

**Environmental Impact Study for
4175 Strandherd Drive
Ottawa, Ontario**

2024-08-27

Final Report

KILGOUR & ASSOCIATES LTD.
www.kilgourassociates.com

Project Number: MYERS 1665.1



TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 ENVIRONMENTAL POLICY CONTEXT	2
2.1 THE PROVINCIAL POLICY STATEMENT, 2020	2
2.2 CITY OF OTTAWA OFFICIAL PLAN	2
2.3 <i>SPECIES AT RISK ACT</i> , 2002	2
2.4 <i>ENDANGERED SPECIES ACT</i> , 2007	3
2.5 <i>FISHERIES ACT</i> , 1985	3
2.6 <i>MIGRATORY BIRDS CONVENTION ACT</i> , 1994	3
2.7 <i>FISH AND WILDLIFE CONSERVATION ACT</i> , 1997	3
2.8 <i>CONSERVATION AUTHORITIES ACT</i> , 1990	4
3.0 PROPERTY IDENTIFICATION	4
4.0 METHODOLOGY.....	4
4.1 DESKTOP AND BACKGROUND DATA REVIEW	4
4.1.1 Agency Oversight and Consultation.....	4
4.1.2 Site Overview	4
4.1.3 Preliminary SAR Review	5
4.2 FIELD SURVEYS	5
4.2.1 Landforms and Soils.....	6
4.2.2 Surface Water, Groundwater and Fish Habitat	6
4.2.3 Vegetation	6
5.0 RESULTS	7
5.1 LANDFORMS, SOILS AND GEOLOGY	7
5.2 SURFACE WATER, GROUNDWATER AND FISH HABITAT	7
5.3 VEGETATION	9
5.3.1 Ecological Land Classification	9
5.4 INCIDENTAL WILDLIFE OBSERVATIONS	12
5.5 SPECIES AT RISK	12
5.6 SIGNIFICANT NATURAL HERITAGE FEATURES	13
5.7 SIGNIFICANT WILDLIFE HABITAT	13
5.7.1 Seasonal Concentration Areas	13
5.7.2 Rare Vegetation Communities or Specialized Habitat for Wildlife	13
6.0 DESCRIPTION OF THE PROPOSED PROJECT	14
7.0 IMPACT ASSESSMENT AND MITIGATION	14
7.1 SURFACE WATER	14
7.2 VEGETATION	16
7.3 SPECIES AT RISK	16
7.4 SIGNIFICANT NATURAL HERITAGE FEATURES	17



7.4.1 Significant Wildlife Habitat	17
7.5 GENERAL WILDLIFE MITIGATION	17
<hr/>	
8.0 CONCLUSION.....	18
9.0 CLOSURE	19
10.0 LITERATURE CITED.....	20
10.1 PERSONAL COMMUNICATION	22
<hr/>	
LITERATURE CITED.....	9

List of Figures

Figure 1 Site context	1
Figure 2 Isolated drain remnant on-site, looking south (photo taken May 8, 2024)	7
Figure 4 CUM1 community on-site, looking northwest (photo taken May 8, 2024)	9
Figure 5 Remnant drain fragment in the northwest corner of the Site, looking north (photo taken May 8, 2024).....	10
Figure 3 Existing site conditions	11

List of Tables

Table 1 Summary of Field Studies	6
Table 2 Listed Species with Potential to be Impacted by Future Site Works.....	12

List of Appendices

Appendix A Qualifications of Report Authors	
Appendix B Notes from City of Ottawa pre-consultation meeting	
Appendix C Species at Risk Screening and Assessment	
Appendix D Vascular Plant Species List	

List of Acronyms and Abbreviations

cm – centimeter
CRZ – critical root zone
DBH – Diameter at breast height
DFO – Department of Fisheries and Oceans (Fisheries and Oceans Canada)
ECCC – Environment and Climate Change Canada
e.g. – <i>exempli gratia</i>
EIS – Environmental Impact Study
ELC – Ecological Land Classification
ESC – erosion and sediment control
ESA – <i>Endangered Species Act</i>



FWCA – *Fish and Wildlife Conservation Act*

ha – hectare

i.e. – id est

KAL – Kilgour & Associates Ltd.

