



Environmental Impact Statement

40 Frank Nighbor Place, Kanata ON K2V 1B9

API Consultants Inc.
Final Report
Client Reference no.

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Production team

API Consultants Inc.

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Revisions and publications log

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0A	April 2023	Preliminary version published for comments
0B	April 2023	Final version published after comments

Distribution

1 PDF copy	Natalie Garavito
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Executive Summary

Englobe Corp. (Englobe) was retained by API Consultants Inc. (herein referred to as the “Client”), on behalf of 401 Real Estate Trust Inc., the current property owners, to prepare an Environmental Impact Statement (EIS) report for the property located at 40 Frank Nighbor Place in Kanata, Ontario (herein referred to as the “Site”).

The objective of the current EIS was to describe existing Site conditions, assess Species at Risk habitat, and assess any mitigation measures required for the future proposed development project. In addition, the project must demonstrate that there will be no overall significant negative impacts on the natural features and functions of the surrounding areas and ensure there are no negative impacts to endangered and/or threatened species or their habitat. This development project is to be carried out on private land and is subject to provincial environmental regulations, including the Endangered Species Act (2007).

The Site is currently vacant; however, there are plans for the potential development of a six-storey Marriott Hotel, with one basement level. It is Englobe’s understanding that the proposed development will include a 115 room hotel and restaurant. The proposed development of the Site is restricted to the Site boundaries and is approximately 50 m away from the nearest mapped watercourse, the Carp River Municipal Drain. No SAR have previously been reported on Site, although some have been reported in the areas surrounding the Site. Based on available MVCA mapping, the southwestern portion of the Site exists within the MVCA Regulation Limits. As such, it is anticipated that a MVCA permit will be required prior to the planned development, pursuant to Ontario Regulation 153/06. It should be noted that the MVCA may impose additional project monitoring needs and/or studies in support of the permitting application, although at this time, taking into account implementation of mitigation measures outlined in this report, this project has been determined not likely to cause significant adverse environmental effects.

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1 Introduction

1.1 General

Englobe Corp. (Englobe) was retained by API Consultants Inc. (herein referred to as the “Client”), on behalf of 401 Real Estate Trust Inc., the current property owners, to prepare an Environmental Impact Statement (EIS) report for the property located at 40 Frank Nighbor Place in Kanata, Ontario (herein referred to as the “Site”). A Tree Conservation Report (TCR) is also being undertaken in addition to the EIS and will be presented under a separate cover.

The objective of the current EIS was to describe existing Site conditions, assess Species at Risk habitat, and assess any mitigation measures required for the future proposed development project. In addition, the project must demonstrate that there will be no overall significant negative impacts on the natural features and functions of the surrounding areas and ensure there are no negative impacts to endangered and/or threatened species or their habitat. This development project is to be carried out on private land and is subject to provincial environmental regulations, including the Endangered Species Act (2007). The Site is currently vacant; however, it is Englobe’s understanding that the proposed redevelopment of the Site is currently understood to include a six-storey Marriot Hotel.

This report was prepared for the exclusive use of the Client. Any use of this report by any third party, or any reliance on or decisions to be made based on it, are the responsibility of such parties. Englobe accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. Full Report Limitations are provided in Section 11 of this report.

1.2 Site Description

The Site is located at 40 Frank Nighbor Place, Kanata, ON K2V 1B9. It is located in the City of Ottawa’s Kanata South Ward, on the west side of Frank Nighbor Place. The Site is an irregularly shaped parcel of land, with a total property area of approximately 8115 m² (GeoOttawa, 2022). It is located within an area zoned as IL6[1414] H(30)-h - Light Industrial Zone. Permitted land uses include a hotel per the City of Ottawa Part 11 - Industrial Zones by-law website (available at: <https://ottawa.ca/en/living-ottawa/laws-licences-and-permits/laws/laws-z/zoning-law-no-2008-250/zoning-law-2008-250-consolidation/part-11-industrial-zones-sections-199-206#section-414f5962-2b55-427e-9e34-eb2236a1a008>). At the time of Englobe’s assessment, the Site consisted of vacant land. A Site Location Map is provided as Figure 1 in Appendix A.

A summary of the Site details is presented below.

Table 1.2. Site detail summary.

Item	Detail
Municipal Address	40 Frank Nighbor Place, Kanata, ON K2V 1B9
Site Area	8127 m ²
Property Identification No.	04509-0152 (LT)
Legal Description	Part Block 2 Plan 4M1012 Part 1, Plan 4R30745 TOGETHER WITH AN EASEMENT OVER PART OF BLOCK 2 PLAN 4M1012, PARTS 2, 2, 5, 8, 11 AND 13 PLAN 4R30745 AS IN OC1955094; CITY OF OTTAWA

2 Project Description

The Site is currently vacant; however, there are plans for the potential development of a six-storey Marriott Hotel, with one basement level. It is Englobe's understanding that the proposed development will include a 115 room hotel and restaurant. See below for a visual representation and draft Site Plan of the proposed development provided by the Client.



Figure 1. Visual representation of the proposed development prepared by Saplys Architects Inc., provided by the Client.

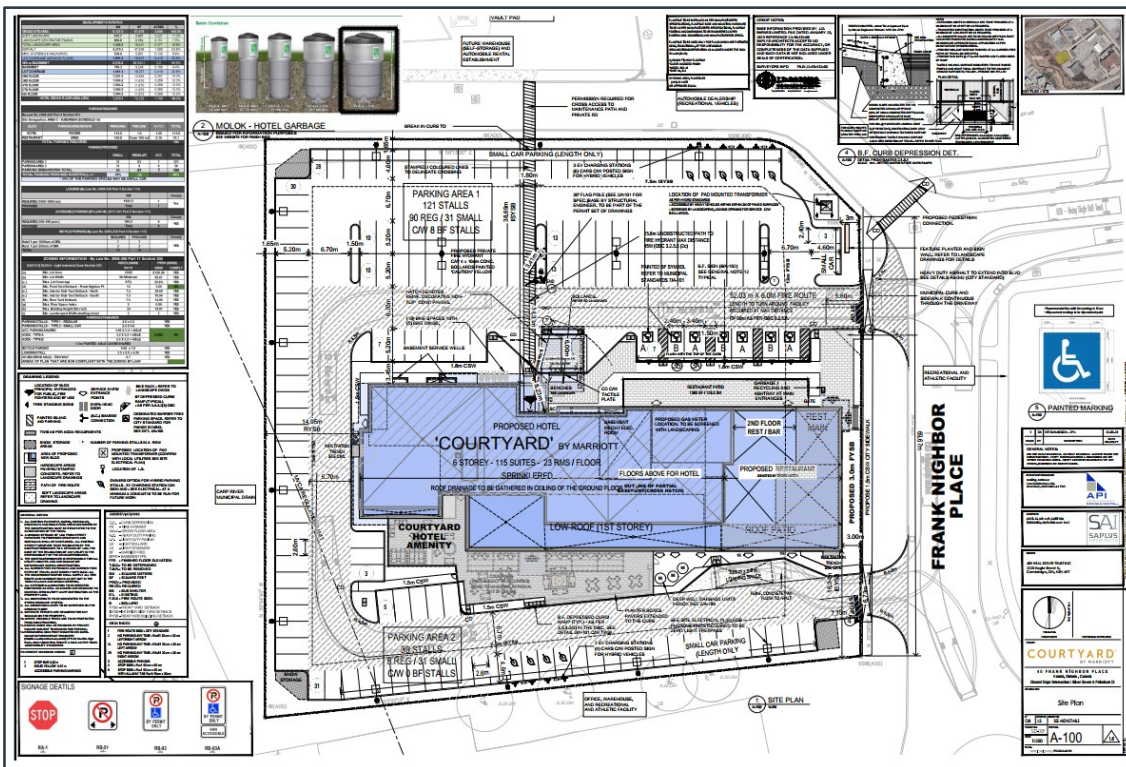


Figure 2. Proposed Site Plan prepared by Saplys Architects Inc., provided by the Client.

3 Environmental Policy Context

Several legislation and policy documents were reviewed as part of this assessment to gain an understanding of the natural heritage features and regulations that may be applicable to the Site. An overview of these documents is provided in Table 3 below.

Table 3. Regulation Overview.

Document/Act/Regulation	Description
Provincial	
The Provincial Policy Statement (Ministry of Municipal Affairs and House, MMAH 2020)	The Provincial Policy Statement (PPS) is issued under Section 3 of the Ontario Planning Act, R.S.O. 100 and came into effect on May 1, 2020. The PPS provides direction on matters of provincial interest related to land use planning and development projects; and includes policies for protecting the Province’s natural heritage, water, agricultural, mineral, cultural and archaeological resources. As applicable to this report, Section 2.1 of the PPS aims to protect natural features/areas for the long term, maintain diversity and connectivity of these features, and identifies areas to be protected during development and site alteration activities.
Endangered Species Act, 2007, S.O c.6 (ESA 2007)	Wildlife designated as threatened or endangered under O. Reg 230/08 - <i>Species at Risk in Ontario List</i> under the ESA (2007) receives both species (Section 9) and habitat (Section 10) protection. If any of these species or their habitats are identified on Site, authorization under clause 17(2) of the ESA (2007) or habitat compensation may be required in order to proceed with the proposed development.
Conservation Authorities Act, R.S.O. 1990, c. C.27 (CAA 1990)	The Site is within the jurisdiction of the Mississippi Valley Conservation Authority (MVCA). The MVCA regulates activities that occur within their regulation limits or described under Section 2 of O.Reg 153/06- <i>Mississippi Valley Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses</i> .
Federal	
Fisheries Act, R.S.C., 1985, c.F-14. (FA 1985)	The Fisheries Act (1985) aims to maintain healthy, sustainable and productive Canadian fisheries through the protection of fish and fish habitat. Typically harm to fish and fish habitat can be avoided through the implementation of appropriate best management practices and mitigation measures such as by planning in-water work to respect fish timing windows, maintaining riparian vegetation, and ensuring proper sediment control. If the project is determined to likely results in death of fish or the harmful alteration, disruption or destruction of fish habitat (HADD), an authorization under the <i>Fisheries Act</i> is required.
Migratory Bird Convention Act, 1994 (MBCA, 1994).	The incidental taking of nests and eggs is governed by Migratory Birds Regulations (MBR) under sub-Section 5(a), which prohibits the damage, disturbance, destruction, or taking of nests and eggs under the MBCA, 1994. Although Environment and Climate Change Canada (ECCC) issues permits allowing for the destruction of nests for scientific or agricultural purposes, similar permits are not available for industrial activities. In general, the MBR recommends avoiding potentially destruction activities during key nesting periods, which is from April to late-August in the area of the Site (ECCC, 2017).
Species at Risk Act., S.C. 2002, c.29. (SARA 2002)	The Species at Risk Act (SARA) prohibits carrying on of a work, undertaking or activity that is expected to cause impacts to species listed as threatened or endangered under Schedule 1 of the SARA (2002) or its prescribed habitat on federal lands. On private or provincially-owned lands, only aquatic species and migratory birds under Schedule 1 are protected under SARA.

This development project is to be carried out on private land and is subject to provincial environmental regulations, including the Endangered Species Act (2007).

4 Description of the Environment and Potential Impacts

Overall, the Site has historically been vacant and/or agricultural land. Englobe attended the Site on February 14, 2023. Weather conditions at the time were a mix sun and cloud, with a temperature of approximately -1°C . At the time of Englobe's Site visit, the Site was snow covered, but generally consisted of a flat piece of land. The Site was reportedly farmed for corn from 2012-2020.



Photograph 1. Overview of the Site. Photograph taken by Englobe personnel on February 14, 2023 facing northwest.

The Site is surrounded by the following:

- North: 30 Frank Nighbor Place (agricultural land) and an RV dealership, followed by Highway 417;
- East: Frank Nighbor Place, followed by Movati athletics centre and a commercial/light industrial business park;
- South: Parking lot, followed by a commercial/ light industrial business park; and
- West: Walking path and Carp River Municipal Drain.

Figure 2 in Appendix A presents an aerial overview of the Site and surrounding properties.

4.1 Topography, Hydrology, and Geology

Englobe reviewed available maps to determine Site and surrounding features, such as local geology, topography, hydrogeology and locations of nearby watercourses. The maps reviewed and a description of the noted Site and surrounding property features are described in the table below.

Table 4.1 Summary of maps reviewed.

Map Title	Source	Site and Surrounding Property Features
Natural Heritage Areas	Ministry of Natural Resources and Forestry, 2020	<p>The Site is located at an approximate elevation of 94-95 m above sea level (masl). Local topography slopes westward, towards the Carp River Municipal Drain.</p> <p>The nearest surface waterbody to the Site is the Carp River Municipal Drain, which is approximately 50 m west of the Site.</p> <p>There are no mapped Areas of Natural and Scientific Interest (ANSIs) or wetlands within 250 m of the Site.</p>
OGS Earth Bedrock Geology	Ministry of Northern Development and Mines, 2014a	The bedrock geology in the vicinity of the Site consists of Middle Devonian limestone, dolostone, shale, arkose, and sandstone of the Ottawa Group; Simcoe Group; and Shadow Lake Formation.
OGS Surficial Geology	Ministry of Northern Development and Mines, 2000	The Surficial Geology of the Site is composed of Pleistocene massive to well laminated fine-textured glaciomarine deposits: silt and clay, minor sand and gravel.

A general map of the environment is provided below.

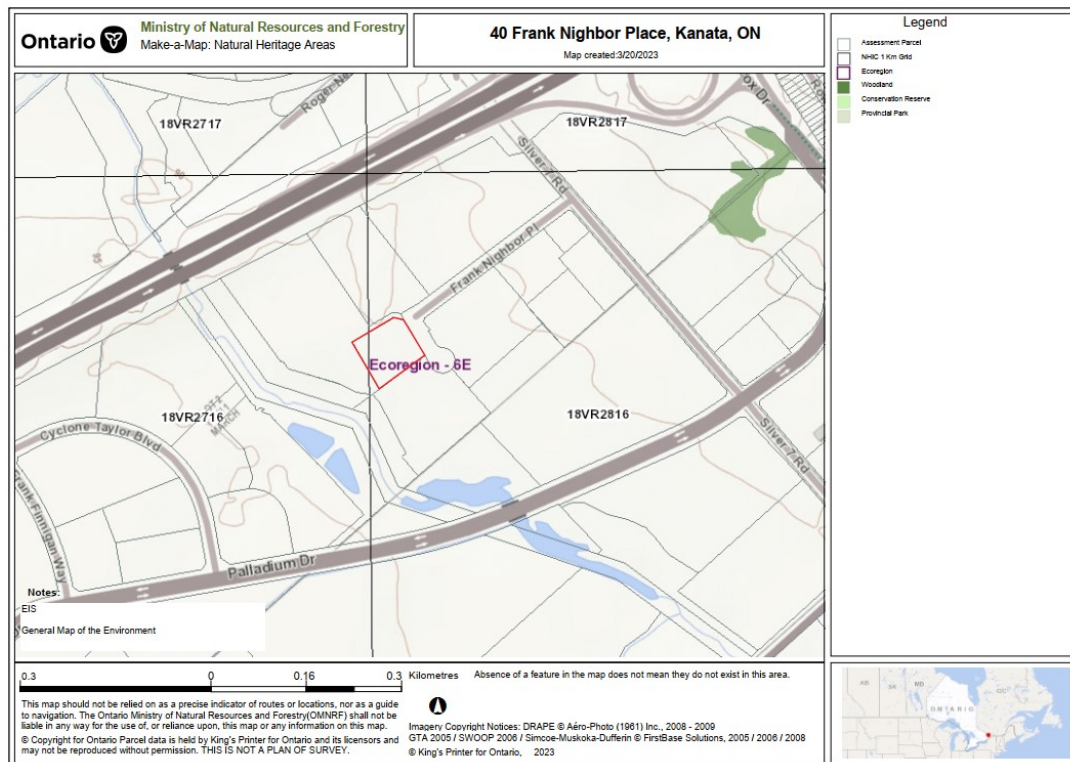


Figure 3. General Map of the Environment - 40 Frank Nighbor Place, Kanata, ON (MNR, 2023).

As per the City of Ottawa Official Plan Schedule C11C - Natural Heritage System (West), the Site exist within an Urban Area (City of Ottawa, 2022), shown in yellow below. To the west of the Site, an Urban Natural Feature Area is present, the Carp River Municipal Drain.

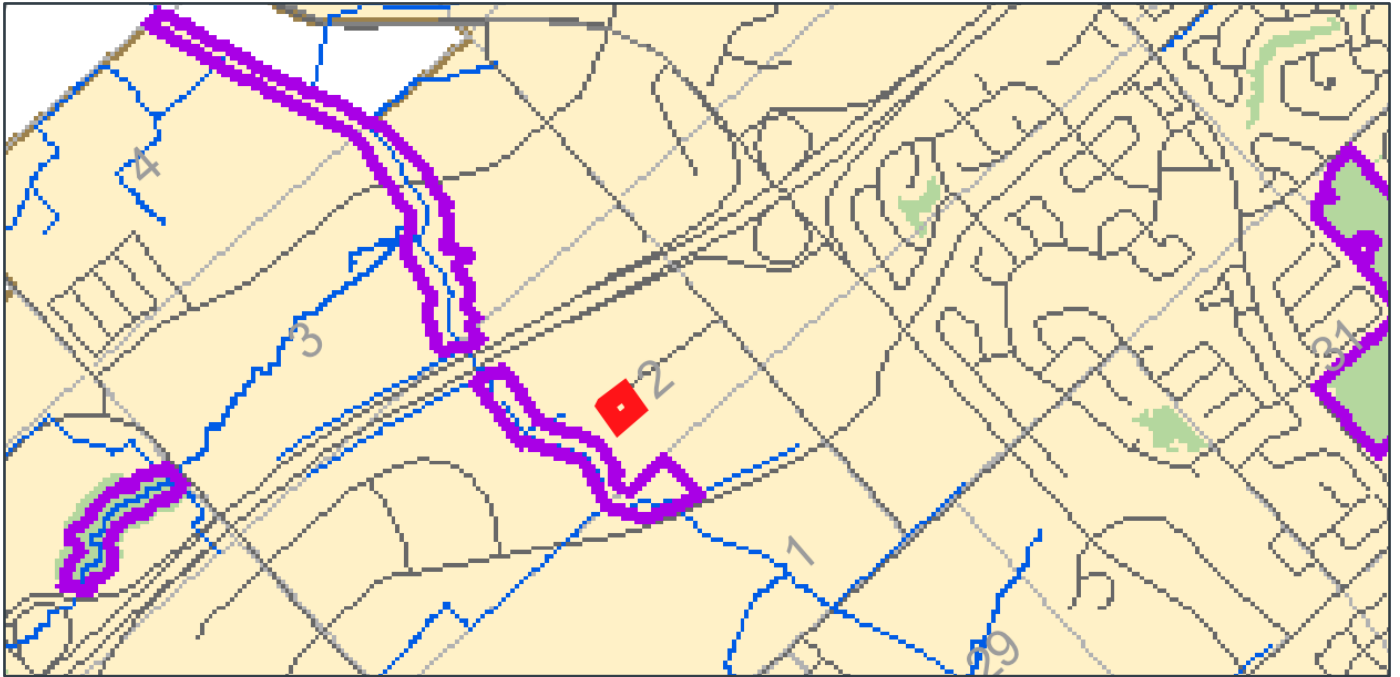


Figure 4. Detailed view of City of Ottawa Official Plan Schedule C11C - Natural Heritage System (West) map showing Urban Areas in yellow, Urban Natural Feature Areas in purple, Watercourses in blue, and the Site in red.

