, meadows or over water. As mentioned above Barn Swallow was identified during the 2019 breeding bird surveys foraging over the open agricultural field at the alternative 3 site and is presumed to be nesting in salt storage structures adjacent to both the alternative 1 and alternative 3 study areas.

Eastern Wood Pewee

Eastern Wood Pewee is listed as 'Special Concern' under the Species at Risk in Ontario List; however, this species is not a regulated species ('Endangered' or 'Threatened') under the ESA. Eastern Wood Pewee is listed as 'Special Concern' by COSEWIC, but has no status under the SARA. Eastern Wood Pewee is found in deciduous and mixed forests and in forest openings/clearings/edges. Eastern Wood Pewee was identified during the breeding bird survey adjacent to the alternative 2 site; however, other forested habitats within the vicinity of the study areas (including those associated with the alternative 1 site) have the potential to support Eastern Wood Pewee.

Bobolink

The Bobolink, a species with a broad distribution across southern Ontario, is listed as a species at risk and is regulated as 'Threatened' under the Ontario ESA and SARA. Bobolink is listed as 'Special Concern' by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Bobolink are typically described as residents of grassland communities with an abundance of grass species that are typical of old fields. Bobolink are also commonly associated with agricultural lands. No Bobolink were identified during breeding bird surveys and suitable habitat is not found within or adjacent to any of the study areas.

2.4 Designated Natural Areas

Designated natural areas include areas identified for protection by the Ontario Ministry of Natural Resources and Forestry (MNRF), Regional Municipality of Niagara and the Town of Fort Erie. A review of the Natural Heritage Information Centre (2020) indicates there are no Areas of Natural and Scientific Interest (ANSIs), within 120 m of the study area. A portion of the Millers Creek Provincially Significant Wetland (PSW) is located within the Pettit Road and Bridge Street (alternative 1) site and immediately north of the Bowen Road and Sunset Road (alternative 2) site.

A review of Schedule 2 'Natural Heritage Features' of the Town of Fort Erie Official Plan (2011) indicates the lands associated with the Bowen Road and Sunset Road

(alternative 2) are considered Significant Natural Areas within the Town of Fort Erie. The lands associated with the Bridge Street and Pettit Road site (alternative 1) are considered Significant Natural Areas and immediately north of the site are Environmentally Sensitive Areas.

3.0 PROJECT DESCRIPTION

Following the Region of Niagara's Master Servicing Plan completed in 2017, the Region of Niagara proceeded with a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for a new Fort Erie Elevated Water Storage Tank and associated distribution and transmission system upgrades to address current and future water storage demands to accommodate future growth and water system improvements.

4.0 IMPACT ASSESSMENT AND ENVIRONMENTAL PROTECTION

4.1 Aquatic Habitats and Communities

The construction of a new elevated tank and associated site access road has the potential to result in impacts to aquatic habitats and communities only at the alternative 1 site, where the tributary of Miller Creek is directly across Pettit Road from the proposed location. There are no anticipated effects on aquatic habitats and communities at either the alternative 2 or alternative 3 sites. Effects on aquatic features related to the proposed construction could include:

- temporary disruption or permanent loss of site-specific habitat;
- temporary changes to water quality; and,
- changes in water temperature

The federal *Fisheries Act* protects fish and fish habitat through a determination of the potential for Harmful Alteration, Disruption or Destruction (HADD) to fish or fish habitat is expected as a result of activities from the project. As work will not occur within the high water mark of any watercourse, the likelihood of a HADD being caused by this project is low. Although there will be no direct impacts on the tributary of Miller Creek, indirect impacts during construction and due to potential increases in site runoff (storm water and system overflow) could occur.

Further details regarding works, net environmental effects and site-specific mitigation proposed at the crossings can be found in the sections below.

4.1.1 Temporary Disruption or Permanent Loss of Site-Specific Habitat

The new elevated tank and access road works at the alternative 1 site mentioned above have very little potential to result in the permanent loss of localized fish habitat.

To reduce the potential for serious harm to fish habitat, the following environmental protection measures will be implemented:

- work areas will be delineated with construction fencing to minimize the area of disturbance;
- appropriate sediment control structures will be installed prior to and maintained during construction to prevent entry of sediments into the watercourse - these include measures to be installed along the west side of Pettit Road where the watercourse is in close proximity to prevent intrusion into the area and to make vehicular traffic aware of the proximity of the feature;
- if dewatering measures are to be employed, effluent will be treated prior to discharge to receiving watercourse;

- good housekeeping practices related to materials storage/stockpiling, equipment fuelling/ maintenance, etc. will be implemented during construction; and,
- if necessary, disturbed riparian areas will be vegetated and/or covered with an erosion control blanket as quickly as possible to stabilize the banks and minimize the potential for erosion and sedimentation.