km – kilometre

m – metre

MBCA – *Migratory Birds Convention Act*

MECP – Ministry of Environment, Conservation, and Parks

MNRF – Ministry of Natural Resources and Forestry

NHIC – Natural Heritage Information Centre

PPS – Provincial Policy Statement

SAR – species at risk

SARA – *Species at Risk Act*

SWH – Significant Wildlife Habitat

SWM – stormwater management

TCR – Tree Conservation Report



1.0 INTRODUCTION

This report is an Environmental Impact Study (EIS) prepared by Kilgour & Associates Ltd. (KAL; Appendix A) on behalf Zena Investment Corporation in support of a proposed zoning bylaw amendment for a property located at 4175 Strandherd Drive, Ottawa, Ontario (the “Site”; Figure 1). This EIS includes the results from the required field studies and provides recommendations and mitigation measures to minimize impacts of future development on the natural heritage features located on and adjacent to the Site.

In the City of Ottawa, an EIS is required when development or site alteration is proposed in or adjacent to natural heritage features, as outlined in Section 4.8 of the Official Plan (City of Ottawa, 2021). The purposes of an EIS are to:

- Identify natural heritage features on or adjacent to the Site;
- Assess potential impacts of the proposed development to existing features; and
- Recommend mitigation measures to minimize or eliminate identified impacts.