As per the City of Ottawa Official Plan Schedule C15 - Environmental Constraints, unstable slope areas and floodplain areas are mapped to the west of the Site along the Carp River Municipal Drain (City of Ottawa, 2022).

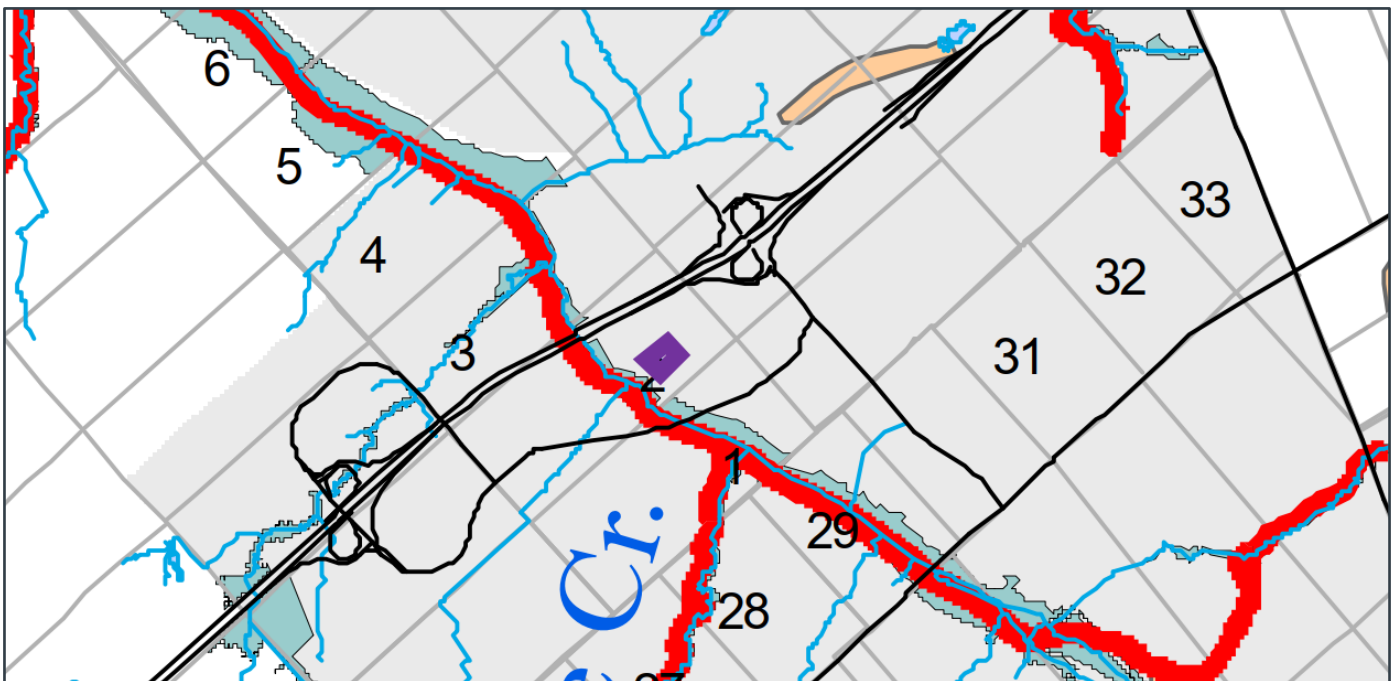


Figure 5. Detailed view of City of Ottawa Official Plan Schedule C15 - Environmental Constraints map showing unstable slope areas in red, floodplain areas in grey/blue, organic soils in orange, and the Site in purple.

4.1.1 Water Bodies and Areas of Natural Significance

The nearest surface waterbody to the Site is the Carp River Municipal Drain, which is approximately 50 m west of the Site. There are no mapped Areas of Natural and Scientific Interest (ANSIs) or wetlands in the vicinity of the Site. The surrounding properties appear to be serviced by municipal water. The Site does not appear to have any water servicing in place at the time of Englobe’s assessment. Based on available City of Ottawa mapping, the Site does not exist within any intake protection zones or wellhead protection areas.



Photograph 2. Overview of the Carp River Municipal Drain located approximately 50 m west of the Site. Photograph taken by Englobe personnel on February 14, 2023 facing south.

4.2 Soil and Groundwater

A search of Ministry of the Environment, Conservation and Parks (MECP) well records yielded one well record within the vicinity of the Site. This well record relates to the installation of monitoring wells at 620 Palladium Drive. The well record noted the underlying stratigraphy as clayey silt (0-0.85 metres below ground surface - mbgs), followed by silty sand (0.85 - 1.52 mbgs), followed by fissured silty clay with sand seams (1.52 - 3.05 mbgs), underlain by silty clay to the depth of the advanced borehole(s) (7.32 mbgs). The static water level was noted at 1.75 mbgs. Depths to bedrock were not reported. No well records were identified for the Site.

Englobe also conducted a Phase I Environmental Site Assessment (ESA) at the Site, which identified one Area of Potential Environmental Concern (APEC), related to historic agricultural use and assumed pesticide application. To investigate the environmental quality of the soil and groundwater at the Site, Englobe conducted a Phase II ESA. Based on findings of the Phase II ESA, all submitted soil and groundwater samples met the applicable MECP Site Condition Standards (SCS) for all analyzed parameters. Therefore, no further investigation was recommended at that time.

4.3 Air, Noise, and Vibration Quality

The Site is situated in a mixed commercial/industrial setting within the community of Kanata and air quality is expected to be relatively good with moderate ambient noise. Construction is anticipated to follow normal best management practices. Given the Site setting and no adjacent residential dwellings, construction induced dust, noise, and vibration is generally expected to be low and in short duration, and within acceptable limits with minimal impacts. Potential exists for exposure to fugitive dust and exhaust during the operation of the construction equipment. Mitigation measures for air quality are included in Section 5.

Englobe conducted a Noise Impact Study for the proposed development which has been provided under a separate cover. The noise impact of the transportation noise sources on the proposed development are expected to meet the City of Ottawa's Environmental Noise Control Guidelines.

4.4 Archaeological Impacts

Based on available archaeological potential mapping on the City of Ottawa's GeoOttawa mapping system, the Site exists within an area marked as having archaeological potential. It is recommended that an archaeological assessment be completed prior to the proposed development.

4.5 Wildlife and Species at Risk

Englobe performed a desktop review of Species at Risk (SAR) potentially occurring on or near the Site. The review examined the distribution of SAR under provincial jurisdiction (ESA 2007) using information available from the following sources:

- The Species at Risk Ontario (SARO) Public Registry (MECP 2023);
- Ontario Natural History Information Centre (NHIC) Database (2023);
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2019);
- Ontario Breeding Bird Atlas (OBBA; Cadman et al. 2007);
- Aquatic Species at Risk Map (Fisheries and Oceans Canada, 2023);
- Species at Risk Ottawa List, Natural Systems Planning, City of Ottawa (CO 2022); and,
- A review of aerial photographs and maps;

Appendix B provides results of the desktop study for SAR and the likelihood of SAR being present on Site, with results summarized below.

4.5.1 Vegetation

Based on a review of historic aerial photography and google street view imaging, the vegetation on Site appears to have been historically managed (i.e., was previously a corn field and mowed grass); however, during Englobe's Site visit, the vegetation was observed to appear less managed and generally consisted of sparse shrub and grass species.

A Tree Conservation Report (TCR) is also being undertaken in addition to the EIS and will be presented under a separate cover. The TCR will list all trees on Site by species, diameter, and health condition, and will address all trees with a critical root zone that extends into the proposed development area. If trees are to be removed, the TCR will show where they are located, and document the reason they cannot be retained. All retained trees will be documented and all retained trees within the area impacted by the development process will be protected as per City of Ottawa guidelines. See mitigation measures in Section 5 for further details.

4.5.2 Fish and Fish Habitat

The nearest surface waterbody to the Site is the Carp River Municipal Drain, which is approximately 50 m west of the Site. **Based on available Mississippi Valley Conservation Authority (MVCA) mapping, the southwest portion of the Site exists within the MVCA Regulation Limits. As such, it is anticipated that a MVCA permit will be required prior to the planned development, pursuant to Ontario Regulation 153/06.**

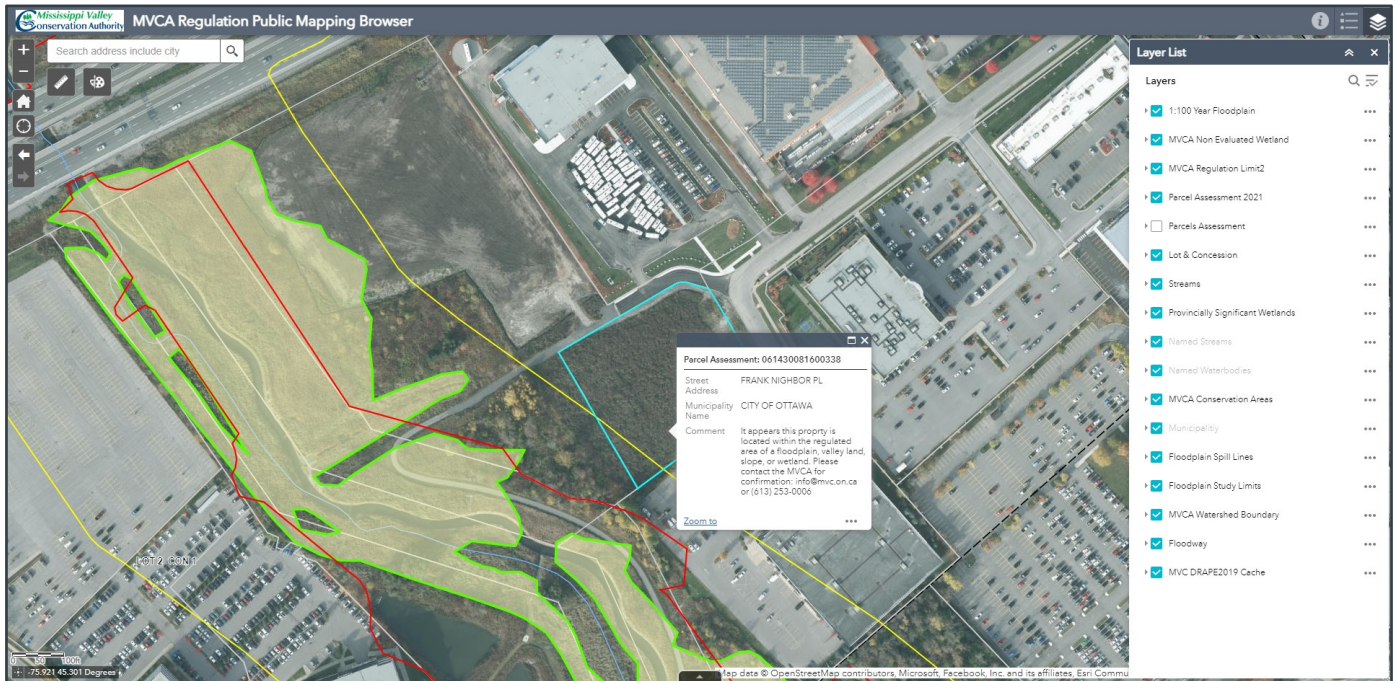


Figure 6. Available MVCP Regulation Mapping showing the Site outlined in blue, the MVCA Regulation Limit outlined in Yellow, the MVCA 1:100 Year Floodplain in red, and MVCA non-evaluated wetland areas in green (MVCA, 2023).

Based on the characteristics of the Carp River Municipal Drain it should be considered as fish habitat. A search of the Department of Fisheries and Oceans (DFO) aquatic SAR database indicated that the Carp River Municipal Drain in the vicinity of the Site is not known to support aquatic SAR or their critical habitat (see Appendix B for results).

Assuming site-specific mitigation measures are implemented for the project, the proposed undertaking is not anticipated to negatively impact fish or fish habitat. Mitigation measures should include, but not limited to, the following:

- During future construction activities, a sediment and erosion control plan should be developed and implemented prior to initiating work and should include the installation of silt fencing along the perimeter of the Site to prevent silt and runoff from entering the Carp River Municipal Drain. Methods for dust suppression (e.g., covering stockpiles of dirt) should also be implemented;
- Future grading and stormwater management plans should consider and minimize surface water runoff into the Carp River Municipal Drain; and,
- During construction and operation of the future development, management of snow removal should consider potential runoff into the Carp River Municipal Drain and should be mitigated accordingly. For example, plowed snow should be stockpiled in an area where it will not runoff into the Carp River Municipal Drain during spring melt, or should be removed from the Site entirely. The use of salt and/or sand on Site during winter months should be managed and minimized as much as possible to prevent salt/sand laden runoff from entering the creek.

See mitigation measures in Section 5 for further details.

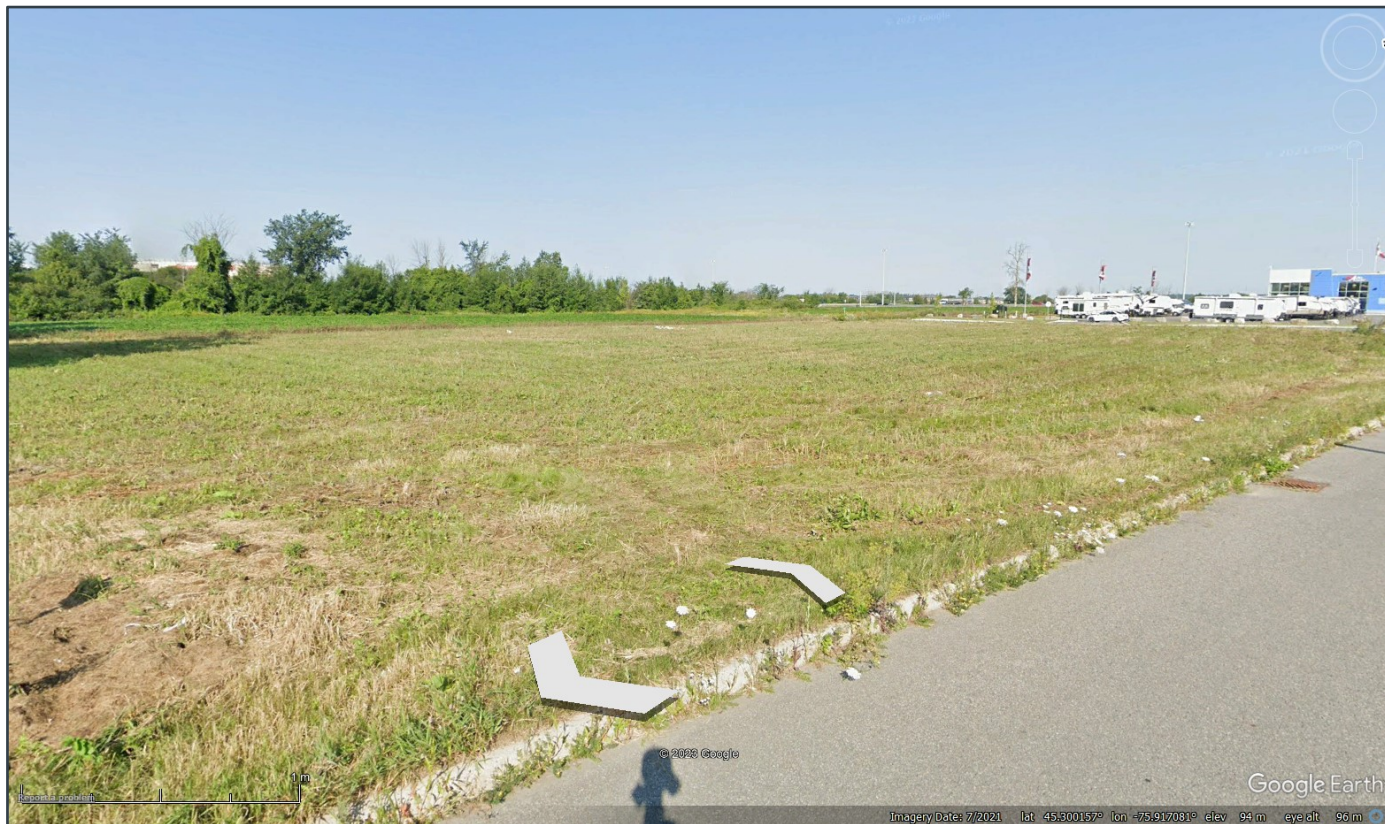
4.5.3 Birds

The review of occurrence data from the Ontario Breeding Bird Atlas within approximately 10km² around the Site (square 18VR21), included eight observations of bird SAR, including Whip-poor-will, Eastern Wood-Pewee, Bank Swallow, Barn Swallow, Wood Thrush, Bobolink, Eastern Meadowlark, and Evening Grosbeak (see Appendix B for results).

The Natural Heritage Information Centre (NHIC) database included observations of three SAR birds, including Bobolink, Eastern Meadowlark, and Wood Thrush within the two 1 km grid squares (18VR2716 and 18BR2816) overlaying the Site (see Appendix B for results).