These environmental protection measures will greatly reduce the potential adverse effects to fish and fish habitat resulting from construction activities.

4.1.2 Temporary Change to Water Quality

The construction associated with the proposed new elevated tank and access road has the potential to alter water quality through on-site erosion of exposed materials and the subsequent impairment of the receiving waterbody/watercourse water quality with sediments and other contaminants.

Changes to water quality will be mitigated through the isolation of the work areas behind deployed and maintained erosion and sediment controls, and the treatment of effluent from dewatering prior to its release. To improve storm water quality, runoff should be directed to existing storm water management (SWM) facilities where technically feasible. In addition, all exposed areas should be vegetated as quickly as possible once the work is completed.

The implementation of these mitigation measures should eliminate potential changes to water quality to the receiving waterbodies/watercourses.

4.1.3 Changes in Water Temperature

The thermal regime of a receiving waterbody/watercourse may be altered by storm water runoff or removal of riparian vegetation that shades the watercourse. In the summer, runoff can become superheated through contact with paved surfaces, which, when discharged to a receiving watercourse can result in thermal shock, thereby injuring or killing aquatic organisms. Coldwater or coolwater streams are usually considered more sensitive to changes in water temperature than warmwater streams.

It is expected that there will be no significant increase in temperature as a result of the proposed works as long as appropriate mitigation (see above) is implemented.

4.2 Vegetation and Vegetation Communities

Construction of the new Fort Erie elevated tank has the potential to result in impacts to vegetation and vegetation communities. Effects on vegetation related to these modifications could include:

- displacement of / disturbance to vegetation and vegetation communities; and,

- displacement of rare, threatened or endangered vegetation or significant vegetation communities.

4.2.1 Displacement and/or Disturbance to Vegetation Communities/Vegetation

Clearing of vegetation will be required to accommodate the proposed elevated tank.

The proposed construction will result in the removal of approximately 0.31 ha of naturalized areas. The largest impact will occur to the deciduous forest community with a removal of 0.21 ha. In addition, a total of approximately 0.06 ha and 0.04 ha of cultural vegetation communities and wetland communities respectively, will be removed (see **Figure 3a**).

New forest edges are exposed to greater potential for non-native and invasive species infiltration further into the forest, and as such, forest edge management is recommended for the mixed forest community. Implementation of forest edge management will enhance the forest edge and increase resiliency against invasive species and windthrow. Forest edge management should be implemented to mitigate impacts to the deciduous forest and wetland community. Forest edge management is further discussed in **Section 4.2.2.1**.

Overall, impacts resulting in the loss of vegetation within these cultural meadow community are considered to be minor. Cultural communities typically persist in areas that are regularly disturbed, and as a result, generally contain a high proportion of invasive and non-native plant species that are tolerant of these conditions.

4.2.2 Displacement of Rare, Threatened or Endangered Vegetation of Significant Vegetation

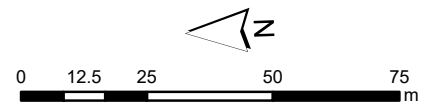
As noted in **Section 2.4**, a portion of the preferred site is identified as provincially significant wetland (**Figure 3b**) and the proposed access road is through the wetland community, as such consultation should be undertaken with MNRF and compensation should be provided for the loss of wetland habitat. In addition, the lands within the preferred site are identified as 'significant natural areas' in the Town of Fort Erie Official Plan and consequently, a portion of 'significant natural area' will be removed as a result of the proposed elevated water tank. Forest edge management should be implemented along the newly created edges within the deciduous swamp and deciduous forest communities to mitigate the impacts from the proposed construction and provide protection to the remaining portions of these communities on site. Since NPCA does not have edge management guidelines, following the Toronto and Region Conservation Authority *Forest Edge Management Plan Guidelines* (2004) is recommended.



LEGEND

- Proposed Design
- Watercourse
- Approximated Regulation Lands (NPCA)
- Vegetation Community**
 - Vegetation Community Boundary
 - Impacted Vegetation Area
- CUM1-1a** Dry - Moist Old Field Meadow Type
- FOD** Deciduous Forest
- M** Manicured
- SWD** Deciduous Swamp