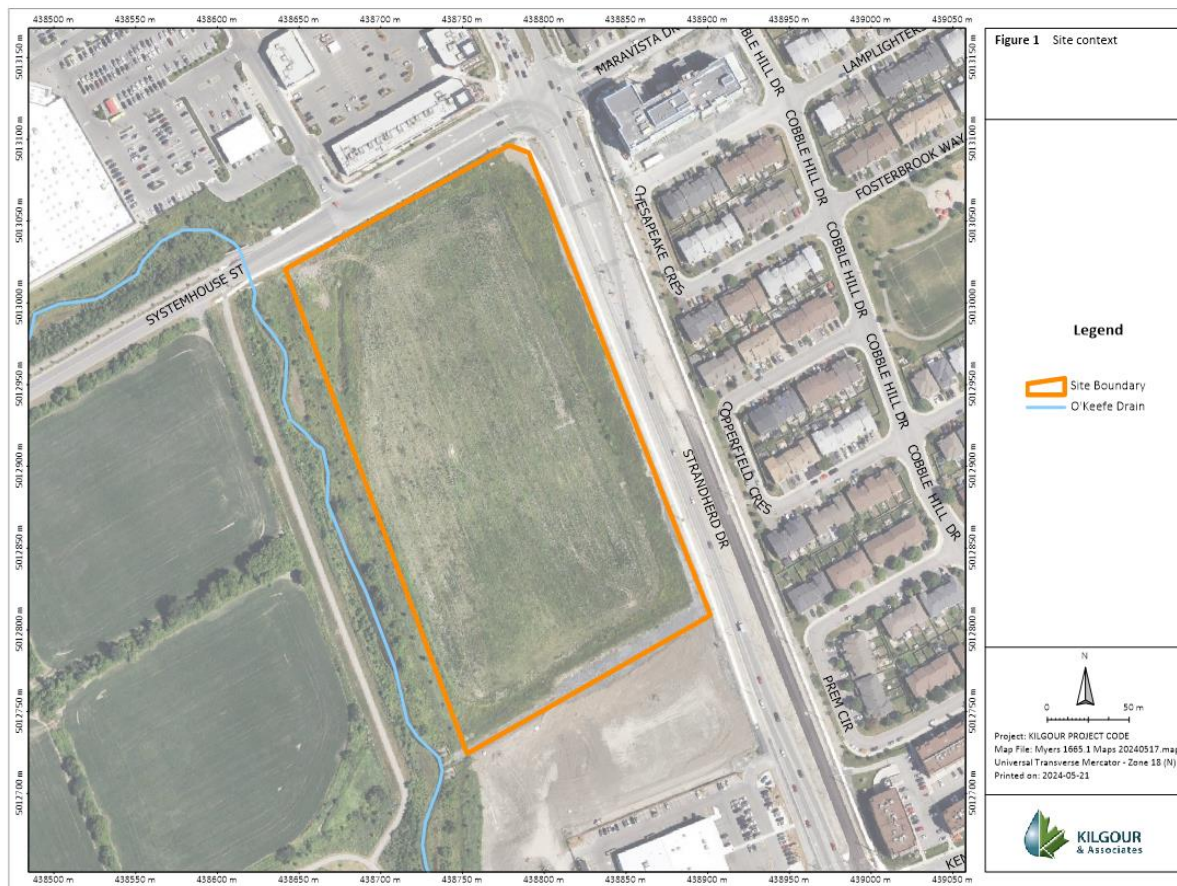


Figure 1 Site context



2.0 ENVIRONMENTAL POLICY CONTEXT

2.1 The Provincial Policy Statement, 2020

The Provincial Policy Statement (PPS) was issued under Section 3 of the *Planning Act* (Government of Ontario, 1990b). The current PPS came into effect May 1, 2020 (Government of Ontario, 2020). Natural features are afforded protections under Section 2.1 of the PPS, via the official plans and environmental policies of the municipal jurisdictions in which development is proposed. Protections may include maintenance, restoration, and improved function of diversity, connectivity, ecological function, and biodiversity of natural heritage systems. These protections restrict development and site alteration in significant natural areas (e.g., significant habitat of endangered and threatened species, significant wetlands, significant coastal wetlands, significant woodlands, significant valleylands, significant wildlife habitat (SWH), Areas of Natural and Scientific Interest (ANSI), and fish habitat) unless it can be demonstrated that there will be no negative effects on the features and ecological functions of those natural areas. Technical guidance for implementing the natural heritage policies of the PPS is found within the second edition of the *Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005* (NHRM; Ministry of Natural Resources (MNR, 2010). This manual recommends the approach and technical criteria for protecting natural heritage features and areas in Ontario. This manual further addresses the width of adjacent lands to be considered when evaluating potential negative impacts, such as areas within 120 m of protected natural heritage features.

2.2 City of Ottawa Official Plan

The City of Ottawa Official Plan (2021) provides direction for future growth in the City and is a policy framework to guide physical development to 2031 in accordance with the PPS. The Official Plan was first approved in 2003 and is typically updated every five years. The Official Plan includes a Natural Heritage Features map (Schedule C12), providing additional information on wetlands, watercourses, and wooded areas within the City boundaries (2021).

2.3 *Species at Risk Act, 2002*

The federal *Species at Risk Act* (SARA; Government of Canada, 2002) is administered by Environment and Climate Change Canada (ECCC) and provides direction to protect and ensure the survival of wildlife species in Canada. The purpose of the SARA is to prevent populations of wildlife from becoming Extirpated, Endangered, or Threatened, provide recovery Endangered or Threatened species, and to manage other species to prevent them from becoming Endangered or Threatened.

All species listed on Schedule 1 of SARA are afforded protection on federal lands. Aquatic species and species of migratory birds protected by the *Migratory Birds Convention Act* (MBCA; (Government of Canada, 1994) and listed as Endangered, Threatened, or Extirpated under Schedule 1 of SARA are protected wherever they occur in Canada, regardless of land ownership. SARA protections do not typically apply for other species groups on non-federal properties. However, the Federal Minister of ECCC can impose SARA protections on private projects where habitat is deemed “...necessary for the survival or recovery of the species...” in the area of concern.



2.4 *Endangered Species Act, 2007*

The provincial *Endangered Species Act* (ESA; Government of Ontario, 2007) is administered by the Ministry of Environment, Conservation, and Parks (MECP) and provides protection for species at risk (SAR) and their habitat. The ESA states that it is illegal to harm the habitat of species listed as Extirpated, Endangered, and Threatened. It is also illegal to kill, harm, harass, possess, transport, buy, or sell Extirpated, Endangered, and Threatened species, whether it is living or dead. Species listed as Endangered, Threatened, or Extirpated and their habitats (e.g., areas essential for breeding, rearing, feeding, hibernation, and migration) are automatically afforded legal protection under the ESA.

2.5 *Fisheries Act, 1985*

The federal *Fisheries Act* (Government of Canada, 1985) is administered by Fisheries and Oceans Canada (DFO) and provides protections to fish, fish habitat, and fisheries. Specifically, the *Fisheries Act* in its current version provides: 1) Protection for all fish and fish habitat; 2) Prohibition against the "harmful alteration, disruption or destruction of fish habitat"; and 3) Prohibition against causing "the death of fish by means other than fishing".