An Englobe biologist surveyed the Site on February 14, 2023, for SAR habitat potential. Ideal habitat for the Bobolink, Eastern Meadowlark, or Wood Thrush was not observed on Site. Bobolink and Eastern Meadowlark inhabit tall grass fields or hayfields, and this was not observed on Site by Englobe during the Site survey, although it should be noted that Englobe's Site survey was conducted during the winter months. Wood Thrush inhabit large mature deciduous and mixed forests, and this was not observed on Site.

The most-recent publicly available Google Earth street view and aerial photography (in 2021) is provided below.



Photograph 3. Most recent street view photography of the Site, prepared by Google Earth. Photo dated July, 2021 (Google Earth, 2023).



Photograph 4. Most recent publicly available aerial photography of the Site, date June 2021 (Google Earth, 2023).

Migratory bird species that are not considered at risk and that may occur on the Site, are under the protection of federal and provincial legislation, including the Migratory Birds Convention Act (1994) and the Fish and Wildlife Conservation Act of Ontario (1997). Under these acts it is illegal to harm or harass migratory birds, their nests, and eggs. As a result, all vegetation and/or tree clearing activities should occur outside of the breeding bird window from April 15th to August 31st. For due diligence purposes, construction activities are recommended to avoid the core grassland bird breeding period (i.e., May 1 to July 31 of any year). See mitigation measures in Section 5 for further details.

Bird-safe design guidelines should be implemented for the project and incorporated into design plans: https://documents.ottawa.ca/sites/documents/files/birdsafedesign_guidelines_en.pdf. Items include actions to make glass/glazing bird-safe, avoiding design traps (e.g., apparent flythroughs, entrapments, corner glass, etc.), considerations for structural hazards (e.g., larger areas of glass, antennas, grate size, etc.), landscaping that doesn't attract birds to hazards, and lighting design needs to consider bird-safe design.

4.5.4 Mammals

A review of the NHIC database showed that no species of mammals at risk have been documented on or near the Site. During Englobe's Site Visit, the Site was noted to be generally barren without many notable features that would support wildlife (i.e., trees, logs, rocks, burrows, etc.). Overall, the Site does not appear to have ideal habitat for mammals. It should be noted that four species at risk bats have potential to occur in the Ottawa region, including Little Brown Myotis, Northern Myotis, Tri-colored Bat, and Eastern small-footed myotis; however, no suitable habitat (i.e., large diameter snag trees, rock outcrops, buildings, caves, mines, etc.) were noted at the Site.

No other evidence of wildlife or habitat was noted. The anticipated proposed undertaking is not anticipated to negatively impact any mammal SAR.

4.5.5 Reptiles and Amphibians

The review of occurrence data from the Ontario Reptile and Amphibian Atlas within approximately 10km² around the Site (square 18VR21), included five observations of SAR, including Blanding's Turtle, Midland Painted Turtle, Snapping Turtle, Milksnake, and Western Chorus Frog (see Appendix B for results).

The NHIC database indicates that observations of Snapping Turtle, Midland Painted Turtle, and American Eel have occurred within the two 1 km grid squares (18VR2716 and 18BR2816) overlaying the Site (see Appendix B for results). These records are assumed to be in relation to the Carp River Municipal Drain, located approximately 50 m west of the Site.

Impacts to reptiles and amphibians are not anticipated as a result of the proposed development as these species are not anticipated to be found on Site, based on the Site characteristics.

For due diligence purposes, mitigation measures to ensure reptile and amphibian species are not negatively impacted as a result of the proposed development should include, but not limited to, the following:

- Installation of reptile and amphibian exclusion per the MECP best management practices guidelines *Reptile and Amphibian Exclusion Fencing*. Exclusion fencing should be installed prior to the end of the turtle hibernation season which occurs at the time of ice-off (often late March or early April of any year but may be sooner dependant on spring temperatures and actual ice-off timelines) to deter any turtle species which may be travelling from the Carp River Municipal Drain to/from nesting sites in the vicinity of the Site. At this time, it is not anticipate that any suitable turtle nesting habitat exists on Site. If exclusion fencing is installed after this date, turtle/reptile removal and/or relocation activities should take place by a qualified biologist to clear the work zone of any potential individuals in the area after the fencing has been installed. Exclusion fencing should remain installed and functional until October 31 of any year. The MECP best management practices guideline can be found at the following link:

[https://www.ontario.ca/page/reptile-and-amphibian-exclusion-fencing#:~:text=Hardware%20cloth%20\(also%20known%20as,mesh%20may%20be%20more%20effective](https://www.ontario.ca/page/reptile-and-amphibian-exclusion-fencing#:~:text=Hardware%20cloth%20(also%20known%20as,mesh%20may%20be%20more%20effective)

- Prior to vegetation clearing, pre-construction sweeps of any vegetated areas and the work zone should be undertaken to ensure turtle/reptile species are not present. Should any individuals be identified in the work zone, work shall be ceased immediately, and a qualified biologist shall be retained to identify the species of the individual, conduct the appropriate assessment, and determine next steps. The MECP will be consulted as necessary; and,
- Any contractors or equipment operators on Site should be provided with a copy of this EIS prior to proceeding with any work.

See mitigation measures in Section 5 for further details.

5 Mitigation Measure Requirements

Mitigation measures are recommended for the Project. See Table 5 below for established and effective mitigation measures.

Table 5. Identified environmental effects and mitigation measures.

Environmental Component	Description of Environmental Effect	Type of Effect	Mitigation Measures	Residual or Cumulative Effects	Significance of Effect
Regulatory	Regulatory regimes should be followed during all stages of Site preparation, construction activities, cleanup, and mitigation/monitoring measures.	B.P.	<ul style="list-style-type: none"> • All work must be completed in accordance with municipal by-laws and any other application regulation(s); • Based on available MVCA mapping, the Site exists within the MVCA Regulation Limits. As such, it is anticipated that a MVCA permit will be required prior to the planned development, pursuant to Ontario Regulation 153/06. • The Client will obtain all applicable permits from the regulatory authorities as applicable. No permits for wildlife or endangered species are currently required for the project assuming the following mitigation measures are implemented. The regulatory regimes that should be followed include: <ol style="list-style-type: none"> 1) Federal Level <ol style="list-style-type: none"> a. Migratory Bird Convention Act, 1994 b. Transportation of Dangerous Goods Act, 1992 c. Fisheries Act, 1985 2) Provincial Level (as applicable) <ol style="list-style-type: none"> a. Occupational Health and Safety Act, R.S.O. 1990, c. O.1 (OHSA): <ol style="list-style-type: none"> i. Ontario Regulation 213/91, Construction Projects, and R.R.O. 1990, ii. Ontario Regulation 490/09 “Designated Substances”. iii. Guideline: Silica on Construction Projects, September 2004 (Revised April 2011) iv. Ontario Regulation 153/06 MVCA Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses b. Environmental Protection Act, 1990 <ol style="list-style-type: none"> i. Ontario Regulation 347- General - Waste Management ii. Ontario Regulation 406/19 - On-Site and Excess Soil Management c. Endangered Species Act, 2007 d. Fish and Wildlife Conservation Act of Ontario (1997) 	N/A	N/A
Noise and Vibration	Increasing ambient noise level from construction activity can disturb wildlife, adjacent occupants and cause permeant hearing loss/damage to construction	S.E.	<ul style="list-style-type: none"> • The Project should adhere to the Ottawa Noise By-law No. 2017-255 (City of Ottawa 2017), whereby operating vehicles or equipment in connection with the construction of any building, structure, highway, or motorcar after 10 p.m. and before 7 a.m. (9 a.m. on Sunday and statutory/public holidays) are prohibited. 	None	Low

Environmental Component	Description of Environmental Effect	Type of Effect	Mitigation Measures	Residual or Cumulative Effects	Significance of Effect
	workers, or employees who work at the Site who are near the construction work.		<ul style="list-style-type: none"> A Site-specific Health and Safety Plan (HASP) should be prepared and include Personal Protective Equipment (PPE) for hearing protection to prevent injuries to workers/staff. Adhering to the above-mentioned bylaws will also minimize impacts to wildlife. 		
Air Quality	<p>Dust generated from construction activities may adversely affect air quality,</p> <p>Idling excavation equipment may impact air quality.</p>	B.P.	<ul style="list-style-type: none"> A site-specific air pollutant environmental management plan that identifies the objectives to be achieved (e.g. visual inspection, on-site personnel complaints, quantified maximum concentrations around the site), the methods to be applied, the people responsible for managing and implementing the plan, and the records to be maintained to demonstrate adoption of best management practices (and compliance with regulatory requirements) should be developed and implemented. The document <i>Best Practices for the Reduction of Air Emissions from Construction and During Demolition Activities</i> (prepared for Environment and Climate Change Canada by Cheminfo Services, 2005), should be consulted in the development of the plan. Dust levels should be visually monitored and controlled throughout construction works (e.g. by wetting disturbed surfaces, installing covers on excavated soil piles, etc.), as required. Movement of machinery on exposed soil should be minimized. Properly shape and cover transported and/or stockpiled soils with dust suppressing fabric (tarps etc.) to reduce wind erosion and control fugitive dust emissions. If any use of backfill is required, ensure proper scheduling for delivery of backfill materials to minimize storage time on site and reduce potential for fugitive dust emissions. Disturbed areas should be rehabilitated as soon as possible in order to reduce the duration of soil exposure. Vehicles and machinery should not be left idling while not in use. Machinery and equipment must be maintained in good condition and equipped with emission controls, as applicable, and operate within regulatory requirements. 	None	Low
Soil and Groundwater Quality	<p>Should impacted medium be discovered during construction activities, appropriate management activities should be undertaken.</p> <p>Based on the results of the Phase II ESA (Englobe 2023b), it appears that the</p>	B.P.	<ul style="list-style-type: none"> It should be noted that the quality of on-Site soils that may become excess shall be addressed/evaluated prior to or at the time of construction for Site redevelopment in accordance with O. Reg. 406/19 in order to properly characterize and assess handling/disposal/reuse options. If contaminated soil or groundwater is encountered during demolition activities, work will stop immediately, and the Project Manager will be consulted as to how to proceed. Any investigation and/or remedial work undertaken will be completed in general accordance with applicable regulatory 	None	Medium

Environmental Component	Description of Environmental Effect	Type of Effect	Mitigation Measures	Residual or Cumulative Effects	Significance of Effect
	environmental quality of the soil and groundwater at the Site meets the applicable MECP Table 3 Site Condition Standards (SCS).		<p>and industry standards by a qualified environmental consultant (i.e., in accordance with O. Reg. 153/04 and overseen by a Qualified Person).</p> <ul style="list-style-type: none"> The transport of any waste to an approved landfill will be completed in accordance with the federal Transportation of Dangerous Goods Act (TDGA), 1992. The Contractor will be responsible for providing the Client with copies of the Certificate of Authorization for the excavated soil disposal facility and the final transportation manifests. 		
	Accidental spills from construction equipment can contaminate the soil.	B.P.	<ul style="list-style-type: none"> A Spill Prevention and Response Plan should be implemented into project specifications, anticipating all activities which involve hazardous substances, for all phases of this project. Ensuring that the appropriate inspections and certified inspection personnel are employed through all stages of the project is required by provincial regulations, in preventing potential releases to the environment. Spill reporting requirements are set out in applicable provincial regulations. Machinery must be checked for leakage of lubricants or fuel and must be in good working order. Refueling of machinery must be done at least 30 m from any water body and on an impermeable surface. Machinery should not cross or come in close contact with any water bodies. Machinery shall not be washed at the Site. Spill clean-up equipment must be on-site. All spills or leaks must be promptly contained, cleaned up and reported to the Client and through the persons identified in the environmental emergency response plan. Notify the MECP Spill Action Centre (1-800-268-6060) if necessary and applicable. 	None	Low
Archaeological Resources	Potential to destroy archeological resources	S.E.	<ul style="list-style-type: none"> Based on available archaeological potential mapping on the City of Ottawa's GeoOttawa mapping system, the Site exists within an area marked as having archaeological potential. It is recommended that an archaeological assessment be completed prior to the proposed development. If any archaeological resources are discovered during the construction activities, all work at the location concerned must be halted immediately and the project manager must be notified immediately. Work should not be resumed at that location until a qualified archaeologist has been consulted and measures for the protection of those resources have been implemented. 	None	Low

Environmental Component	Description of Environmental Effect	Type of Effect	Mitigation Measures	Residual or Cumulative Effects	Significance of Effect
Water Quality	<p>Carp River Municipal Drain runs approximately 50 m away from the western portion of the Site and may be impacted by the proposed construction. The following should be considered:</p> <p>Temporary deterioration in water quality due to the inflow of fine particles into surface waters from earthwork and concrete work.</p> <p>Changes to drainage conditions caused by the addition of structures and impermeable surfaces to the Site and by a temporary storage of equipment, excavated or infill soil.</p>	B.P.	<ul style="list-style-type: none"> A stormwater management and drainage plan is required for the development and should include considerations for an increase in impermeable surfaces on Site and measures to mitigate increase runoff into the Carp River Municipal Drain. A grading plan is also required and should consider mitigations to prevent increased runoff into Carp River Municipal Drain. Stormwater runoff should be mitigated if equipment or stockpiles of materials are stored on Site since it can lead to poor water quality, increased erosion, and stormwater runoff to the aquatic environment. Considerations for increased runoff or direction of flow over dirt and the creek should be assessed prior to placement of equipment and materials. Construction in proximity to waterbodies can lead to poor water quality, increased erosion, and inflow of soil particles to fish and fish habitat, and Erosion and Sediment Control measures should be implemented. <p><u>Erosion and Sediment Control:</u></p> <ul style="list-style-type: none"> Develop and implement an Erosion and Sediment Control Plan to prevent suspended sediment, mud, debris, fill, rock dust, etc. associated with construction of the project from entering runoff and offsite watercourses and any sensitive habitat during all phases of the project. Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized or settling basin and runoff water is clear. The plan should, where applicable, include at minimum: <ul style="list-style-type: none"> Installation of effective erosion and sediment control measures before starting work, including work zone clearing, grubbing, excavation, filling or grading works to prevent sediment from entering runoff. Ensure they are maintained on a regular basis, prior to and after runoff events. Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site such that sediment is filtered out prior to the water travelling offsite as runoff. For example, pumping/diversion of water to an appropriate vegetated area, construction of a settling basin or other filtration system. Measures for containing and stabilizing waste material (e.g., excavation spoils, construction waste and materials, uprooted or cut plants, accumulated debris) such that increased runoff or contaminated runoff/siltation is not produced. 	None	Medium

Environmental Component	Description of Environmental Effect	Type of Effect	Mitigation Measures	Residual or Cumulative Effects	Significance of Effect
			<ul style="list-style-type: none"> - Regular inspection and maintenance of erosion and sediment control measures and structures during the course of construction. Repairs to erosion and sediment control measures and structures if damage occurs. Monitoring should occur prior to and during or immediately after significant rain events (10 mm over 24 hours). - Any accumulated materials should be cleaned out regularly to maintain performance, and prior to removal of mitigation measures. - A landscaping plan should be developed for the project. All disturbed areas of land to be restored to natural conditions should be re-vegetated as soon as conditions allow in order to prevent erosion (and restore habitat functions). - Mitigation measures should not be removed until vegetation has been re-established to a sufficient degree (or surface soils stabilized using other measures) so as to provide adequate erosion protection to disturbed work areas. - Removal of non-biodegradable erosion and sediment control materials once site is stabilized. - Ensure that measures are in place to minimize mud tracking by construction vehicles, and to allow timely cleanup of any tracked mud, dirt, and debris along access routes and areas outside of the immediate work area where the above sediment controls would not be in place. 		
	Machinery operated improperly	B.P.	<ul style="list-style-type: none"> • Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks. • Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering waterways. 	None	Low
	Accidental spills from construction equipment may impact water quality of storm water runoff and via infiltration into the groundwater.	B.P.	<ul style="list-style-type: none"> • Implement a Spill Prevention and Spill Response Plan for the construction activities (see above). Ensure that appropriate inspection personnel and certified inspection personnel are employed through all stages of the project life cycle. A specific environmental emergency response plan will be developed to mitigate any spills associated with construction activities. • Do not refuel vehicles or machinery within 30 m of a watercourse or wetland. • Staging material and equipment at least 30 m away from any watercourse or wetland. 	None	Low

Environmental Component	Description of Environmental Effect	Type of Effect	Mitigation Measures	Residual or Cumulative Effects	Significance of Effect
Vegetation and Trees	Accidental damage to trees and vegetation can lead to decreased wildlife habitat, increased sediment erosion, and increased stormwater runoff.	B.P.	<ul style="list-style-type: none"> • Work areas shall be defined prior to project commencement. Restrict the movement of vehicles and machinery to the work areas and designated access points. Utilize existing access roads when possible. • Do not attach any signs, notices or posters to any tree. • If work is to be conducted or equipment is to be placed within proximity to trees, tree retention mitigation measures should be followed: <ul style="list-style-type: none"> - Erect a fence at the critical root zone (CRZ) of potentially affected trees; - Area where the trees will be potentially affected will be fenced.; - Do not place any material or equipment within the CRZ of trees; - Do not damage the root system, trunk, or branches of trees; and, - Ensure that exhaust fumes from all equipment are not directed towards any tree's canopy. - If tree damage occurs, an arborist should review any damage to determine the best course of action to restore the original vegetative functions. - Vegetation should be replaced to original conditions following construction activities. - As part of the proposed development, a Tree Conservation Report (TCR) is required. 	None	Low
Terrestrial Habitat	Accidental spills associated with construction activities may have adverse impacts to vegetation and wildlife.	B.P.	<ul style="list-style-type: none"> • Implement a Spill Prevention and Spill Response Plan for the construction activities, as described above. 	None	Low
	Introduction of Invasive Species from equipment	B.P.	<ul style="list-style-type: none"> • Introduced invasive species at the site of vegetation cutting activities should be cut manually. Cutting, temporary storage, and disposal should be performed in a manner to prevent the dispersal of seeds and samara into the environment. • Invasive species on Site should be removed and disposed off appropriately according to provincial guidelines: https://www.invasivespeciescentre.ca/learn/invasive-plant-species • Cleaning of any equipment used to remove the invasive species should occur in a designated area prior to the equipment leaving the site. • The equipment should arrive clean to the site. • Storage of vegetative debris containing invasive species should occur in a designated area, ensuring that the debris is 	None	Low