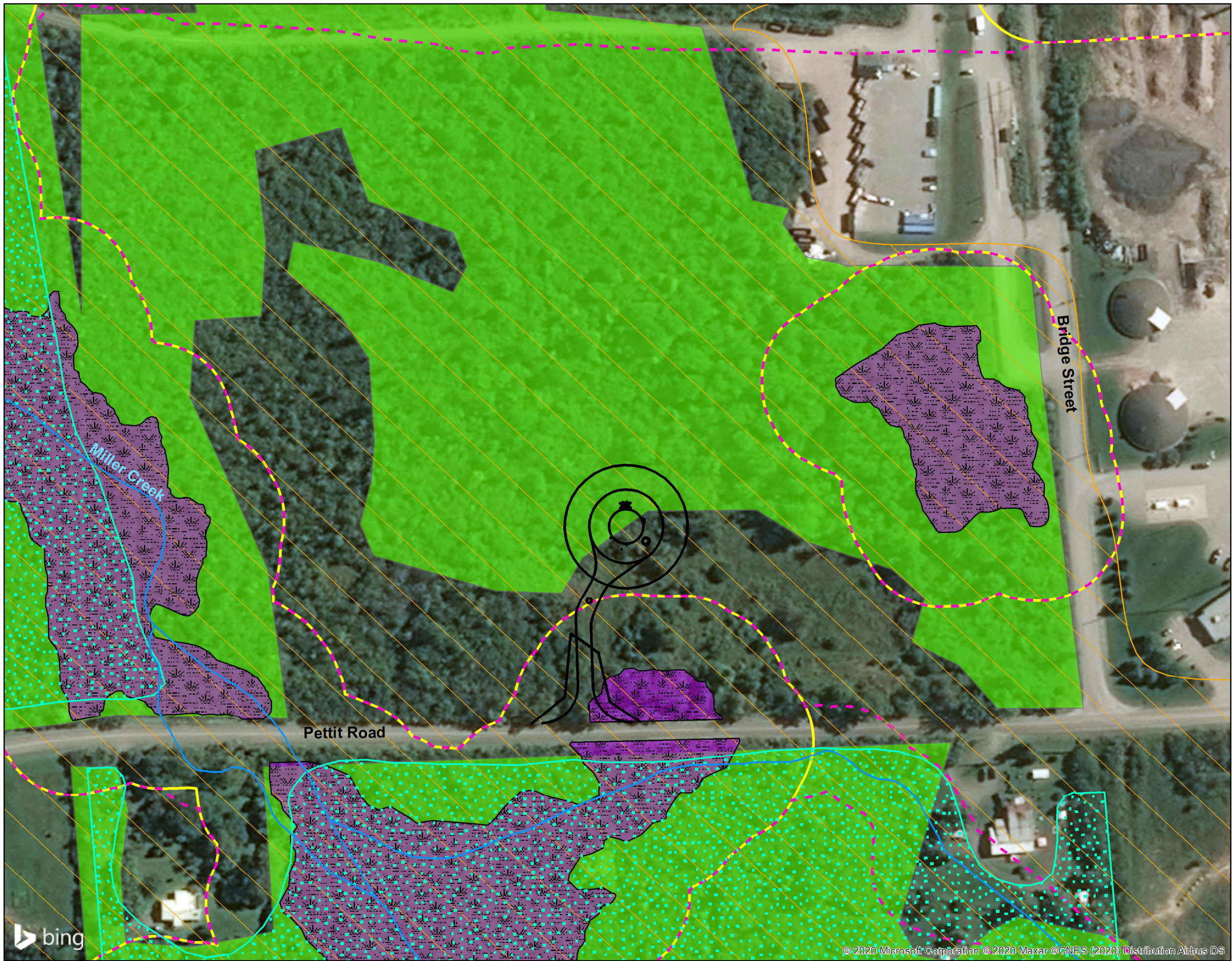
Data Sources: Niagara Peninsula ConservAtion Authority & Ontario Ministry of Natural Resources and Forestry (LIO).
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Impact Assessment Vegetation Communities



Project: TA8901	Figure: 3a
Date: October, 2020	Prepared By: AJ
Scale: 1:1,500	Verified By: JMV



LEGEND

- Proposed Design
- Watercourse
- Growth Plan for the Greater Golden Horseshoe
- Deer Wintering Area
- Wooded Area
- Provincially Significant Wetland: Millers Creek Wetland Complex
- Regulated Wetlands (NPCA)
- Wetland Allowance (NPCA)
- Approximated Regulation Lands (NPCA)

Data Sources: Niagara Peninsula Conservation Authority & Ontario Ministry of Natural Resources and Forestry (LIO).

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0 12.5 25 50 75 m

Impact Assessment Natural Heritage



Project: TA8901	Figure: 3b
Date: October, 2020	Prepared By: AJ
Scale: 1:1,500	Verified By: JMV

4.2.2.1 Forest Edge Management

The following forest edge management measures should be implemented in accordance with TRCA (2004). Where new forest edges are exposed, forest management techniques should be implemented to mitigate the associated impacts to the forest communities. As part of the Forest Edge Management, mitigation measures will include, but not be limited to the following:

- Planting of appropriate native trees, shrubs and ground flora shall be undertaken as soon as possible following vegetation removals. Plantings along the disturbed forest edges will provide a protective buffer. Newly exposed forest edges become exposed to a greater potential for aggressive and invasive species infiltration further into the forest interior causing greater impacts. Micro-habitat conditions are also altered due to a greater incident of light penetrating further into the forest resulting in decreased soil moisture and increased windthrow. Plant species used within the buffer shall be somewhat similar to those in the adjacent habitat and be non-invasive in nature.
- Grading within areas where edges will be newly created shall be designed to meet existing grades a minimum of 3 m away from the tree drip-line.
- Compaction of soils on lands immediately adjacent to the newly exposed forest edge will be minimized to the extent possible. Construction activities can result in cut roots, and soil compaction due to re-grading and fill placement. Cut tree roots can reduce a tree's capacity to uptake and transfer water and nutrients, and soil compaction can result in a decrease in air spaces within the soil which can reduce the infiltration capacity of the soil, limits soil oxygen and limits root penetration. Decompaction efforts and methodology shall be site specific. Where decompaction is required, it shall extend to a minimum depth of approximately 25 cm.
- Drainage patterns adjacent to newly created edges shall be maintained to avoid changes in soil moisture, this is especially important around wetland areas and forest communities with substrates that maintain increased moisture capacity.
- A plan must be in place to immediately mitigate the spread/invasion of aggressive plant species.
- A monitoring plan must be developed to ensure that the newly planted material survives and fulfils the intended function and to ensure that the inadvertent spread of aggressive or non-native plant species is appropriately managed.

4.3 Wildlife and Wildlife Habitat

Construction of the elevated tank and access road have the potential to result in the displacement of and disturbance to wildlife and wildlife habitat.

Effects on wildlife related to these modifications may include:

- displacement of wildlife and wildlife habitat;
- disturbance to wildlife from noise, light and visual intrusion;
- potential impacts to migratory birds; and,
- displacement of rare, threatened or endangered wildlife and significant wildlife habitat.

4.3.1 Displacement of Wildlife and Wildlife Habitat

Works associated with the construction of the elevated water storage tank and access road will take place within a relatively small footprint within the alternative 1 site. Part of the footprint will be within areas previously disturbed (meadow habitat), but portions will be within the Millers Creek PSW and within the wooded area that encompasses much of the site. The meadow habitat is disturbed, relatively low-quality wildlife habitat, and the PSW and forest are generally higher quality habitats. These latter two habitats support areas consisting of natural or semi-natural vegetation communities and are expected to contribute to the wildlife assemblage identified within the lands examined.

Because infringement into the higher-quality natural areas is mainly along the edge of the above-mentioned natural heritage features or encompasses only a small portion of the feature, these land use changes are not expected to have any significant impact on wildlife and/or wildlife habitat using the area. Displacement of species at risk habitat is not anticipated (see Section 4.3.3).

The proposed activities at this site should occur outside of the breeding bird window (see Section 4.3.2), to minimize disturbance to birds and other wildlife species utilizing habitats within the study area.

An analysis of vegetation removal per vegetation (wildlife habitat) community is presented in Section 4.2 (above).

4.3.2 Disturbance to Wildlife from Noise, Light and Visual Intrusion

Noise, light and visual intrusion may alter wildlife activities and patterns. In human-influenced settings, such as the study area, wildlife has become acclimatized to anthropogenic conditions and only those fauna that are tolerant of human activities remain. Minor edge effect to natural areas may occur as the proposed project will result in an increase in noise, light, and visual intrusion, especially during construction. Given that wildlife is acclimatized to the presence of the existing infrastructure to the east and the south, and the road to the west, the tolerance of the wildlife assemblage to human activities and the limited zone of influence of the proposed works, disturbance to wildlife from noise, light and visual intrusion will have no significant adverse effects.

4.3.3 Potential Impacts to Migratory Birds

As identified above (**Section 2.3.2**), numerous bird species listed under the *Migratory Birds Convention Act* (MBCA) were identified within the study area. The MBCA prohibits the killing, capturing, injuring, taking or disturbing of migratory birds (including eggs) or the damaging, destroying, removing or disturbing of nests. While migratory insectivorous and non-game birds are protected year-round, migratory game birds are only protected from March 10 to September 1. The study area lands fall within Environment Canada's Nesting Zone C2 (Nesting Period: end of March – end of August). Consequently, to comply with the requirements of the MBCA, it is recommended that disturbance, clearing or disruption of vegetation where birds may be nesting should be completed outside the window of April 1 to August 31 to avoid the breeding bird season for the majority of the bird species protected under the act. In the event that these activities must be undertaken from April 1 to August 31, a nest screening survey will be conducted by a qualified avian biologist. If an active nest is located, a mitigation plan shall be developed and provided to Environment Canada – Ontario Region for review prior to implementation.