Environmental Component	Description of Environmental Effect	Type of Effect	Mitigation Measures	Residual or Cumulative Effects	Significance of Effect
			covered and that vehicle transporting debris off site are tarped.		
	Reduction to bird breeding and nesting habitat. Bird collisions on Site.	B.P.	<ul style="list-style-type: none"> No migratory birds, nests or eggs can be disturbed or destroyed per the Migratory Birds Convention Act of 1994. In order to mitigate possible effects of the project on the various species potentially at the Site, clearing of vegetation should take place outside the bird breeding window of April 15th to August 31st. If vegetation clearing must occur during the breeding bird window, a qualified avian biologist should be contacted to conduct a nesting survey within 48hrs of clearing activities. The workers must be advised of the potential presence of migratory birds during the works and reinstatement of the site. For due diligence purposes, construction activities are recommended to avoid the core grassland bird breeding period (i.e., May 1 to July 31 of any year) if possible. If one or more nests containing eggs or chicks of migratory birds are spotted or discovered during the work, stop any disruptive activity in the nesting area until the establishment of a buffer zone by an experienced Avian Biologist. This is based on a range of appropriate protection to the species and circumstances and must be maintained until the chicks have naturally left permanently the areas near the nest or that the work is completed. Bird-safe design guidelines should be implemented for the project and incorporated into design plans: https://documents.ottawa.ca/sites/documents/files/birdsafesign_guidelines_en.pdf Items to be included include actions to make glass/glazing bird-safe, avoiding design traps (e.g., apparent flythroughs, entrapments, corner glass, etc.), consider structural hazards (e.g., larger areas of glass, antennas, grate size, etc.), landscaping that doesn't attract birds to hazards, and lighting design needs to considers bird-safe design. 	None	Low
Mammals/ Wildlife	Construction work may disturb wildlife during construction.	B.P.	<ul style="list-style-type: none"> Considering the contained footprint of the proposed development, minimal impacts to wildlife are anticipated. Wildlife sweeps should be conducted daily by the contractor prior to work commencing to ensure no wildlife is present and potentially impacted by construction activities. Should wildlife 	None	Low

Environmental Component	Description of Environmental Effect	Type of Effect	Mitigation Measures	Residual or Cumulative Effects	Significance of Effect
			<p>be discovered they should be gently coaxed out of the work area or qualified professional contacted on how to proceed.</p> <ul style="list-style-type: none"> • Installation of the fencing around the proposed development will help prevent wildlife, such as turtles, from entering the Site, if present. • For due diligence it is recommended that clearing of any trees take place outside of the bat season of April 1st to October 31st. If vegetation clearing or demolition activities must take place during the active breeding bird season, breeding bird surveys and/or nesting surveys shall be conducted by a qualified biologist immediately prior to vegetation clearing and demolition activities. • Should any active nests be identified in the work zone, work shall be ceased immediately, and a qualified biologist shall be retained to identify the species of the individual, conduct the appropriate assessment, and determine next steps. The MECP will be consulted as necessary. • No Species at Risk are anticipated to present on Site or impacted by the project. However, should a SAR be discovered during construction, work should cease immediately, and a qualified biologist contacted and the MECP consulted on how to proceed. <p><u>Best Practice Measures (BPMs) include:</u></p> <ul style="list-style-type: none"> • Development of a project-specific wildlife protocol that informs workers how to proceed should they encounter wildlife and its safe removal. • Working around sensitive timing windows, including the avoidance of tree clearing (if required) during the bird-breeding season. • Pre-stressing the Site to clear wildlife (i.e. flushing out wildlife in an organized manner). • BPMs for site clearing (i.e. clearing from one direction that allows wildlife to leave the Site). • Wildlife-proofing. • Conduct construction activities in accordance with the City of Ottawa Protocol for Wildlife Protection during Construction (available at: https://documents.ottawa.ca/sites/documents/files/documents/construction_en.pdf). 		
Fish and Fish Habitat	Construction near water may impact fish and fish habitat.	B.P.	<ul style="list-style-type: none"> • Considering the contained footprint of the proposed development, minimal impacts to wildlife are anticipated. 	None	Low

Environmental Component	Description of Environmental Effect	Type of Effect	Mitigation Measures	Residual or Cumulative Effects	Significance of Effect
			<ul style="list-style-type: none"> • To minimize any potential impacts to riparian vegetation and prevent impacts to fish and fish habitat, the following should be implemented: <ul style="list-style-type: none"> - During future construction activities, a sediment and erosion control plan should be developed and implemented prior to initiating work and should include the installation of silt fencing along the perimeter of the Site to prevent silt and runoff from entering the Drain. Methods for dust suppression (e.g., covering stockpiles of dirt) should also be implemented. - Future grading and stormwater management plans should consider and minimize surface water runoff into the Carp River Municipal Drain. - During construction and operation of the future development, management of snow removal should consider potential runoff into the creek and should be mitigated accordingly. For example, plowed snow should be stockpiled in an area where it will not runoff into the creek during spring melt, or should be removed from the Site entirely. The use of salt and/or sand on Site during winter months should be managed and minimized as much as possible to prevent salt/sand laden runoff from entering the Carp River Municipal Drain. 		
Reptiles and Amphibians	Reptile and Amphibians, especially turtles, may be present in Poole Creek and enter the work zone during construction and be injured.	B.P.	<ul style="list-style-type: none"> • Installation of reptile and amphibian exclusion per the MECP best management practices guidelines <i>Reptile and Amphibian Exclusion Fencing</i>. Exclusion fencing should be installed prior to the end of the turtle hibernation season which occurs at the time of ice-off (often late March or early April of any year but may be sooner dependant on spring temperatures and actual ice-off timelines). If exclusion fencing is installed after this date, turtle/reptile removal and/or relocation activities should take place by a qualified biologist to clear the work zone of any potential individuals in the area after the fencing has been installed. Exclusion fencing should remain installed and functional until October 31 of any year. The MECP best management practices guideline can be found at the following link: https://www.ontario.ca/page/reptile-and-amphibian-exclusion-fencing#:~:text=Hardware%20cloth%20(also%20known%20as, mesh%20may%20be%20more%20effective • Prior to vegetation clearing, pre-construction sweeps of any vegetated areas and the work zone should be undertaken to ensure turtle/reptile species are not present. Should any individuals be identified in the work zone, work shall be 	None	Medium

Environmental Component	Description of Environmental Effect	Type of Effect	Mitigation Measures	Residual or Cumulative Effects	Significance of Effect
			<p>ceased immediately, and a qualified biologist shall be retained to identify the species of the individual, conduct the appropriate assessment, and determine next steps. The MECP will be consulted as necessary; and,</p> <ul style="list-style-type: none"> Any contractors or equipment operators on Site should be provided with a copy of this EIS prior to proceeding with any work. 		
Waste Management	<p>Inappropriate handling and disposal of designated substances or hazardous building materials can pollute the environment.</p> <p>Improper waste management causes the depletion of environmental quality.</p>	B.P.	<ul style="list-style-type: none"> Recycle and reuse materials onsite as possible. Divert metal materials from landfill to metal recycling facility. All unsalvageable and unrecyclable materials must be disposed of at a licensed facility in accordance with federal standards. All hazardous materials must be labelled in accordance with WHMIS requirements and transported in accordance with federal regulations regarding the transportation of dangerous goods such as the Federal <i>Transportation of Dangerous Goods Act</i> and Regulation. Hazardous waste not being reused or recycled and used containers of hazardous materials must be disposed of or recycled at an authorized facility or disposal site. Contractor to ensure the separating of material waste, reuse and recycling for maximum amount of material recovery. 	None	Low
Human Health	Impacts to workers arising from onsite injuries or mismanagement of designated substances arising from project activities	S.E.	<ul style="list-style-type: none"> A 'Site specific Health and Safety Plan' will be prepared by the Contractor. Instructions and contact numbers 'In Case of Emergencies' are provided to the Contractor. It includes the directions and the closest hospital emergency. Workers will use the protective devices required by the applicable regulations. Speed limits shall be respected and the speed of vehicles on the work site shall be limited. Contractor shall take all reasonable steps to ensure that working site does not adversely affect the safety and security of the public and/or the workers. Existing access roads shall be used to access the site in approved designated routing in coordination with separate projects and base activities. Contractor will install temporary warning signage and access restrictions in order to prevent access by base personnel. Prior to commencement of the work, the location and condition of underground utility lines will be established and confirmed, and care shall be taken not to expose and/or come in contact with underground utilities, if applicable. 	None	Low

Environmental Component	Description of Environmental Effect	Type of Effect	Mitigation Measures	Residual or Cumulative Effects	Significance of Effect
			<ul style="list-style-type: none"> • Heavy machinery must have a backup alarm. When not in use, turn off all motorized equipment used at the sites. • Handle all designated substances and hazardous building materials in accordance with provincial and federal standards for worker safety. • All hazardous materials must be labelled in accordance with WHMIS requirements and transported in accordance with provincial and federal regulations regarding the transportation of dangerous goods such as the Federal Transportation of Dangerous Goods Act and Regulation. • Ensure employees are trained on the identification and handling of designated substances. Undertake work on designated substances containing material and other hazardous materials and chemicals according to the Designated Substance and Hazardous Material Survey information and recommendations or the provincial and federal legislation. 		

¹ B.P. = Biophysical Effect

² S.E. = Socio-economic Effect

6 Additional Comments

6.1 Cumulative and Residual Effects

The proposed development of the Site is restricted in the Site boundaries as shown in Appendix 1 with an approximate distance of 50 m between the westernmost Site boundary and the Carp River Municipal Drain, thus, no negative effects are expected to occur to Carp River Municipal Drain, assuming the above noted mitigation measures are implemented. No SAR have previously been reported on Site. Assuming the mitigation measures outlined in this analysis, significant residual and cumulative effects are not anticipated.

6.2 Project Monitoring

Project monitoring is recommended during and at the end of the project to ensure that the mitigation measures are implemented and effective. Adaptive management should be ongoing throughout the life of the project and all issues analyzed as they present themselves, with additional mitigation measures implemented as required. Based on available MVCA mapping, the Site exists within the MVCA Regulation Limits. As such, it is anticipated that a MVCA permit will be required prior to the planned development, pursuant to Ontario Regulation 153/06. The MVCA may impose additional project monitoring needs and/or studies in support of the permitting application.

The construction supervisor and the project manager are responsible for verifying if the mitigation measures have been implemented by the contractor responsible for the works.

The contractor will be responsible for ensuring the implementation and the effectiveness of the mitigation measures identified in the specifications in Section 5 and any other mitigation measures and conditions identified throughout the duration of the project. The construction supervisor should have all administrative documents, including the EIS.

7 Determination

Taking into account implementation of mitigation measures outlined in the analysis, this project is:

Not likely to cause significant adverse environmental effects

Likely to cause significant adverse environmental effects

8 Closure

This report was prepared for the exclusive use of API Consultants Inc. and 401 Real Estate Trust Inc. Any use of this report by any third party, or any reliance on or decisions to be made based on it, are the responsibility of such parties. Englobe accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

We trust the information herein meets your present requirements. Should you have any questions, please do not hesitate to contact us.

Completed by:

Englobe Corp.



Colette Robitaille
Project Manager



David Vardy, Ph.D., P.Bio.
Senior Biologist and Project Manager

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10 Statement of Limitations

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This Report should be considered in its entirety; selecting specific portions of the Report may result in the misinterpretation of the content.

The work performed by the Company was carried out in accordance with the terms and conditions specified in the Professional Services Agreement between the Company and the Client, in accordance with currently accepted engineering standards and practices and in a manner consistent with the level of skill, care and competence ordinarily exercised by members of the same profession currently practicing under similar conditions and like circumstances in the same jurisdiction in which the services were provided. Standards, guidelines, and practices may change over time; those which were applied to produce this Report may be obsolete or unacceptable at a later date.

The findings, recommendations, suggestions, or opinions expressed in this Report reflect the Company’s best professional judgement based on observations and/or information reasonably available at the time the work was performed, as appropriate for the scope, work schedule and budgetary constraints established by the Client. No other warranty or representation, expressed or implied, is included in this Report including, but not limited to, that the Report deals with all issues potentially applicable to the site and/or that the Report deals with any and all of the important features of the Site, except as expressly provided in the scope of work.

This report has been prepared for the specific site, development, building, design or building assessment objectives and/or purposes that were described to the Company by the Client. The applicability and reliability of the content of this Report, subject to the limitations provided herein, are only valid to the extent that there has been no material alteration or variation thereto, and the Company expressly disclaims any obligation to update the Report. However, the Company reserves the right to amend or supplement this Report based on additional information, documentation or evidence made available to it.

The Company makes no representation concerning the legal significance of its findings, nor as to the present or future value of the property, or its fitness for a particular purpose and hereby disclaims any responsibility or liability for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

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This Statement of Limitations forms an integral part of the Report.

In preparing this Report, the Company has relied in good faith on information provided by others and has assumed that such information is factual, accurate, and complete. The Company accepts no responsibility or liability for any deficiency, misstatement, or inaccuracy in this Report resulting from the information provided, concealed, or not fully disclosed by those individuals.

Unless otherwise noted, the information contained herein in no way reflects on environmental aspects of either the site or the subsurface conditions.

The assessment should not be considered a comprehensive audit that covers and eliminates all present, past and future risks. The information presented in this Report is based on data collected during the completion of the monitoring conducted. The overall site/building/subsurface/groundwater conditions were extrapolated based on information collected at specific sampling locations. Professional judgement was exercised in gathering and analyzing data; however, no monitoring method can completely eliminate the possibility of obtaining partially imprecise or incomplete information; it can only reduce the possibility to an acceptable level. Consequently, the actual site/building/subsurface/groundwater conditions between the sampling points may vary. In addition, analysis has been carried out only for the chemical and physical parameters identified, and it should not be inferred that other chemical species or physical conditions are not present.

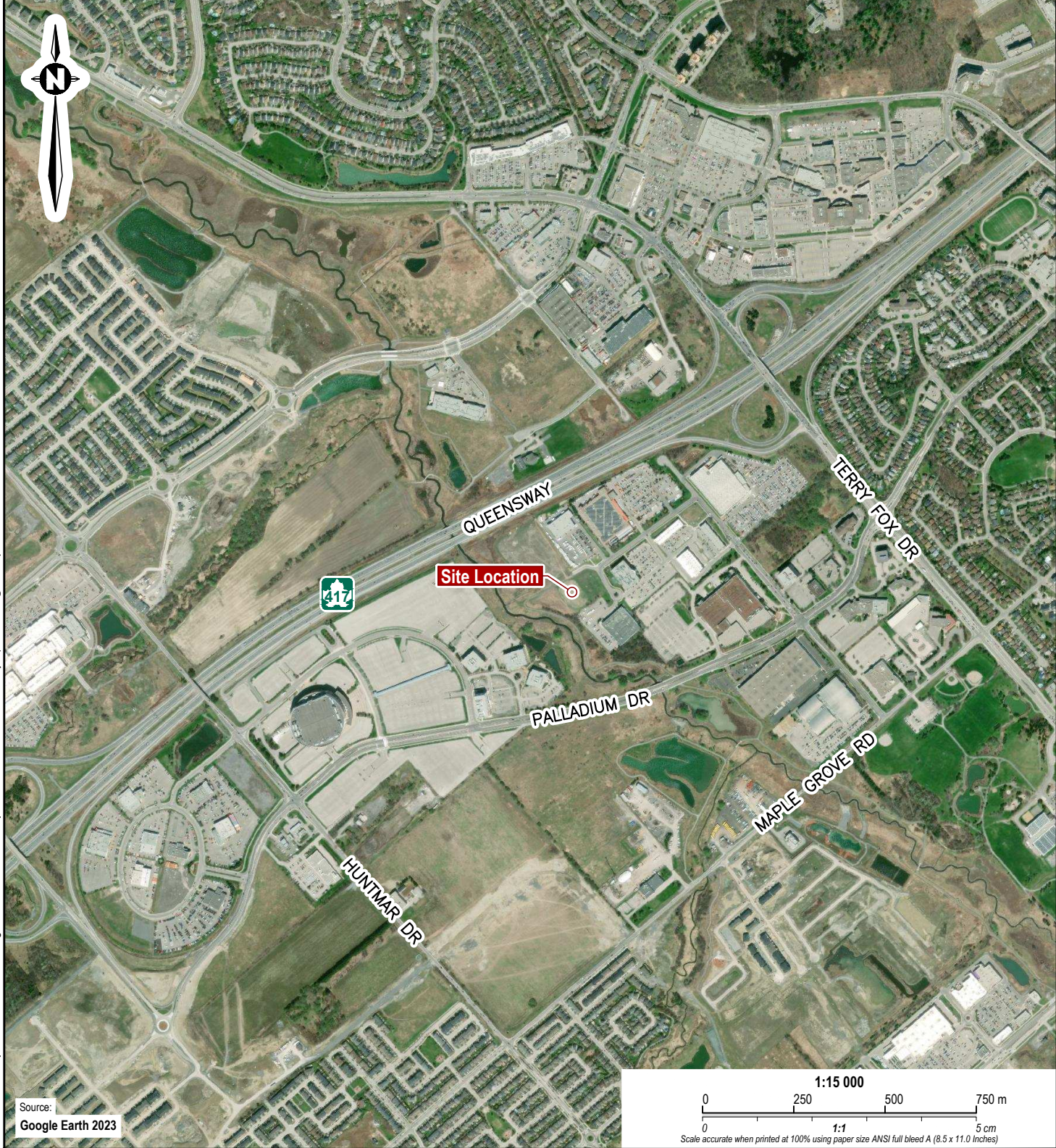
Any description of the site and its physical setting documented in this Report is presented for informational purposes only, to provide the reader a better understanding of the site and scope of work. Any topographic benchmarks and elevations are primarily to establish relative elevation differences between sampling locations and should not be used for other purposes such as grading, excavation, planning, development, or similar purposes.

This Report is based on the assumption that the design features relevant to our work will be in accordance with applicable codes, standards and guidelines of practice and constructed substantially in accordance with the Report. If there are any changes to the site development features, or there is any additional information that was not otherwise available at the time the work was performed, the Company should be retained to review the implications thereof to the contents of this Report. The design recommendations expressed in this Report are applicable only to the project described therein.