4.3.4 Displacement of Rare, Threatened or Endangered Wildlife or Significant Wildlife Habitat

Background data and LGL surveys conducted during 2019 indicated three species at risk that have been previously identified or have been found to be present within the vicinity of the study area (discussed in **Section 2.3.3**). Two of these species (Barn Swallow and Eastern Wood Pewee) were observed during the field investigations at the alternative 1 and 3 study areas (Barn Swallow) and the alternative 2 study area (Eastern Wood Pewee) using adjacent habitats to the properties (Barn Swallow were using the actual alternative 3 property for foraging). No Bobolink were observed and no suitable habitat for this species exists within or within the vicinity of any of the study areas. Suitable habitat for Eastern Wood Pewee can be found on the alternative 1 site within the forest and forest edge habitat. Suitable habitat for Barn Swallow exists only to the south of the alternative 1 site in the large storage buildings. The likelihood of the project having a negative effect on species at risk is low. The only potential effects could be on the two species of birds through infringement into forest habitat for Eastern Wood Pewee caused by the construction of the elevated tank and access road. Because of the unlikelihood of adverse effects on species at risk, and because Eastern Wood Pewee is listed as Special Concern, no permitting requirement under the ESA is anticipated; however, consultation with the MNRF during the detail design phase is warranted. Follow-up field surveys may be required during detailed design to further assess presence/absence and potential habitat function of lands within the study area.

4.4 Designated Natural Areas

As noted in **Section 2.4**, there are portions of a Provincially Significant Wetland located within the alternative 1 study area. There are also 'significant natural areas', a designation within the Town of Fort Erie Official Plan, that are within the forest habitat within the alternative 1 site. Portions of these areas will be removed to accommodate the construction of the elevated tank and access road (**Figure 3b**). Edge management should be implemented along all natural area edges created by the project to ensure encroachment is minimized. Consultation with MNRF and NPCA will be necessary during detail design to determine whether compensation for the loss of the natural areas is warranted.

5.0 PERMITS AND APPROVALS DURING DETAIL DESIGN

5.1 Fisheries Act

As discussed above in Section 4.1, the proposed works are likely to not affect the tributary of Miller Creek on the west side of Pettit Road. Therefore, the project will likely not cause a HADD. However, should impacts to the watercourse be anticipated, DFO review may become necessary. Therefore, it is recommended that a fish and fish habitat survey be conducted during detailed design.

5.2 Species At Risk Act

The works proposed at the alternative 1 site will not affect any species listed under Schedule 1 of SARA. During detailed design, if any additional species at risk are encountered, consultation with DFO and MNRF regarding the works proposed may need to be undertaken to determine whether a permit is required.

5.3 Endangered Species Act

No species regulated under the ESA will be affected by the proposed project on the alternative 1 site. Further detailed studies may be required by the reviewing agencies to ascertain whether additional species at risk are using the site. If required, the necessary permit(s) should be secured during detailed design.

5.4 NPCA Regulation 155/06

Based on a review of NPCA mapping, portions of the proposed construction activities within the alternative 1 study area are subject to Ontario Regulation 155/06 NPCA Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. A permit from the NPCA, pursuant to O. Reg. 155/06, should be secured during detail design.

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Appendix A Vascular Plant List

Appendix A. Vascular Plant List

[illegible]

[illegible]