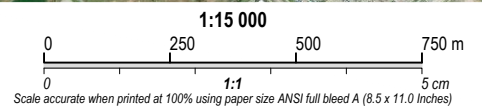
Appendix A

Figures





Source:
Google Earth 2023



Note

1. This drawing shall be read in conjunction with the associated technical report.

0	2023/04/21	Final	DV
Revision	Date	Issue	Approval

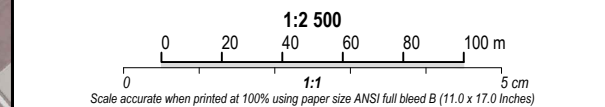
Client		Site	
API Consultants Inc.		40 Frank Nighbor Place, Ottawa, ON	
	Report Title	Designed By	Date
	Environmental Impact Statement		CR
	Drawing Title	Drawn By	Project No.
	Site Location Map		JM
		Approved By	Figure No.
		DV	1
		Scale	
		As Shown	

Drawing: 1 Site Location.dwg Folder: D:\Joven One Drive\OneDrive - Englobe Corp\Work\02211293 - Frank Nighbor P\Environmental Impact Statement\DWGs Friday, April 21, 2023 @ 08:57 by Joven Mendoza



Note
 1. This drawing shall be read in conjunction with the associated technical report.

Legend
 ———— Approximate Site Boundary
 - - - - - MVCA Regulation Limit



0	2023/04/21	Final	DV
Revision	Date	Issue	Approval

Client
API Consultants Inc.

Site
40 Frank Nighbor Place, Ottawa, ON

Report Title
Environmental Impact Statement

Drawing Title
Study Area and Surrounding Land Uses

Designed By	CR	Scale	As Shown
Drawn By	JM	Date	April 2023
Approved By	DV	Project No.	02211293.000

Figure No. **2**

Drawing: 2 Site Plan.dwg
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 Friday, April 21, 2023 @ 08:57 by Joven Mendoza

Source:
 Google Earth 2023

Appendix B

Species at Risk Assessment



eNGLOBE

Table B1. Species at Risk Desktop Assessment Results

Species Name	Status under federal Species at Risk Act, 2002	Status under COSEWIC	Status under Ontario Endangered Species Act, 2007	Distribution in National Capital Region	Habitat Comments	Potential to be Present on Site
Birds						
Bald Eagle <i>Haliaeetus leucocephalus</i>	None (not at risk nationally)	Not at Risk	Special Concern (Sept. 2009). Government response issued June 2015.	Confirmed nest at Shirley's Bay since 2012. No known occurrences on Site or surrounding area (NHIC).	Bald eagles are most often reported during spring and fall migration. Nest in mature forests near open water. Individuals and nests protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	No suitable habitat is present on Site. Low Probability.
Bank Swallow <i>Hirundo fulva</i>	Threatened (Schedule 1) as of Nov. 2, 2017.	Threatened	Threatened (June 2014). Government response issued April 2017; habitat regulations deferred as of June 2017.	12 confirmed, 2 probable and 8 possible nests in recent OBBA of Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Colonial nester; burrows in eroding silt or sand banks, sand pit walls, etc. Individuals and nests also protected under federal <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Barn Swallow <i>Hirundo rustica</i>	Threatened (Schedule 1) as of Nov. 2, 2017.	Special Concern	Threatened (Jan 2012). Recovery strategy issued Aug. 2014; government response May 2015.	33 confirmed, 2 probable and 3 possible nests during recent OBBA of Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Nests on barns and other structures; forages in open areas for flying insects. Individuals and nests also protected under <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Black Tern <i>Chlidonias niger</i>	None (not at risk nationally)	Not at Risk	Special Concern	Four confirmed nests in recent OBBA of Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Black Terns build floating nests in loose colonies in shallow marshes, especially in cattails. Individuals and nests protected under federal <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Boblink <i>Colaptes auratus</i>	Threatened (Schedule 1) as of Nov. 2, 2017.	Threatened	Threatened (Sept. 2010). Recovery strategy issued June 2013; draft government response Sept. 2015.	Widespread; confirmed or probable nests found in 39 out of 40 local atlas squares during recent OBBA of Ottawa area. No known occurrences on Site but occurrences known within the surrounding area (NHIC).	Declining grassland species in North America (McCracken, 2005). COSSARO identifies mortality due to early haying and loss of habitat as major threats. Individuals and nests protected under federal <i>Migratory Birds Convention Act</i> . Utilizes large grassland habitats for breeding.	Known occurrences within the surrounding area although ideal habitat not present on Site. Moderate Probability.
Canada Warbler <i>Paruline du Canada (Cardellina canadensis)</i>	Threatened (Schedule 1) as of March 17, 2010. Final recovery strategy Mar. 2016.	Special Concern	Special Concern (Sept. 2009)	One confirmed nest, two probable and six possible reported in recent OBBA of Ottawa area. No critical habitat identified. No known occurrences on Site or surrounding area (NHIC).	Prefers wet forests with dense shrub layers. Individuals and nests protected under federal SARA and <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Cerulean Warbler <i>Paruline azuree (Setophaga cerulea)</i>	Endangered (Schedule 1) as of March 17, 2010. (previously special concern.)	Endangered	Threatened (June 2011). Recovery strategy and habitat restrictions deferred.	No nests reported during recent OBBA of Ottawa area. No known occurrences on Site or surrounding area (NHIC).	SARA and SARA range maps both include parts of Ottawa. Prefers mature, deciduous forests with large, tall trees and an open understorey. Individuals and nests protected under federal <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Chimney Swift <i>Martinet ramoneur (Chaetura pelagica)</i>	Threatened (Schedule 1). Draft recovery strategy Mar. 2015.	Threatened	Threatened (Sept. 2009). Habitat regulation deferred until 1 year after adoption of federal recovery strategy.	Confirmed nests in 3 squares, 2 probable and 11 possible reported in recent OBBA of Ottawa area. No critical habitat identified. No known occurrences on Site or surrounding area (NHIC).	Nests in traditional-style open brick chimneys (and rarely in hollow trees). Individuals and nests also protected under federal SARA and <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Common Nighthawk <i>Engoulevent d'Amérique (Chordeiles minor)</i>	Threatened (Schedule 1) as of March 17, 2010. In consultation for downlisting to Special Concern based on COSEWIC (Apr. 2018).	Special Concern	Special Concern (Sept. 2009)	Six probable and five possible nests reported in recent OBBA of Ottawa area. No critical habitat identified. No known occurrences on Site or surrounding area (NHIC).	Nests in wide variety of open sites, including beaches, fields and gravel rooftops. Requires large wooded areas with open patches, and/or open woodlands or alvar, or gravel rooftops. Individuals and nests protected under federal SARA and <i>Migratory Birds Convention Act</i> .	Suitable habitat may be present on Site although no nearby recent observations (NHIC). Low Probability.
Eastern Meadowlark <i>Sturnella magna</i>	Threatened (Schedule 1) as of Nov. 2, 2017.	Threatened	Threatened (Jan. 2012). Recovery strategy issued June 2013; draft government response Sept. 2015. Habitat regulations deferred.	22 confirmed, 11 probable and 3 possible nests during recent OBBA of Ottawa area. No known occurrences on Site but occurrences known within the surrounding area (NHIC).	Declining grassland species in North America (McCracken, 2005). Breed primarily in moderately tall grasslands, such as pastures and hayfields, but are also found in alfalfa fields, weedy borders of croplands, roadsides, orchards, airports, stubble overgrown fields, or other open areas. Individuals and nests protected under federal <i>Migratory Birds Convention Act</i> .	Known occurrences within the surrounding area although ideal habitat not present on Site. Moderate Probability.
Eastern Whip-poor-will <i>Engoulevent bois-pourri (Antrostomus vociferans)</i>	Threatened (Schedule 1) as of February 2011. Draft recovery strategy issued Mar. 2015.	Threatened	Threatened (Sept. 2009). Habitat regulation deferred until 1 year after adoption of federal recovery strategy.	Seven squares with probable nests and 10 with possible nests reported in recent OBBA of Ottawa area. Critical habitat tentatively identified in 4 squares in western Ottawa. No known occurrences on Site or surrounding area (NHIC).	Nests on the ground in open deciduous or mixed woodlands with little understorey. Individuals and nests also protected under federal SARA and <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Eastern Wood-pewee <i>Pou de Fiel (Contopus virens)</i>	Special Concern (Schedule 1) as of Nov. 2, 2017.	Special Concern	Special Concern (June 2014)	4 possible, 15 probable and 18 confirmed nests in recent OBBA of Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Woodland species, often found in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It is most abundant in intermediate-age mature forest stands with little understorey vegetation. Individuals and nests protected under federal <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Evening Grosbeak <i>Coccothraustes vespertina</i>	Special Concern (Schedule 1) as of May 2015.	Special Concern	Special Concern (as of August 2018)	Five confirmed nests, six probable and eight possible during recent OBBA (mostly in west) of Ottawa area. No known occurrences on Site or surrounding area.	Nest in trees or large shrubs; prefer mature coniferous forests but will also use deciduous forests, parklands and orchards. Generally found in open, mature mixed-wood forests dominated by fir species. White Spruce and/or Trembling Aspen. Overwinter in Ottawa. Individuals and nests protected under <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Golden Eagle <i>Aquila chrysaetos</i>	None (not at risk nationally)	Not at Risk	Endangered – previously regulated under old ESA. Recovery strategy issued Mar. 2015; Government response Mar. 2016.	Migrant only; no reported nests. Golden Eagles nest in remote, undisturbed areas, usually building their nests on ledges on a steep cliff or overbank, but they will also use large trees if needed. During migration they are most frequently seen migrating west along the shores of Lake Ontario and Erie in November. No known occurrences on Site or surrounding area (NHIC).	Golden eagles are rarely reported even during migration, but are most often seen in the fall. Individuals and nests also protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	No suitable habitat is present on Site. Low Probability.
Golden-winged Warbler <i>Paruline à ailes dorées (Vermivora chrysoptera)</i>	Threatened (Schedule 1). Recovery strategy issued Aug. 2016	Threatened	Special Concern	One confirmed nest, one probable nest reported during recent OBBA of Ottawa. Critical habitat identified in Quebec (adjacent to northwestern Ottawa). No known occurrences on Site or surrounding area (NHIC).	Ground-nesting edge species. Prefer to nest in areas with young shrubs surrounded by mature forest – locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas. Individuals and nests protected under federal SARA and <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Grasshopper Sparrow <i>Bruant sauterelle (Ammodramus savaannarum)</i>	Special Concern (Schedule 1) as of Nov. 2, 2017.	Special Concern	Special Concern (March 2015)	4 confirmed, 5 probable and 2 possible nests in recent OBBA of Ottawa. No known occurrences on Site or surrounding area (NHIC).	Area-sensitive grassland species; nests on ground. Individuals and nests protected under federal <i>Migratory Birds Convention Act</i> .	No ideal habitat is present on Site. Low Probability.
Henslow's Sparrow <i>Bruant de Henslow (Ammodramus henslowii)</i>	Endangered (Schedule 1); reconfirmed in May 2011. Recovery strategy issued in 2010.	Endangered	Endangered – previously regulated under old ESA. Status reconfirmed by COSSARO in June 2011. Recovery strategy issued Mar. 2015; government response Mar. 2016.	No nests reported during recent OBBA of Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Rarely reported from this area. Prefers open, moist tallgrass fields. Individuals and nests also protected under federal SARA and <i>Migratory Birds Convention Act</i> .	No suitable habitat on Site; Extremely rare species. Low Probability.

Table B1. Species at Risk Desktop Assessment Results

Species Name	Status under federal Species at Risk Act, 2002	Status under COSEWIC	Status under Ontario Endangered Species Act, 2007	Distribution in National Capital Region	Habitat Comments	Potential to be Present on Site
Horned Grebe Grèbe esclavon (Podiceps auritus)	Endangered - Magdalen Islands population	Endangered - Magdalen Islands population	Special Concern (Sept. 2009)	Migrant only; no reported nests. No known occurrences on Site or surrounding area (NHIC).	Found during spring and fall migration on rivers, marshes, etc. Usually nests in small ponds, marshes and shallow bays that contain areas of open water and emergent vegetation. Protected under federal <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Least Bittern Petit blongios (Icthyophaga exilis)	Threatened (Schedule 1), Recovery strategy issued in 2014.	Threatened	Threatened (reconfirmed Sept. 2009). Recovery strategy issued Dec. 2015; government response Sept. 2017	Confirmed nesting in 1 square, 3 probable and 4 possible reported during recent OBBA of Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Strongly prefers cattail marshes with a mix of open pools and channels. Individuals and nests also protected under federal SARA and <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Loggerhead Shrike Pie-grièche migratrice (Lanius ludovicianus)	Endangered (Schedule 1); reconfirmed April 2014. Final recovery strategy issued in Mar. 2015.	Endangered	Endangered - previously regulated under old ESA (reconfirmed March 2015). Government response issued April 2017.	Possible nests reported in Burnt Lands Provincial Park (2018) and in Richmond area (2019), Ottawa. Critical habitat identified in Montague Township. No known occurrences on Site or surrounding area (NHIC).	No confirmed nests have been reported in Ottawa since 2002. It prefers grazed pastures with short grass and scattered shrubs, especially hawthorn. Individuals, nests also protected under federal SARA and <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Olive-sided Flycatcher Moucherolle à côtés olive (Contopus cooperi)	Threatened (Schedule 1) as of March 17, 2010. In consultation for downlisting to Special Concern based on COSEWIC (Apr. 2018).	Special Concern	Special Concern (Sept. 2009)	One probable and one possible nest reported in recent OBBA of Ottawa area. No critical habitat identified. No known occurrences on Site or surrounding area (NHIC).	Forest edge species; forages in open areas from high vantage points in trees. It will use forests that have been logged or burned, if there are ample tall snags and trees to use for foraging perches. Individuals and nests protected under federal SARA and <i>Migratory Birds Convention Act</i> .	No suitable habitat is present on Site. Low Probability.
Peregrine Falcon falcon pèlerin (Falco peregrinus)	Special Concern (Schedule 1) as of 2012. Management plan issued Oct. 2017. In consultation for delisting.	Not at Risk	Special Concern (as of January 2013)	One confirmed nest (101 Lyon) in recent OBBA of Ottawa. Second nest (875 Heron) established in 2011. No known occurrences on Site or surrounding area (NHIC).	Usually associated with rugged wilderness; nest on tall, steep cliff ledges close to large bodies of water, although have been known to nest on tall buildings in downtown cores. Active nesting sites are considered significant wildlife habitat. Individuals and nests also protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	No suitable habitat is present on Site. Low Probability.
Red Knot Bécasseau mouchette (Calidris canutus rufa)	Endangered (Schedule 1) as of July 2012. Draft recovery strategy issued Nov. 2017.	Endangered	Endangered. Recovery strategy adopted Dec. 2018. Habitat regulations pending.	Migrant only; Ottawa. River shores, area lagoons, etc. No known occurrences on Site or surrounding area (NHIC).	Nests in far north. Only occurs in Ontario during migration, where it may feed and rest on beaches. Also protected under federal <i>Migratory Birds Convention Act</i> .	No suitable habitat on Site. Low Probability.
Red-headed Woodpecker Pic à tête rouge (Melanerpes erythrocephalus)	Endangered (Schedule 1)	Endangered	Endangered	One confirmed nest, one probable and two possible during recent OBBA of Ottawa area. Critical habitat identified in parts of western Ottawa. No known occurrences on Site or surrounding area (NHIC).	Nesting pair reported from Village of Constance Bay in recent years. Prefers open deciduous woodlands. Often found in parks, golf courses and cemeteries. These areas typically have many dead trees, which the bird uses for nesting and perching. Individuals and nests protected under federal SARA and <i>Migratory Birds Convention Act</i> .	No suitable habitat on Site. Low Probability.
Rusty Blackbird Quiscale rouilleux (Euphagus carolinus)	Special Concern (Schedule 1). Management plan issued July 2015.	Special Concern	Special Concern (as of August 2018)	No nests reported during recent OBBA of Ottawa area. Primarily occurs during migration. No known occurrences on Site or surrounding area (NHIC).	Prefers wet wooded or shrubby areas (nests at edges of boreal wetlands). In Ontario and Quebec, the breeding range is found in the Hudson Bay Lowlands and northern Boreal Shield ecozones. As a blackbird, not protected under federal <i>Migratory Birds Convention Act</i> ; however, individuals and nests are protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	No suitable habitat on Site. Low Probability.
Short-eared Owl Hibou des marais (Asio flammeus)	Special Concern (Schedule 1)	Threatened	Special Concern (reconfirmed Sept. 2009)	One confirmed nest, two probable and two possible nests reported during recent OBBA of Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Ground-nester; prefers open habitats such as fields and marshes. Lives in open areas such as grasslands, marshes and tundra. Individuals and nests protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	Suitable habitat may be present on Site although no nearby recent observations (NHIC). Low Probability.
Wood Thrush Olive des bois (Hylocichla ustulata)	Threatened (Schedule 1) as of Nov. 2, 2017.	Threatened	Special Concern (June 2014)	5 possible, 15 probable and 10 confirmed nests in recent OBBA of Ottawa area. No known occurrences on Site but occurrences known within the surrounding area (NHIC).	Deciduous or mixed woodlands; they seek moist stands of trees with well-developed undergrowth and tall trees for singing perches. These birds prefer large forests, but will also use smaller stands of trees. Individuals and nests also protected under federal <i>Migratory Birds Convention Act</i> .	No suitable habitat on Site although occurrences known within the surrounding area (NHIC). Low Probability.
Yellow Rail Râle jaune (Coturnicops noveboracensis)	Special Concern (Schedule 1) - status confirmed by COSEWIC in November 2009	Special Concern	Special Concern (reconfirmed March 2010)	Reported nesting in Richmond Fen (2019). No known occurrences on Site or surrounding area (NHIC).	Rarely reported; most often seen in spring migration. Nests in sedge meadows and marshes. Live deep in the reeds, sedges, and marshes of shallow wetlands, where they nest on the ground. The marshy areas used by Yellow Rails have an overlying dry mat of dead vegetation that is used to make roofs for nests. Individuals and nests protected under federal <i>Migratory Birds Convention Act</i> .	No suitable habitat on Site. Low Probability.

Table B1. Species at Risk Desktop Assessment Results

Species Name	Status under federal Species at Risk Act, 2002	Status under COSEWIC	Status under Ontario Endangered Species Act, 2007	Distribution in National Capital Region	Habitat Comments	Potential to be Present on Site
Fish						
American Eel <i>Anguilla rostrata</i>	Under consideration for addition to Schedule 1, listed as threatened by COSEWIC 2012.	Threatened	Endangered. Status reconfirmed by COSSARO in January 2013. Final recovery strategy issued in Nov. 2013. Government response delayed.	Ottawa, Mississippi, Carp (including Pottle Creek), South Nation and Rideau Rivers (including Rideau Canal). No known occurrences on Site but occurrences known within the surrounding area (NHIC).	Primarily nocturnal, hiding in soft substrate or submerged vegetation during the day. Eelgrass and interstitial spaces are important to American Eel as cover. In fresh water, preferred habitat can be found in lakes and rivers including all waters extending from the high-water mark down to at least 10 m depth. Also protected under Fisheries Act.	No suitable habitat on Site although occurrences known within the surrounding area (NHIC). Low Probability.
Bridle Shiner Méné d'herbe <i>Notropis bifrenatus</i>	Special Concern (Schedule 1) – status confirmed by COSEWIC in April 2013.	Special Concern	Special Concern. Status reconfirmed by COSSARO in June 2013.	Rideau River. No known occurrences on Site or surrounding area (NHIC).	Prefers clear water with abundant vegetation over silty or sandy substrate. Also protected under Fisheries Act. Captured by City staff between Hwy 416 and Stevens Creek. Sept. 2009.	No suitable habitat on Site. Low Probability.
Channel Darter Fouille-roche gris <i>Percina capelandi</i>	Special Concern (Schedule 1) as of August 2019.	Special Concern	Special Concern (as of August 2018)	Ottawa River. No known occurrences on Site or surrounding area (NHIC).	Prefers areas with moderate current over sandy or rocky substrate. Also protected under Fisheries Act. Captured by DFO staff in several locations downstream of Gatineau River in 2011.	No suitable habitat on Site. Low Probability.
Lake Sturgeon Esturgeon jaune <i>Acipenser fulvescens</i>	None – listed as threatened by COSEWIC in November 2006	Threatened	Endangered. (Aug. 2018), final recovery strategy issued in 2011. Habitat regulation deferred.	Ottawa River. No known occurrences on Site or surrounding area (NHIC).	Only found in large lakes and rivers. Forages in cool water, 4-9 m deep over soft substrate, spawns in shallower, fast-flowing areas over rocks or gravel. Also protected under Fisheries Act.	No suitable habitat on Site. Low Probability.
Northern Brook Lamprey Lampiroie du Nord <i>Ichthyomyzon fossor</i>	Special Concern (Schedule 1) for Great Lakes-Upper St. Lawrence population. Management plan issued in July 2018.	Special Concern	Special Concern	Ottawa River. No known occurrences on Site or surrounding area (NHIC).	Non-parasitic species; prefers shallow areas, inhabits clear, coolwater streams. The larval stage are often found in the slow-moving portions of a stream. Adults are found in fast flowing riffles comprised of rock or gravel. Also protected under Fisheries Act.	No suitable habitat on Site. Low Probability.
Northern Sunfish Crapet du Nord <i>Lepomis peitastes</i>	Special Concern (Schedule 1) as of August 2019.	Special Concern	Special Concern (as of June 2017)	Ottawa River. Records from Quebec side of river, downstream of Gatineau River, prior to 1994. No recent records. No known occurrences on Site or surrounding area (NHIC).	Lives in shallow vegetated areas of quiet, slow flowing rivers and streams, as well as warm lakes and ponds, with sandy banks or rocky bottoms.	No suitable habitat on Site. Low Probability.
Redside Dace mene long <i>Clinostomus elongatus</i>	Endangered	Endangered	Endangered	May occur in the Ottawa region.	Prefers pools and slow-moving areas of small streams and headwaters with a gravel bottom, often found in areas with overhanging grasses and shrubs. During spawning, can be found in shallow stream areas along with other minnow species.	No suitable habitat on Site. Low Probability.
River Redhorse Chevalier de rivière <i>Moxostoma carinatum</i>	Special Concern (Schedule 1) Management plan issued in July 2018.	Special Concern	Special Concern (reconfirmed June 2017)	Ottawa and Mississippi Rivers; unconfirmed reports from Rideau River. No known occurrences on Site or surrounding area (NHIC).	Prefers fast-flowing, clear rivers over rocky substrate. Also protected under Fisheries Act.	No suitable habitat on Site. Low Probability.
Silver Lamprey Lampiroie argentée <i>Ichthyomyzon unicuspis</i>	Special Concern (Schedule 1), Ottawa River and mouths as of tributaries from Rideau August 2019.	Special Concern	Special Concern as of January 2013	Ottawa River and mouths of tributaries from Rideau Canal east (downstream). No known occurrences on Site or surrounding area (NHIC).	Larvae live 4-7 years in burrows (prefer soft substrates); filter-feed on plankton. Adults live less than two years parasitic on (large) fish. They require clear water so they can find fish hosts, relatively clean stream beds of sand and organic debris for larvae to live in, and unrestricted migration routes for spawning. Adults live in lakes. Also	No suitable habitat on Site. Low Probability.
Mollusca						
Hickorynut Obovarie olivâtre <i>Obovaria olivaria</i>	Endangered (Schedule 1) as of August 2019.	Endangered	Endangered (Jan. 2012). Awaiting federal recovery strategy.	Ottawa River. No known occurrences on Site or surrounding area.	Also protected under federal SARA and Fisheries Act. Lives in sandy bottomed large rivers, in deep (>2 m) flowing water. Larval host believed to be Lake Sturgeon.	No suitable habitat on Site. Low Probability.
Mammals						
Algonquin Wolf Loup de la région Algonquin <i>Canis sp.</i>	Special Concern (Schedule 1), under consideration for Threatened status based on May 2015 COSEWIC assessment.	Threatened	Threatened (June 2016). Draft recovery strategy issued Jan. 2018; final strategy expected by 2020.	Occasional reports. No known occurrences on Site or surrounding area (NHIC).	Formerly known as Eastern Wolf (<i>Canis lupis lycor</i>). Not known to occur here, although range includes much of Renfrew County. Local reports likely involve large coyotes or hybrids. Listed as a furbearer under Fish and Wildlife Conservation Act.	No suitable habitat on Site. Low Probability.
Eastern Cougar Cougar de l'Est <i>Puma concolor</i>	Not listed – data deficient	Not listed	Endangered – previously regulated under old ESA	Occasional reports. No known occurrences on Site or surrounding area (NHIC).	Southern Ontario cougar sightings are typically attributed to misidentified animals or escaped captives, however, Ministry staff have recently (2012) acknowledged the presence of a breeding population in the province. Lives in large, undisturbed forests or other natural areas where there is little human activity.	No suitable habitat on Site. Low Probability.
Eastern Small-footed Myotis (bat) Chauve-souris pygmée de l'Est <i>Myotis leibii</i>	Not listed	Not listed	Endangered (June 2014). Recovery strategy issued June 2017; draft government response Nov. 2017.	Historical record in downtown Ottawa. No known occurrences on Site or surrounding area (NHIC).	Smallest bat in eastern North America. Rare throughout its range. Roosts in rock crevices, barns and sheds. Overwinters in caves and abandoned mines. Individuals also protected in Ontario under Fish and Wildlife Conservation Act.	No suitable habitat on Site. Low Probability.
Gray Fox Renard gris <i>Urocyon cinereogreus</i>	Threatened (Schedule 1). Recovery strategy posted June 2018.	Threatened	Threatened (reconfirmed June 2017). Recovery strategy delayed, pending completion of federal strategy.	Recent report in Kanata North (NHIC) as well as to south and west of Ottawa (2016 COSEWIC status report). No known occurrences on Site or surrounding area (NHIC).	Eastern Ontario sightings believed to be of single animals immigrating from adjacent United States; no known local breeding population. Listed as a furbearer under Fish and Wildlife Conservation Act. Lives in deciduous forests and marshes. Grey Fox dens are usually found in dense shrubs close to a water source but they will also use rocky areas, hollow trees, and underground burrows dug by other animals.	No suitable habitat on Site. Low Probability.
Little Brown Myotis (bat) Petite chauve-souris brune <i>Myotis lucifugus</i>	Endangered (Schedule 1) as of Dec. 2014. Recovery strategy issued Dec. 2018.	Endangered	Endangered as of January 2013. Draft recovery strategy issued July 2019.	Various sites in central and western parts of City. Critical habitat (hibernacula) identified to northwest of Ottawa. No known occurrences on Site or surrounding area (NHIC).	Maternal colonies known to use buildings, may also roost in trees during summer. Colonies overwinter in caves and abandoned mines. Individuals also protected in Ontario under Fish and Wildlife Conservation Act.	No suitable habitat on Site. Low Probability.
Northern Myotis / Northern Long-eared Bat Chauve-souris nordique <i>Myotis septentrionalis</i>	Endangered (Schedule 1) as of Dec. 2014. Recovery strategy issued Dec. 2018.	Endangered	Endangered as of Jan. 2013. Draft recovery strategy issued July 2019.	Historical record in downtown Ottawa, more recent sites to east (Orléans, Clarence-Rockland). Critical habitat (hibernacula) identified to northwest of Ottawa. No known occurrences on Site or surrounding area (NHIC).	Difficult to distinguish from Little Brown Myotis. Roosts mainly in trees during summer; overwinters in caves and abandoned mines. Individuals also protected in Ontario under Fish and Wildlife Conservation Act.	No suitable habitat on Site. Low Probability.
Tri-coloured Bat / Eastern Pipistrelle Pipistrelle de l'Est <i>Perimyotis subflavus</i>	Endangered (Schedule 1) as of Dec. 2014. Recovery strategy issued Dec. 2018.	Endangered	Endangered (June 2016). Draft recovery strategy issued July 2019.	Unknown, historical records from sites in urban Ottawa, Lanark County. Critical habitat (hibernacula) identified to northwest of Ottawa. No known occurrences on Site or surrounding area (NHIC).	Roosts mainly in trees during summer; overwinters in caves and mines along with other species, but often uses deeper parts of the hibernaculum.	No suitable habitat on Site. Low Probability.

Table B1. Species at Risk Desktop Assessment Results

Species Name	Status under federal Species at Risk Act, 2002	Status under COSEWIC	Status under Ontario Endangered Species Act, 2007	Distribution in National Capital Region	Habitat Comments	Potential to be Present on Site
Amphibians						
Western Chorus Frog Rainette faux-gélon de l'ouest (<i>Pseudacris triseriata</i>)	Threatened (Schedule 1) as of March 17, 2010. Recovery strategy issued Dec. 2015. Protected on federal lands only at this time.	Threatened	Not at Risk (2009)	Scattered throughout, with numerous sites in western half of City of Ottawa. Critical habitat identified in several atlas squares in western Ottawa. No known occurrences on Site or surrounding area (NHIC).	Requires vernal (non-permanent) pools for breeding. Short-lived and highly sensitive to habitat loss. DNA data indicate that local populations are actually Boreal species (<i>Pseudacris maculata</i>) but federal protection is still being applied at this time. NOTE: under SARA, Government of Canada may extend protection to private lands if provincial protection is deemed insufficient. This has not been ordered in Ontario to date.	No suitable habitat on Site. Low Probability.
Reptiles						
Blanding's Turtle Tortue mouchetée (<i>Emydoidea blandingii</i>)	Endangered (Schedule 1); updated to Endangered by Recovery strategy issued Dec. 2018.	Endangered	Threatened (Reconfirmed August 2018). Draft recovery strategy issued July 2019.	Scattered throughout, with numerous sites in western half of Ottawa. Critical habitat present in Ottawa. No known occurrences on Site or surrounding area (NHIC).	Quiet lakes, streams and wetlands with abundant emergent vegetation; also frequently occurs in adjacent upland forests. Individuals (including eggs) also protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	Potentially suitable habitat in Carp River Municipal Drain. Carp River Municipal Drain is approx. 50m from the Site. Low Probability.
Eastern Musk Turtle / Slinkpot Tortue musquée (<i>Stemotherus odoratus</i>)	Special Concern (Schedule 1) – as of Feb. 2018.	Special Concern	Special Concern (June 2014)	Scattered. No known occurrences on Site or surrounding area (NHIC).	Secretive wetland species; highly aquatic. Found in ponds, lakes, marshes and rivers that are generally slow-moving have abundant emergent vegetation and muddy bottoms that they burrow into for winter hibernation. Individuals (including eggs) protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	Potentially suitable habitat in Carp River Municipal Drain. Carp River Municipal Drain is approx. 50m from the Site. Low Probability.
Eastern Ribbonsnake Couleuvre mince (<i>Thamnophis sauritus</i>)	Special Concern (Schedule 1) – status reconfirmed in Nov. 2012. Management plan issued July 2015.	Special Concern	Special Concern. Status reconfirmed by COSSARO in January 2013.	Few reported; mostly from northwestern Ottawa. No known occurrences on Site or surrounding area (NHIC).	Found in marshy edges of wetlands and watercourses. At the onset of cold weather, these snakes congregate in underground burrows or rock crevices to hibernate together.	Potentially suitable watercourse edge habitat between Carp River Municipal Drain and the Site although no marsh habitat. Low Probability.
Milkenake Couleuvre tachetée (<i>Lampropeltis triangulum</i>)	Special Concern (Schedule 1). Management plan issued July 2015.	Special Concern	Not at Risk (June 2016).	Scattered throughout the northern half of Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Found in variety of open, scrubby or edge habitats, including pastures. Individuals (including eggs) protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	Not ideal habitat on Site. Low Probability.
Northern Map Turtle Tortue géographique (<i>Graptemys geographica</i>)	Special Concern (Schedule 1) – status confirmed by COSEWIC in November 2012. Draft management plan issued Mar. 2016.	Special Concern	Special Concern. Status reconfirmed by COSSARO in January 2013.	Ottawa River, Rideau River (Burritt's Rapids area), South Nation River. No known occurrences on Site or surrounding area (NHIC).	Highly aquatic species; found only in lakes and large rivers. Individuals (including eggs) protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	No ideal habitat in Carp River Municipal Drain. Low Probability.
Snapping Turtle Tortue serpentine (<i>Chelydra serpentina</i>)	Special Concern (Schedule 1) as of February 2011. Draft management plan issued Mar. 2016.	Special Concern	Special Concern (Sept. 2009)	Widespread and abundant. No known occurrences on Site but occurrences known within the surrounding area (NHIC).	Highly aquatic species found in a wide variety of wetlands, water bodies and watercourses. Listed as a game reptile under <i>Fish and Wildlife Conservation Act</i> .	Potentially suitable habitat in Carp River Municipal Drain. Carp River Municipal Drain is approx. 50m from the Site. Occurrences known within the surrounding area (NHIC). Moderate Probability.
Spiry Softshell Tortue-molle à épines (<i>Apalone spiniferus</i>)	Endangered (Schedule 1) Recovery strategy issued Dec. 2018.	Endangered	Endangered (as of June 2017). Draft recovery strategy issued July 2019.	Few historical records along Ottawa River, outside of Ottawa area. No critical habitat identified in Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Ottawa River records are dated and species is now believed extirpated from eastern Ontario. Highly aquatic species found in shallow, slow-moving areas over sandy substrate. Individuals (including eggs) also protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	Potentially suitable habitat in Carp River Municipal Drain but rare species. Low Probability.
Spotted Turtle Tortue ponctuée (<i>Clemmys guttata</i>)	Endangered (Schedule 1); reconfirmed Nov. 2014. Recovery strategy issued Dec. 2018.	Endangered	Endangered. Reconfirmed June 2016. Draft recovery strategy issued July 2019.	Few reported (locations confidential). Critical habitat present in Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Semi-aquatic and prefers ponds, marshes, bogs and even ditches with slow-moving, unpolluted water and an abundant supply of aquatic vegetation/deciduous wetland species. Contact MECP for information (data sensitivity due to illegal collection risks). Individuals (including eggs) also protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	Potentially suitable habitat in Carp River Municipal Drain but rare species. Low Probability.
Wood Turtle Tortue des bois (<i>Glyptemys insculpta</i>)	Threatened (Schedule 1) as of March 17, 2010. COSEWIC in Nov. 2012.	Threatened	Endangered. Habitat regulation issued.	No regulated habitat identified in Ottawa area. Critical habitat may be present to northwest. No known occurrences on Site or surrounding area (NHIC).	Primarily terrestrial forest species associated with clear, gravelly streams. Prefers clear rivers, streams or creeks with a slight current and sandy or gravelly bottom. Contact MECP for information (data sensitivity due to illegal collection risks). Individuals (including eggs) also protected in Ontario under <i>Fish and Wildlife Conservation Act</i> .	Potentially suitable habitat in Carp River Municipal Drain. No occurrence records. Low Probability.
Midland Painted Turtle Tortue peinte du Midland (<i>Chrysemys picta marginata</i>)	Special Concern	Special Concern	Not Listed	Widespread and abundant. No known occurrences on Site but occurrences known within the surrounding area (NHIC).	Painted turtles inhabit waterbodies, such as ponds, marshes, lakes and slow-moving creeks, that have a soft bottom and provide abundant basking sites and aquatic vegetation. These turtles often bask on shorelines or on logs and rocks that protrude from the water. The midland painted turtle hibernates on the bottom of waterbodies.	Potentially suitable habitat in Carp River Municipal Drain. Carp River Municipal Drain is approx. 50m from the Site. Occurrences known within the surrounding area (NHIC). Moderate Probability.
Plants						
American Chestnut Châtaignier d'Amérique (<i>Castanea dentata</i>)	Endangered (Schedule 1)	Endangered	Endangered. Final recovery strategy issued in 2012.	One population reported along Dolman Ridge Road in Ottawa (federal property); may have been extirpated. No known occurrences on Site or surrounding area (NHIC).	The American Chestnut prefers drier upland deciduous forests with sandy, acidic to neutral soils. The species grows alongside Red Oak, Black Cherry, Sugar Maple, American Beech and other deciduous tree species.	None noted during Englobe 2023 survey. Low Probability.
American Ginseng Ginseng à cinq folioles (<i>Panax quinquefolius</i>)	Endangered (Schedule 1). Recovery strategy issued June 2018.	Endangered	Endangered. Recovery strategy delayed, pending completion of federal strategy.	Various (locations confidential). Critical habitat broadly identified in Ottawa area. No known occurrences on Site or surrounding area (NHIC).	American Ginseng typically grows in rich, moist, but well-drained, and relatively mature, deciduous woods dominated by Sugar Maple (<i>Acer saccharum</i>), White Ash (<i>Fraxinus americana</i>) and American Basswood (<i>Tilia americana</i>).	None noted during Englobe 2023 survey. Low Probability.
Butternut Noyer centré (<i>Juglans cinerea</i>)	Endangered (Schedule 1); final recovery strategy issued in 2010.	Endangered	Endangered. Reconfirmed August 2018.	Widespread. No known occurrences on Site or surrounding area (NHIC).	Butternut usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and is often found along streams. It is also found on well-drained gravel sites and rarely on dry rocky soil. This species does not do well in the shade, and often grows in sunny openings and near forest edges.	None noted during Englobe 2023 survey. Low Probability.
Black Ash Candélie noire (<i>Fraxinus nigra</i>)	Not Listed	Threatened	Status on hold.	Various. No known occurrences on Site or surrounding area (NHIC).	Black Ash is a medium-sized, shade-intolerant hardwood tree species that occurs on moist to wet sites such as swamps, bogs and riparian areas.	None noted during Englobe 2023 survey. Low Probability.
Eastern Prairie Fringed-orchid Platanthe blancheâtre de l'Est (<i>Platanthera leucophaea</i>)	Endangered (Schedule 1)	Endangered	Endangered. Habitat regulations issued.	Richmond Fen in Ottawa (2 locations). No known occurrences on Site or surrounding area (NHIC).	Richmond Fen sites protected by ESA habitat regulations. One of approximately 20 colonies in Ontario. 200 specimens seen at this site in 2000. The Eastern Prairie Fringed-orchid grows in wetlands, fens, swamps and tallgrass prairie. It has been found in ditches and railroad rights of way.	None noted during Englobe 2023 survey. Low Probability.