Scientific Name	Common Name	GRank	SRank	MNRF	COSEWIC	CUM1-1a	CUM1-1b	CUM1-1c	Hedgerow	FOD	FOD5	SWD
<i>Ambrosia artemisiifolia</i>	common ragweed	G5	S5			X		X				
<i>Aster</i> sp.	aster					X		X				
<i>Cichorium intybus</i>	chicory	G?	SE5			X		X				
<i>Cirsium arvense</i>	Canada thistle	G?	SE5			X		X				
<i>Cirsium vulgare</i>	bull thistle	G5	SE5					X				
<i>Erigeron annuus</i>	daisy fleabane	G5	S5				X					
<i>Hieracium caespitosum</i>	field hawkweed		SE5					X				
<i>Leucanthemum vulgare</i>	ox-eye daisy	G?	SE5			X	X					
<i>Matricaria discoidea</i>	pineapple-weed	G5	SE5					X				
<i>Solidago</i> sp.	goldenrod					X		X				
<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	field sow-thistle	G?T?	SE5					X				
<i>Taraxacum officinale</i>	common dandelion	G5	SE5			X	X					
<i>Tussilago farfara</i>	coltsfoot	G?	SE5									X
Juncaceae	Rush Family											
<i>Juncus effusus</i> ssp. <i>solutus</i>	soft rush	G5T?	S5							X		X
Cyperaceae	Sedge Family											
<i>Carex bebbii</i>	Bebb's sedge	G5	S5					X				X
<i>Carex crinita</i>	fringed sedge	G5	S5									X
Poaceae	Grass Family											
<i>Agrostis gigantea</i>	red-top	G4G5	SE5					X				
<i>Bromus inermis</i> ssp. <i>inermis</i>	awnless brome	G4G5T?	SE5			X	X					
<i>Dactylis glomerata</i>	orchard grass	G?	SE5				X	X				
<i>Elymus repens</i>	quack grass	G?	SE5				X	X				
<i>Hordeum jubatum</i> ssp. <i>jubatum</i>	squirrel-tail grass	G5T?	SE5					X				
<i>Phalaris arundinacea</i>	reed canary grass	G5	S5									X
<i>Phleum pratense</i>	timothy	G?	SE5			X	X	X				
<i>Phragmites australis</i>	common reed	G5	S5									X
<i>Poa compressa</i>	Canada blue grass	G?	S5				X					
<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky bluegrass	G5T	S5			X	X			X		
<i>Setaria faberi</i>	giant foxtail	G?	SE4					X				
<i>Setaria viridis</i>	green foxtail	G?	SE5					X				
Liliaceae	Lily Family											
<i>Maianthemum racemosum</i> ssp. <i>racemosum</i>	false Solomon's seal	G5T	S5								X	
<i>Trillium grandiflorum</i>	white trillium	G5	S5								X	

* Non-native species

X present

Refer to **Appendix B** for species rank definitions.

Appendix B: Acronyms and Definitions Used in Species Lists

Species Status

GRANK	Global Rank
Global ranks are assigned by a consensus of the network of Conservation Data Centres, scientific experts, and The Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies or variety. The most important factors considered in assigning global ranks are the total number of known, extant sites world-wide, and the degree to which they are potentially or actively threatened with destruction. Other criteria include the number of known populations considered to be securely protected, the size of the various populations, and the ability of the taxon to persist at its known sites. The taxonomic distinctness of each taxon has also been considered. Hybrids, introduced species, and taxonomically dubious species, subspecies and varieties have not been included.	
Short Form	Definition
G1	Extremely rare ; usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
G2	Very rare ; usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.
G3	Rare to uncommon ; usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
G4	Common ; usually more than 100 occurrences; usually not susceptible to immediate threats.
G5	Very common ; demonstrably secure under present conditions.
GH	Historic, no records in the past 20 years.
GU	Status uncertain, often because of low search effort or cryptic nature of the species; more data needed.
GX	Globally extinct. No recent records despite specific searches.
?	Denotes inexact numeric rank (i.e. G4?).
G	A "G" (or "T") followed by a blank space means that the NHIC has not yet obtained the Global Rank from The Nature Conservancy.
G?	Unranked, or, if following a ranking, rank tentatively assigned (e.g. G3?).
Q	Denotes that the taxonomic status of the species, subspecies, or variety is questionable.
T	Denotes that the rank applies to a subspecies or variety.

SRANK	Provincial Rank
Provincial (or Sub-national) ranks are used by the Ontario Ministry of Natural Resources Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario. By comparing the global and provincial ranks, the status, rarity, and the urgency of conservation needs can be ascertained. The NHIC evaluates provincial ranks on a continual basis and produces updated lists at least annually.	
Short Form	Definition
S1	Critically Imperiled in Ontario because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation.
S2	Imperiled in Ontario because of rarity due to very restricted range, very few populations (often 20 or fewer occurrences) steep declines or other factors making it very vulnerable to extirpation.
S3	Vulnerable in Ontario due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4	Apparently Secure —Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5	Secure —Common, widespread, and abundant in Ontario.
SX	Presumed Extirpated – Species or community is believed to be extirpated from Ontario.
SH	Possibly Extirpated – Species or community occurred historically in Ontario and there is some possibility that it may be rediscovered.
SNR	Unranked —Conservation status in Ontario not yet assessed
SU	Unrankable —Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
SNA	Not Applicable —A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
S#S#	Range Rank —A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

COSEWIC	Committee on the Status of Endangered Wildlife in Canada
The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the national status of wild species that are considered to be at risk in Canada.	
Status	Definition
Extinct (X)	A wildlife species that no longer exists.
Extirpated (XT)	A wildlife species no longer existing in the wild in Canada, but occurring elsewhere.
Endangered (E)	A wildlife species facing imminent extirpation or extinction.
Threatened (T)	A wildlife species likely to become endangered if limiting factors are not reversed.
Special Concern (SC)	A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

Not at Risk (NAR)	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.
Data Deficient (DD)	A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.