Table B1. Species at Risk Desktop Assessment Results

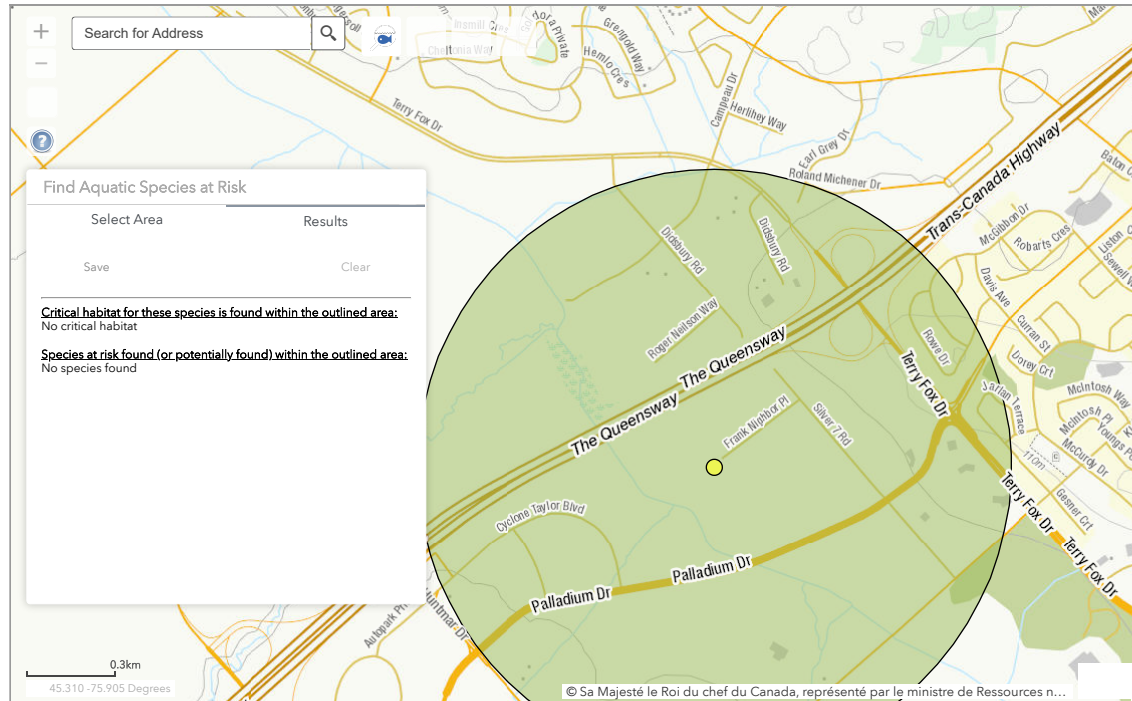
Species Name	Status under federal Species at Risk Act, 2002	Status under COSEWIC	Status under Ontario Endangered Species Act, 2007	Distribution in National Capital Region	Habitat Comments	Potential to be Present on Site
Lichens						
Black-foam Lichen <i>Azore mousses-craie</i> (<i>Azore copodes</i>)	Threatened (Schedule 1, Protected on federal lands only at this time.	Threatened	Data deficient – Dec. 2015.	Historic occurrences only; no known recent occurrences. No known occurrences on Site or surrounding area (NHIC).	Believed extirpated from historic locations in eastern Ontario and adjacent Quebec. Extant populations in Nova Scotia, possibly New Brunswick. The Black-foam Lichen grows on the trunks of mature deciduous trees growing on level or sloped land where high humidity is supplied by nearby wetlands, lakes or streams. The most common host is Red Maple but it also occurs on White Ash, Sugar Maple, Red Oak, and very occasionally on other species.	Rare. No known occurrences near Site; no suitable mature deciduous forests on Site. Low Probability.
Flooded Jellyfish <i>Leptogium des terrains inondés</i> (<i>Leptogium rivulare</i>)	Special Concern (Schedule 1)	Special Concern	Not at Risk (March 2015)	Stony Swamp, Marlborough Forest in Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Seasonally flooded woodland areas, deciduous swamps. Found below high-water mark on deciduous trees within swamps.	No suitable habitat present on Site. Low Probability.
Pale-bellied Frost Lichen <i>Physconia pâle</i> (<i>Physconia subparvula</i>)	Endangered (Schedule 1) as of June 20, 2012. Final recovery strategy (adapted provincial strategy) issued Jan. 2016.	Endangered	Endangered (as of November 2009). Habitat regulations issued.	Historical records in NCR area (extrapolated locally). No known occurrences on Site or surrounding area (NHIC).	Most recent occurrence in 1900. Sensitive to changes in air quality associated with urban environments. Believed to have been extirpated from historic location(s) in downtown Ottawa. Pale-bellied frost lichen grows on the bark of hardwood trees such as White Ash, Black walnut, and American elm. It can also be found growing on fence posts and boulders.	No ideal habitat present on Site. Low Probability.
Beeches						
Bogbean Buckmoth <i>Hémileuca du méryanthe</i> (<i>Hémileuca</i> sp. 1)	Endangered (Schedule 1), Final recovery strategy (adapted provincial strategy) issued Dec. 2015	Endangered	Endangered (Sept. 2010), final recovery strategy issued in Dec. 2013.	Richmond Fen Ottawa (2 locations). No known occurrences on Site or surrounding area (NHIC).	Brunton (2005) indicates preferred food plant bog-bean is also present elsewhere in Ottawa (Mer Bleue, Alton Wetland and Long Swamp). The Bogbean Buckmoth is restricted to open, chalky, low shrub fens containing large amounts of bogbean, an emergent wetland flowering plant.	No ideal habitat on Site. No recorded historical occurrences near the Site. Low Probability.
Gypsy Cuckoo Bumble Bee <i>Psithyrus bohémien</i> (<i>Bombus bohemicus</i>)	Endangered (Schedule 1) – as of May 30, 2018	Endangered	Endangered (March 2015). Recovery strategy issued Dec. 2017.	Historic occurrences only; no known recent occurrences. No known occurrences on Site or surrounding area (NHIC).	Range in Ontario uncertain; most recent record from Piney Provincial Park near Samia (2008). Social parasite on rusty-patched and yellow-banded bumble bees. Occurs in diverse habitats such as open meadows, agricultural and urban areas, boreal forest and woodlands.	No ideal habitat on Site. No recorded historical occurrences near the Site. Low Probability.
Monarch butterfly <i>Danaus plexippus</i>	Special Concern (Schedule 1), updated to Endangered by COSEWIC Nov. 2016. In consultation for updating to Schedule 1.	Endangered	Special Concern (reconfirmed March 2010).	Widespread. No known occurrences on Site or surrounding area (NHIC).	Adults occur where wildflowers grow. Milkweed plants in meadows required for caterpillar life-stage. Individuals protected in Ontario under Fish and Wildlife Conservation Act.	No ideal habitat anticipated on Site. Recorded historical occurrences within 10 km of the Site via Ontario Butterfly Atlas. Low Probability.
Mottled Duskywing <i>Gryncis martealis</i>	Under consideration for addition to Schedule 1; listed as endangered by COSEWIC in November 2012.	Endangered	Endangered (June 2014), Recovery strategy issued June 2015; government response Mar. 2016. Habitat regulations delayed.	Constance Bay area, Burnt Lands Alvar. No known occurrences on Site or surrounding area (NHIC).	Larval food plant (New Jersey Tea) found in sandy areas, alvars. COSEWIC assessment report notes that last record for Constance Bay was in 1997 (may be extirpated) and last record for Burnt Lands Alvar was in 2008. Individuals also protected in Ontario under Fish and Wildlife Conservation Act.	No suitable habitat on Site. No recorded historical occurrences near the Site. Low Probability.
Nine-spotted Lady Beetle <i>Coccinelle à neuf points</i> (<i>Gomphus quadricolor</i>)	None – listed as endangered by COSEWIC in April 2016.	Endangered	Endangered (as of June 2017)	Unknown – historically present, but COSSARO reports no Ontario records since mid-1990s. No known occurrences on Site or surrounding area (NHIC).	Historically common throughout southern Canada but has declined severely in recent decades and is now rarely found. Tends to live in agricultural areas, grasslands, meadows.	Potentially suitable habitat on Site although no recorded historical occurrences near the Site. Low Probability.
Rapids Clubtail – a dragonfly <i>Gomphus quadricolor</i>	Endangered (Schedule 1) – as of March 17, 2010. Reconfirmed Nov. 2018.	Endangered	Endangered (Sept. 2009), Habitat regulations issued.	None known. No regulated habitat identified in Ottawa area. No known occurrences on Site or surrounding area (NHIC).	Occurs along Mississippi River in Blakeney/Pakenham area upstream of City. One of two extant populations in Ontario (and Canada). The Rapids clubtail is typically found in clear, cool medium-to-large rivers with gravel channels and aquatic plants.	Requires medium to large clear, cool rivers with alternating pools and riffles. No suitable habitat present on Site. Low Probability.
Rusty-patched Bumble Bee <i>Bombus affinis</i>	Endangered (Schedule 1)	Endangered	Endangered (Sept. 2010), final recovery strategy issued in 2011.	Historic records only from scattered sites in Ottawa and Gatineau. No known occurrences on Site or surrounding area (NHIC).	Habitat generalist, usually nests underground. Only known extant location in Canada is Piney Provincial Park near Samia.	No recorded historical occurrences near the Site. Low Probability.
Transverse Lady Beetle <i>Coccinelle à bandes transverses</i> (<i>Coccinelle transversoguttata</i>)	Special Concern (as of Nov. 2016). In consultation for addition to Schedule 1.	Special Concern	Endangered (as of August 2018)	Unknown – historically present, but COSSARO reports no southern Ontario records since 1985. No known occurrences on Site or surrounding area (NHIC).	Historically common throughout most of Canada but has declined severely in parts of its former range. Habitat generalist.	No recorded historical occurrences near the Site, considered rare. Low Probability.
West Virginia White butterfly <i>Pieris virginensis</i>	None	Not listed	Special Concern	Unknown; no records in NESS or NHIC. No known occurrences on Site or surrounding area (NHIC).	SARO range mapping includes Ottawa. Requires mature moist deciduous woods with larval host plant toothwort (<i>Cordamine</i> sp.). Individuals protected in Ontario under Fish and Wildlife Conservation Act.	No suitable habitat on Site; no mature forests, no plant toothwort. No recorded historical occurrences near the Site. Low Probability.
Yellow-banded Bumble Bee <i>Bombus auratus</i>	Special Concern (Schedule 1) – as of May 30, 2018	Special Concern	Special Concern (June 2016)	No known occurrences on Site or surrounding area (NHIC).	2015 COSEWIC assessment report shows many historic occurrences and a few recent (2004-2013) specimens from eastern Ontario/western Quebec region. Found in a variety of open habitat such as native grasslands, farmlands and urban areas. Requires nectaring plants.	Limited suitable habitat on Site; limited nectaring plants. No recorded historical occurrences near the Site. Low Probability.
Skillet Clubtail <i>Gomphus ventriosus</i>	Endangered	Endangered	Not listed	No known occurrences on Site or surrounding area (NHIC).	It is a specialist of clean, large, medium to slow-running waters with fine substrate, usually having a significant component of silt and/or clay. Such habitats are usually confined to segments of larger running waters where they flow through rich soils at a low gradient, and it is a comparatively rare type of habitat in southeastern Canada. Examples with clean water are particularly rare because such rivers are often surrounded by agricultural	No suitable habitat present on Site. Low Probability.
Notes:						
1. Under the provincial Endangered Species Act, 2007, endangered and threatened species and their habitat are protected. Species of special concern and their habitat are not protected under the ESA but may be protected under other laws as identified in the "Comments" column; habitat for species of special concern may also be considered significant wildlife habitat under the Provincial Policy Statement. Recovery strategies must be developed by the MDCP for all endangered and threatened species. The Ministry must also develop management plans for species of special concern (unless a federal recovery strategy or management plan has already been developed for the species under SARA). The Act also addresses extirpated species (i.e., formerly native species which no longer occur in the wild in Ontario) by protecting individuals and, if reintroduction is deemed feasible by the Minister, their habitat.						
2. The federal Species at Risk Act applies only to species listed on Schedule 1 (Schedules 2 and 3 list species awaiting reassessment by COSEWIC, which will then be promoted to Schedule 1 if they are determined to still be at risk). Endangered and threatened species on Schedule 1, and their residences, are protected. This protection only extends to federal lands, except in the case of migratory birds or aquatic species, which are protected throughout Canada. Protection for other listed species may be extended to non-federal lands by the government if the species is not deemed to be adequately protected by the laws of the province or territory. The government must prepare recovery strategies for endangered and threatened species, which identify areas of critical habitat for protection under the Act. Management plans must be developed for species of special concern. The Act also requires the preparation of recovery strategies for extirpated species.						
3. COSEWIC = Committee on the Status of Endangered Wildlife in Canada.						
4. OBBA = Ontario Breeding Bird Atlas. The Atlas is a multi-year survey undertaken by trained volunteers across Ontario to determine the distribution of breeding birds in the province. The most recent Atlas survey was undertaken in 2001-2005.						
5. COSSARO = Committee on the Status of Species at Risk in Ontario.						
6. MDCP = Ministry of Environment, Conservation and Parks.						
7. NESS = Natural Environment System Strategy; study undertaken for Regional Municipality of Ottawa-Carleton by Brownell et al. (1997).						

Aquatic species at risk map

We've compiled critical habitat and distribution data for aquatic species listed under the Species at Risk Act (SARA). This map is intended to provide an overview of the distribution of aquatic species at risk and the presence of their critical habitat within Canadian waters. The official source of information is the [Species at Risk Public Registry](#).

If you encounter an aquatic species at risk in an area that isn't currently mapped, please notify your regional [Fisheries Protection Program office](#) to ensure that you're compliant with SARA.

► Information and legend



Date modified:
2022-12-22

NHIC Data

To work further with this data select the content and copy it into your own word or excel documents.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1105642	SPECIES	Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR		18VR2716	
1105642	SPECIES	Wood Thrush	<i>Hylocichla mustelina</i>	SC	THR		18VR2716	
1105642	SPECIES	Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC		18VR2716	
1105652	SPECIES	American Eel	<i>Anguilla rostrata</i>	END	THR		18VR2816	
1105652	SPECIES	Midland Painted Turtle	<i>Chrysemys picta marginata</i>		SC		18VR2816	
1105652	SPECIES	Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC		18VR2816	
1105652	SPECIES	Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR		18VR2816	
1105652	SPECIES	Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR		18VR2816	
1105652	SPECIES	Wood Thrush	<i>Hylocichla mustelina</i>	SC	THR		18VR2816	

Atlas Data Summary

Select what type of data summary you would like to display and click the appropriate view button. You can use the [square resource page](#) to find out where your atlas squares or regions are located.

What years do you want to display :: all years combined Which version of the atlas Second (2001-2005)

How do you want to view the results: Tabular results

Show me statistics on the number of species reported, the effort, etc.

- 1. View summary statistics:: Province View
- 2. View summary statistics: By Square within region 1. Essex View
- 3. View list of completed Point Counts in square :: 18VR21 View

Show me the list of species, the highest breeding evidence and abundance

- 4. View species list for :: Province View
- 5. View species list for square or block no. :: 18VR21 View

Show me the list of regions or squares reporting a species

- 6. View list of Regions reporting View

A total of 25 point counts have been completed in square 18VR21. The following pre-defined point counts have been completed: 1, 7, 10, 11, 12, 14, 16, 18, 20, 21, 22, 23, 24, 31, 34

In addition 10 point count(s) have been completed elsewhere.