COSSARO/OMNR	Committee on the Status of Species at Risk in Ontario/Ontario Ministry of Natural Resources
The Committee on the Status of Species at Risk in Ontario (COSSARO)/Ontario Ministry of Natural Resources (OMNR) assesses the provincial status of wild species that are considered to be at risk in Ontario.	
Status	Definition
Extinct (EXT)	A species that no longer exists anywhere.
Extirpated (EXP)	A species that no longer exists in the wild in Ontario but still occurs elsewhere.
Endangered (Regulated) (END-R)	A species facing imminent extinction or extirpation in Ontario which has been regulated under Ontario's <i>Endangered Species Act</i> .
Endangered (END)	A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's <i>Endangered Species Act</i> .
Threatened (THR)	A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
Special Concern (SC)	A species with characteristics that make it sensitive to human activities or natural events.
Not at Risk (NAR)	A species that has been evaluated and found to be not at risk.
Data Deficient (DD)	A species for which there is insufficient information for a provincial status recommendation.

Species Status under Federal Legislation

MBCA	Migratory Birds Convention Act
The Canada <i>Migratory Birds Convention Act</i> provides for the protection of migratory birds in Canada and the United States. The provisions of this Act are implemented through the Migratory Bird Regulations.	
Bird species that are regulated under the <i>Migratory Birds Convention Act</i> are noted in the applicable species lists.	

SARA	Species at Risk Act
The Canada <i>Species at Risk Act</i> provides a framework for actions across Canada to ensure the survival of wildlife species and the protection of our natural heritage. It sets out how to decide which species are a priority for action and what to do to protect a species. It identifies ways governments, organizations and individuals can work together, and it establishes penalties for a failure to obey the law. Regulated species are listed in Schedules 1, 2 and 3 of the Act.	
Schedule 1 SARA (1)	Species that are currently covered under the Act.
Schedule 2 SARA (2)	Species that are endangered or threatened that have not been re-assessed by COSEWIC for inclusion on Schedule 1.
Schedule 3 SARA (3)	Species that are of special concern that have not yet been re-assessed by COSEWIC for inclusion on Schedule 1.

Species Status under Provincial Legislation

ESA Endangered Species Act		
The Ontario <i>Endangered Species Act</i> provides for the conservation, protection, restoration and propagation of species of fauna and flora of the Province of Ontario that are threatened with extinction. Regulated species are listed in Ontario Regulation 338.		
Schedule No.	Short Form	Status
Schedule 1 ESA (1)	EXT	The species of flora and fauna listed in Schedule 1 are declared to be threatened with extinction.
Schedule 2 ESA (2)	EXP	The species of flora and fauna listed in Schedule 2 are declared to be extirpated.
Schedule 3 ESA (3)	END	The species of flora and fauna listed in Schedule 3 are declared to be endangered.
Schedule 4 ESA (4)	THR	The species of flora and fauna listed in Schedule 4 are declared to be threatened.
Schedule 5 ESA (5)	SC	The species of flora and fauna listed in Schedule 5 are declared to be special concern.

FWCA Fish and Wildlife Conservation Act		
The Ontario <i>Fish and Wildlife Conservation Act</i> outlines the restrictions for hunting, trapping and fishing; handling of live wildlife; sale, purchase and transport of wildlife; and, licences that can be secured under the Act. Under Schedules 1 to 11 of the Act, wildlife are grouped for the purpose of regulating these species. These schedules are further defined below.		
Note: where there is a conflict between this Act and the Ontario <i>Endangered Species Act</i> , the provision with the most protection will prevail (s. 2 of the <i>Fish and Wildlife Conservation Act</i>).		
Schedule No.	Short Form	Status
Schedule 1	Furbearing – M	The species of fauna listed in Schedule 1 are declared to be furbearing mammals.
Schedule 2	Game – M	The species of fauna listed in Schedule 2 are declared to be game mammals.
Schedule 3	Game – B	The species of fauna listed in Schedule 3 are declared to be game birds.
Schedule 4	Game – R	The species of fauna listed in Schedule 4 are declared to be game reptiles.
Schedule 5	Game – A	The species of fauna listed in Schedule 5 are declared to be game amphibians.
Schedule 6	Specially Protected – M	The species of fauna listed in Schedule 6 are declared to be specially protected mammals.
Schedule 7	Specially Protected – R	The species of fauna listed in Schedule 7 are declared to be specially protected birds (raptors).
Schedule 8	Specially Protected – B	The species of fauna listed in Schedule 8 are declared to be specially protected birds (other than raptors).
Schedule 9	Specially Protected – R	The species of fauna listed in Schedule 9 are declared to be specially protected reptiles.

FWCA	Fish and Wildlife Conservation Act	
The Ontario <i>Fish and Wildlife Conservation Act</i> outlines the restrictions for hunting, trapping and fishing; handling of live wildlife; sale, purchase and transport of wildlife; and, licences that can be secured under the Act. Under Schedules 1 to 11 of the Act, wildlife are grouped for the purpose of regulating these species. These schedules are further defined below.		
Note: where there is a conflict between this Act and the Ontario <i>Endangered Species Act</i> , the provision with the most protection will prevail (s. 2 of the <i>Fish and Wildlife Conservation Act</i>).		
Schedule No.	Short Form	Status
Schedule 10	Specially Protected – A	The species of fauna listed in Schedule 10 are declared to be specially protected amphibians.
Schedule 11	Specially Protected – I	The species of fauna listed in Schedule 11 are declared to be specially protected invertebrates.

Local Species Status

Conservation Priorities for Southern Ontario
Niagara Level 1 Highest Priority Level 4 Lowest Priority

BSC	Bird Studies Canada
The Bird Studies Canada <i>Conservation Priorities for the Birds of Southern Ontario</i> (1999), based on work completed by Bird Studies Canada, the Canadian Wildlife Service and the MNR identifies bird species of high conservation priority. This list was prepared to assist municipalities in identifying significant natural heritage features, through using the information regarding the presence of birds of conservation priority in their municipality. Birds of conservation priority have been noted (BSC) in the appropriate species lists.	

**Appendix C: Breeding Bird Species Identified Along Pettit Road and
Bridge Street New Elevated Tank Site**

Scientific Name	Common Name	SARA ¹	ESA ¹	Legal Status ¹	Other ¹	Site # ²
<i>Columba livia</i>	Rock Pigeon	-	-	-	-	3
<i>Charadrius vociferus</i>	Killdeer	-	-	MBCA	-	3
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	-	-	MBCA	Level 2	1
<i>Contopus sordidulus</i>	Eastern Wood-Pewee	SC	SC	MBCA	-	2
<i>Myiarchus crinitus</i>	Great Crested Flycatcher	-	-	MBCA	-	2
<i>Cyanocitta cristata</i>	Bluejay	-	-	FWCA(P)	-	2, 3
<i>Eremophila alpestris</i>	Horned Lark	-	-	MBCA	Level 3	3
<i>Hirundo rustica</i>	Barn Swallow	THR	THR	MBCA	Level 3	1, 3
<i>Baeolophus bicolor</i>	Tufted Titmouse	-	-	MBCA	Level 3	2
<i>Sialia sialis</i>	Eastern Bluebird	-	-	MBCA	Level 1	1
<i>Turdus migratorius</i>	American Robin	-	-	MBCA	-	1, 2, 3
<i>Bombycilla cedrorum</i>	Cedar Waxwing	-	-	MBCA	-	1
<i>Passer domesticus</i>	House Sparrow	-	-	-	-	3
<i>Spinus tristis</i>	American Goldfinch	-	-	MBCA	-	1, 2, 3
<i>Vermivora cyanoptera</i>	Blue-winged Warbler	-	-	MBCA	Level 1	1
<i>Oporornis agilis</i>	Connecticut Warbler	-	-	-	-	1
<i>Setophaga petechia</i>	Yellow Warbler	-	-	MBCA	-	1, 2
<i>Passerculus sandwichensis</i>	Savannah Sparrow	-	-	MBCA	Level 1	3
<i>Spizella passerina</i>	Chipping Sparrow	-	-	MBCA	-	1, 3
<i>Melospica melodia</i>	Song Sparrow	-	-	MBCA	-	1, 2

Scientific Name	Common Name	SARA ¹	ESA ¹	Legal Status ¹	Other ¹	Site # ²
<i>Cardinalis cardinalis</i>	Northern Cardinal	-	-	MBCA	-	1, 2
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	-	-	-	-	2
<i>Quiscalus quiscula</i>	Common Grackle	-	-	-	-	1
<i>Molothrus ater</i>	Brown-headed Cowbird	-	-	-	-	1, 2
<i>Icterus galbula</i>	Baltimore Oriole	-	-	MBCA	-	1

¹For definitions of species ranks, refer to **Appendix B**.

²Site (alternative).