Target number of point counts in this square: 21 road side, 4 off road (1 in coniferous forest, 1 in tree wetlands, 1 in mixed forest, 1 in deciduous forest). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

Species list for square 18VR21 (number of entries returned: 105)

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Categ	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
24	18VR21	Canada Goose	FY	CONF	1	Jim J. Gillick	2	8.0	1.0	1
24	18VR21	Wood Duck	FY	CONF	1	Mick Panesar				
24	18VR21	American Black Duck	H	POSS	1	Dick Mabee				
24	18VR21	Mallard	FY	CONF	1	Jim J. Gillick	3	12.0	0.2	1
24	18VR21	Blue-winged Teal	H	POSS	1	Mick Panesar				
24	18VR21	Ruffed Grouse	A	PROB	1	Dick Mabee				
24	18VR21	Wild Turkey	FY	CONF	1	Dick Mabee				
24	18VR21	Common Loon	P	PROB	1	Dick Mabee				
24	18VR21	Pied-billed Grebe	H	POSS	1	Dick Mabee				
24	18VR21	American Bittern	FY	CONF	1	Dick Mabee	1	4.0	0.04	1
24	18VR21	Great Blue Heron	H	POSS	1	Dick Mabee	1	4.0	0.04	1
24	18VR21	Green Heron	H	POSS	1	Dick Mabee				
24	18VR21	Turkey Vulture	NE	CONF	1	Ken Allison				
24	18VR21	Northern Harrier	FY	CONF	1	Jim J. Gillick	1	4.0	0.08	1
24	18VR21	Sharp-shinned Hawk	D	PROB	1	Dick Mabee				
24	18VR21	Northern Goshawk	H	POSS	1	Stew Hamill				
24	18VR21	Red-tailed Hawk	FY	CONF	1	Stew Hamill	1	4.0	0.04	1
24	18VR21	American Kestrel	H	POSS	1	Dick Mabee				
24	18VR21	Merlin	T	PROB	1	Dick Mabee				
24	18VR21	Virginia Rail	S	POSS	1	Dick Mabee				
24	18VR21	Sora	S	POSS	1	Jim J. Gillick				
24	18VR21	Killdeer	DD	CONF	1	Jim J. Gillick	1	4.0	0.04	1
24	18VR21	Rock Pigeon	D	PROB	1	Jim J. Gillick				
24	18VR21	Spotted Sandpiper	FY	CONF	1	Jim J. Gillick	1	4.0	0.12	1
24	18VR21	Common Snipe	D	PROB	1	Jim J. Gillick	1	4.0	0.04	1
24	18VR21	American Woodcock	S	POSS	1	Jim J. Gillick	1	4.0	0.04	1
24	18VR21	Mourning Dove	AE	CONF	1	Jim J. Gillick	17	68.0	0.88	1
24	18VR21	Black-billed Cuckoo	S	POSS	1	Dick Mabee				
24	18VR21	Eastern Screech-Owl	S	POSS	1	Jim J. Gillick				
24	18VR21	Great Horned Owl	H	POSS	1	Dick Mabee				

24	18VR21	Whip-poor-will	S	POSS	1	Dick Mabee				
24	18VR21	Ruby-throated Hummingbird	P	PROB	1	Dick Mabee				
24	18VR21	Belted Kingfisher	FY	CONF	1	Dick Mabee				
24	18VR21	Yellow-bellied Sapsucker	N	PROB	1	Dick Mabee				
24	18VR21	Downy Woodpecker	D	PROB	1	Jim J. Gillick	1	4.0	0.12	1
24	18VR21	Hairy Woodpecker	AE	CONF	1	Dick Mabee	1	4.0	0.04	1
24	18VR21	Northern Flicker	FY	CONF	1	Jim J. Gillick	1	4.0	0.04	1
24	18VR21	Pileated Woodpecker	D	PROB	1	Jim J. Gillick				
24	18VR21	Eastern Wood-Pewee	S	POSS	1	Mick Panesar				
24	18VR21	Alder Flycatcher	S	POSS	1	Dick Mabee	1	4.0	0.08	1
24	18VR21	Least Flycatcher	S	POSS	1	Dick Mabee				
24	18VR21	Eastern Phoebe	FY	CONF	1	Jim J. Gillick	6	24.0	0.36	1
24	18VR21	Great Crested Flycatcher	FY	CONF	1	Dick Mabee	4	16.0	0.2	1
24	18VR21	Eastern Kingbird	AE	CONF	1	Dick Mabee				
24	18VR21	Warbling Vireo	T	PROB	1	Dick Mabee	4	16.0	0.16	1
24	18VR21	Red-eyed Vireo	T	PROB	1	Dick Mabee	4	16.0	0.24	1
24	18VR21	Blue Jay	FY	CONF	1	Jim J. Gillick	8	32.0	0.44	1
24	18VR21	American Crow	FY	CONF	1	Jim J. Gillick	15	60.0	1.04	1
24	18VR21	Common Raven	NY	CONF	1	Langis Sirosis				
24	18VR21	Tree Swallow	NY	CONF	1	Jim J. Gillick	3	12.0	0.4	1
24	18VR21	Northern Rough-winged Swallow	AE	CONF	1	Stew Hamill				
24	18VR21	Bank Swallow	NU	CONF	1	Stew Hamill				
24	18VR21	Barn Swallow	NE	CONF	1					
24	18VR21	Black-capped Chickadee	P	PROB	1	Dick Mabee	1	4.0	0.04	1
24	18VR21	Red-breasted Nuthatch	AE	CONF	1					
24	18VR21	White-breasted Nuthatch	FY	CONF	1	Dick Mabee	1	4.0	0.04	1
24	18VR21	Brown Creeper	S	POSS	1	Stew Hamill				
24	18VR21	House Wren	H	POSS	1	Jim J. Gillick	2	8.0	0.12	1
24	18VR21	Sedge Wren	P	PROB	1	Dick Mabee	1	4.0	0.04	1
24	18VR21	Marsh Wren	N	PROB	1	Jim J. Gillick				
24	18VR21	Golden-crowned Kinglet	S	POSS	1	Stew Hamill				
24	18VR21	Veery	S	POSS	1	Dick Mabee				
24	18VR21	Hermit Thrush	S	POSS	1	Dick Mabee				
24	18VR21	Wood Thrush	NE	CONF	1		4	16.0	0.32	1
24	18VR21	American Robin	AE	CONF	1		19	76.0	1.68	1
24	18VR21	Gray Catbird	FY	CONF	1	Jim J. Gillick	1	4.0	0.04	1
24	18VR21	Brown Thrasher	S	POSS	1	Dick Mabee				
24	18VR21	European Starling	FY	CONF	1	Jim J. Gillick	5	20.0	0.36	1
24	18VR21	Cedar Waxwing	FY	CONF	1	Jim J. Gillick	8	32.0	0.52	1
24	18VR21	Nashville Warbler	T	PROB	1	Dick Mabee	1	4.0	0.04	1
24	18VR21	Yellow Warbler	T	PROB	1	Jim J. Gillick	2	8.0	0.12	1
24	18VR21	Chestnut-sided Warbler	T	PROB	1	Dick Mabee				
24	18VR21	Magnolia Warbler	S	POSS	1	Dick Mabee	1	4.0	0.08	1
24	18VR21	Yellow-rumped Warbler	S	POSS	1	Dick Mabee				
24	18VR21	Black-throated Green Warbler	S	POSS	1	Dick Mabee				
24	18VR21	Pine Warbler	T	PROB	1	Dick Mabee	1	4.0	0.04	1
24	18VR21	Black-and-white Warbler	CF	CONF	1	Dick Mabee	6	24.0	0.28	1
24	18VR21	American Redstart	S	POSS	1	Dick Mabee	1	4.0	0.04	1
24	18VR21	Ovenbird	S	POSS	1	Dick Mabee	3	12.0	0.12	1
24	18VR21	Northern Waterthrush	S	POSS	1	Dick Mabee				
24	18VR21	Mourning Warbler	H	POSS	1	Mick Panesar				
24	18VR21	Common Yellowthroat	CF	CONF	1	Dick Mabee	8	32.0	0.32	1
24	18VR21	Eastern Towhee	S	POSS	1	Dick Mabee				
24	18VR21	Chipping Sparrow	AE	CONF	1	Dick Mabee	4	16.0	0.2	1
24	18VR21	Field Sparrow	FY	CONF	1	Dick Mabee	1	4.0	0.04	1
24	18VR21	Savannah Sparrow	S	POSS	1	Dick Mabee				
24	18VR21	Song Sparrow	FY	CONF	1	Jim J. Gillick	13	52.0	0.84	1
24	18VR21	Swamp Sparrow	CF	CONF	1	Dick Mabee	2	8.0	0.16	1
24	18VR21	White-throated Sparrow	FY	CONF	1	Stew Hamill	5	20.0	0.28	1
24	18VR21	Dark-eyed Junco	H	POSS	1	Dick Mabee				
24	18VR21	Scarlet Tanager	S	POSS	1	Dick Mabee				
24	18VR21	Northern Cardinal	FY	CONF	1	Jim J. Gillick	6	24.0	0.24	1
24	18VR21	Rose-breasted Grosbeak	A	PROB	1	Jim J. Gillick	3	12.0	0.12	1
24	18VR21	Indigo Bunting	H	POSS	1	Dick Mabee				
24	18VR21	Bobolink	AE	CONF	1	Jim J. Gillick	2	8.0	0.28	1
24	18VR21	Red-winged Blackbird	FY	CONF	1	Jim J. Gillick	13	52.0	1.16	1
24	18VR21	Eastern Meadowlark	S	POSS	1	Dick Mabee				
24	18VR21	Common Grackle	FS	CONF	1	Dick Mabee	5	20.0	0.68	1
24	18VR21	Brown-headed Cowbird	FY	CONF	1		4	16.0	0.28	1
24	18VR21	Baltimore Oriole	AE	CONF	1	Dick Mabee	5	20.0	0.28	1
24	18VR21	Purple Finch	P	PROB	1	Jim J. Gillick				
24	18VR21	House Finch	P	PROB	1	Dick Mabee	1	4.0	0.04	1
24	18VR21	American Goldfinch	FY	CONF	1	Jim J. Gillick	12	48.0	1.08	1
24	18VR21	Evening Grosbeak	S	POSS	1	Dick Mabee				
24	18VR21	House Sparrow	NU	CONF	1	Jim J. Gillick	2	8.0	0.12	1

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LEGEND	
Breeding Evidence Max BE: Highest Breeding Evidence recorded Categ: Highest Breeding Category recorded (OBS=observed, POSS=possible, PROB=probable, CONF=confirmed) #Sq: Number of squares with species (Breeding Evidence) Atlasser name: Name of atlasser who reported the highest breeding evidence (if they accepted that their name be displayed). If more than one person provided the same breeding evidence code, then only the number of atlassers is listed.	Point Counts #PC: Number of Point Counts with species %PC: Percent of Point Counts with species Abun: Average number of birds per Point Count #Sq: Number of squares with species (Point Counts)

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Phone: 1-519-586-3531 E-mail: atlas@birdsontario.org **Banner photo:** John Reaume



Species list in taxonomic order for square 18VR21

All species

Number of rows of data displayed below: 17.

Species #	Common Name	# of Records	Earliest Yr _____	Latest Yr
1	Blanding's Turtle	42	1954	2019
3	Midland Painted Turtle	26	1954	2019
6	Snapping Turtle	23	1978	2019
12	Eastern Gartersnake	18	1956	2017
18	Milksnake	11	1978	2019
21	Red-bellied Snake	4	2011	2019
23	Northern Ring-necked Snake	1	2015	2015
27	Gray Treefrog	9	1954	2013
28	Green Frog	12	1954	2011
29	Mink Frog	2	1903	1988
30	Northern Leopard Frog	18	1903	2018
32	Spring Peeper	29	1964	2019
33	Western Chorus Frog	18	2000	2018
34	Wood Frog	6	1963	2015
35	American Toad	7	1964	2018
38	Blue-spotted Salamander	3	2018	2019
46	Northern Two-lined Salamander	1	1903	1903

Species list in taxonomic order for square
18VR21



All species

Number of rows of data displayed below: 65.

Species #	Common Name	Scientific Name	# of Records	Earliest in Yr (adults)	Latest in Yr (adults)	Earliest Yr	Latest Yr
5	Northern Cloudywing	<i>Thorybes pylades</i>	4	Jun. 3	Jun. 27	1979	2021
7	Dreamy Duskywing	<i>Erynnis icelus</i>	1	Jun. 2	Jun. 2	1979	1979
9	Juvenal's Duskywing	<i>Erynnis juvenalis</i>	3	May 17	Jun. 10	1979	2021
15	Wild Indigo Duskywing	<i>Erynnis baptisiae</i>	7	Jul. 3	Sep. 15	2015	2022
21	Arctic Skipper	<i>Carterocephalus palaemon</i>	3	May 31	Jun. 4	1992	2006
23	Least Skipper	<i>Ancyloxypha numitor</i>	7	Jun. 12	Aug. 27	1979	2022
25	European Skipper	<i>Thymelicus lineola</i>	23	Jun. 16	Jul. 21	1979	2022
29	Indian Skipper	<i>Hesperia sassacus</i>	1	Jun. 21	Jun. 21	1992	1992
31	Tawny-edged Skipper	<i>Polites themistocles</i>	7	Jun. 6	Jun. 27	1979	2020
32	Crossline Skipper	<i>Polites origenes</i>	1	Jul. 25	Jul. 25	1995	1995
33	Long Dash Skipper	<i>Polites mystic</i>	12	Jun. 9	Jul. 11	1979	2021
35	Northern Broken-Dash	<i>Wallengrenia egeremet</i>	3	Jul. 17	Jul. 31	1982	2006
36	Little Glassywing	<i>Pompeius verna</i>	1	Jun. 22	Jun. 22	2021	2021
38	Delaware Skipper	<i>Anatrytone logan</i>	2	Jul. 6	Jul. 12	2007	2021
39	Mulberry Wing	<i>Poanes massasoit</i>	1	Jul. 3	Jul. 3	2021	2021
40	Hobomok Skipper	<i>Poanes hobomok</i>	10	May 31	Jul. 2	1985	2022
42	Broad-winged Skipper	<i>Poanes viator</i>	5	Jul. 10	Jul. 26	1982	2022
43	Dion Skipper	<i>Euphyes dion</i>	5	Jun. 25	Jul. 21	1992	2022
46	Two-spotted Skipper	<i>Euphyes bimacula</i>	4	Jun. 21	Jun. 29	1992	1992
47	Dun Skipper	<i>Euphyes vestris</i>	6	Jul. 11	Jul. 31	1982	2022
55	Black Swallowtail	<i>Papilio polyxenes</i>	18	May 16	Sep. 2	1979	2021
57	Eastern Giant Swallowtail	<i>Papilio cresphontes</i>	6	Jun. 20	Sep. 12	2012	2022
58.1	Midsummer Tiger Swallowtail	<i>Papilio canadensis x glaucus</i>	2	Jul. 3	Jul. 26	2004	2020
59	Canadian Tiger Swallowtail	<i>Papilio canadensis</i>	11	May 29	Jun. 13	1985	2021
63	Mustard White	<i>Pieris oleracea</i>	3	Jul. 10	Jul. 17	1982	1983
65	Cabbage White	<i>Pieris rapae</i>	40	Apr. 19	Sep. 22	1982	2022
69	Clouded Sulphur	<i>Colias philodice</i>	27	May 19	Oct. 22	1978	2022
70	Orange Sulphur	<i>Colias eurytheme</i>	4	Sep. 2	Sep. 30	1984	2013
82	American Copper	<i>Lycaena phlaeas</i>	1	Aug. 12	Aug. 12	1986	1986
84	Bronze Copper	<i>Lycaena hylus</i>	9	Jun. 16	Sep. 30	1941	2020
88	Acadian Hairstreak	<i>Satyrium acadica</i>	7	Jul. 3	Aug. 1	1982	2021
89	Coral Hairstreak	<i>Satyrium titus</i>	2	Jul. 11	Jul. 20	1992	2009
91	Banded Hairstreak	<i>Satyrium calanus</i>	4	Jun. 22	Aug. 7	2015	2022
92	Hickory Hairstreak	<i>Satyrium caryaevorus</i>	1	Jul. 8	Jul. 8	2022	2022
97	Hoary Elfin	<i>Callophrys polios</i>	3	May 1	May 31	1981	2004
99	Henry's Elfin	<i>Callophrys henrici</i>	2	May 19	Jun. 6	2007	2009
101	Eastern Pine Elfin	<i>Callophrys niphon</i>	2	May 1	May 27	1981	2004
107	Eastern Tailed Blue	<i>Cupido comyntas</i>	13	Jun. 12	Sep. 26	2007	2021
109	Northern Azure	<i>Celastrina lucia</i>	27	May 1	Sep. 2	1979	2022
112	Silvery Blue	<i>Glaucopsyche lygdamus</i>	14	May 18	Jun. 23	1984	2022
119	Great Spangled Fritillary	<i>Speyeria cybele</i>	19	Jun. 27	Sep. 8	1939	2022
120	Aphrodite Fritillary	<i>Speyeria aphrodite</i>	4	Jun. 29	Aug. 12	1982	2021
125	Meadow Fritillary	<i>Boloria bellona</i>	7	May 27	Jul. 17	1979	2013
131.1	Crescent sp.	<i>Phyciodes sp.</i>	5	May 29	Jul. 3	2006	2022
132	Pearl Crescent	<i>Phyciodes tharos</i>	5	Jun. 20	Sep. 30	1995	2020
133	Northern Crescent	<i>Phyciodes cocyta</i>	26	May 29	Aug. 19	1979	2021
135	Baltimore Checkerspot	<i>Euphydryas phaeton</i>	8	Jun. 8	Jul. 18	1982	2017
136	Question Mark	<i>Polygonia interrogatoris</i>	3	Apr. 16	Jun. 27	2010	2012
137	Eastern Comma	<i>Polygonia comma</i>	16	May 1	Sep. 15	2008	2022

141	Gray Comma	Polygonia progne	2	Jun. 25	Jul. 15	2015	2015
142	Compton Tortoiseshell	Nymphalis l-album	3	Apr. 15	Oct. 10	2020	2022
143	Mourning Cloak	Nymphalis antiopa	27	Mar. 25	Oct. 5	1977	2022
144	Milbert's Tortoiseshell	Aglais milberti	4	Mar. 17	Sep. 2	1983	2010
145	American Lady	Vanessa virginiensis	2	Jun. 3	Jul. 8	1985	2010
146	Painted Lady	Vanessa cardui	11	Jun. 24	Oct. 4	2010	2021
147	Red Admiral	Vanessa atalanta	16	Apr. 16	Aug. 6	1985	2020
149	White Admiral	Limnitis arthemis arthemis	13	Jun. 4	Aug. 2	1984	2022
151	Viceroy	Limnitis archippus	27	May 29	Sep. 18	1986	2022
154	Northern Pearly-Eye	Lethe anhedon	12	Jun. 10	Jul. 20	2006	2022
155	Eyed Brown	Lethe eurydice	16	Jun. 27	Jul. 26	1982	2022
156	Appalachian Brown	Lethe appalachia	1	Jul. 15	Jul. 15	2015	2015
157	Little Wood-Satyr	Megisto cymela	22	May 29	Jul. 15	1985	2022
158	Common Ringlet	Coenonympha tullia	30	May 29	Sep. 15	1979	2021
159	Common Wood-Nymph	Cercyonis pegala	5	Jul. 17	Aug. 12	1982	2009
167	Monarch	Danaus plexippus	54	May 25	Oct. 22	1985	2022

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