Projects with a scope that does not fall within DFO's defined standards and codes of practice require submission of a request for review to DFO.

2.6 *Migratory Birds Convention Act, 1994*

Nesting migratory birds are protected under the MBCA (Government of Canada, 1994). No work is permitted that would result in the destruction of active nests or the wounding or killing of bird species protected under the MBCA and/or associated regulations (e.g., SARA). The "incidental take" of migratory birds and the disturbance, destruction, or taking of the nest of a migratory bird is prohibited. "Incidental take" is the killing or harming of migratory birds due to actions that are not primarily focused on taking migratory birds (e.g., economic development) and no permits exist for the incidental take of migratory birds or their nest/eggs as a result of activities that are not focused on taking migratory birds. These prohibitions apply throughout the year. The Government of Canada has compiled nesting calendars that apply across Canada that can be used to greatly reduce the risk of harming/destroying active nests by ensuring works that may impact nests are performed outside of the nesting period.

2.7 *Fish and Wildlife Conservation Act, 1997*

The provincial *Fish and Wildlife Conservation Act* (FWCA; Government of Ontario, 1997) governs the hunting and trapping of a variety of wildlife including mammals, birds, reptiles, amphibians, and fish in Ontario, thereby facilitating the protection of wildlife and their habitat. The FWCA outlines the prohibition of hunting or trapping specially protected species and the requirement for provincially issued licenses for the hunting or trapping of "furbearing" or "game" animals. Examples of specifically protected animals include, for example, Southern Flying Squirrel (*Glaucomys volans*), Northern Harrier (*Circus cyaneus*), American Kestrel (*Falco sparverius*), Blue Jay (*Cyanocitta cristata*), Midland Painted Turtle (*Chrysemys picta marginata*), Northern Watersnake (*Nerodia sipedon*), and Gray Treefrog (*Hyla versicolor*). In particular, raptors that are not protected under the MBCA (including Peregrine Falcon) are protected under the FWCA.



2.8 *Conservation Authorities Act, 1990*

Conservation Authorities were created to address erosion, flooding, and drought concerns regionally by managing at the watershed level. Conservation Authorities were given the ability to regulate under Section 28 of the *Conservation Authorities Act* (Government of Ontario, 1990a). The Act provides mechanisms to regulate works and site alterations that have potential to affect erosion, flooding, land conservation, and alterations to waterbodies within their jurisdiction. It is the obligation of all Conservation Authorities to implement Ontario Regulations 42/06 and 146/06 to 182/06 *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses* under Section 28 of the *Conservation Authorities Act* for relevant works.

3.0 PROPERTY IDENTIFICATION

The Site is approximately 5.27 ha in size and is located at 4175 Strandherd Drive, Ottawa, Ontario (Lat: 45.266868°N and Long: -75.780736°W; Figure 1). It is located west of Strandherd Drive and south of Systemhouse Street in Barrhaven, Ottawa. The Site is currently zoned as Business Park Industrial (IP), and it comprises an undeveloped field. The O’Keefe Drain and a multi-use path are situated adjacent to the west property boundary.

The Site is bordered by:

- Systemhouse Street and commercial properties to the north;
- Strandherd Drive and residential properties to the east;
- existing commercial properties and Dealership Drive to the south; and,
- The O’Keefe Drain, a multi-use path, vacant lands, and undeveloped forested lands to the west.

4.0 METHODOLOGY

4.1 Desktop and Background Data Review

4.1.1 Agency Oversight and Consultation

The Site is located within the jurisdictions of the City Ottawa and Rideau Valley Conservation Authority (RVCA). The Client engaged the City of Ottawa in a pre-consultation meeting on December 18, 2023, to determine the scope of the EIS (Appendix B). Pre-consultation comments identified that the need for this EIS was triggered by the proximity to the O’Keefe Drain and the potential for species at risk and/or their habitat to occur on the Site.

4.1.2 Site Overview

Aerial imagery from Google Earth and the City of Ottawa’s geoOttawa system was used to develop preliminary mapping of existing site features and landcover and to inform how the Site may be divided into vegetation communities.



4.1.3 Preliminary SAR Review

The review of existing information included a preliminary SAR screening for species listed under the federal SARA and provincial ESA. The screening functions to identify SAR having some potential to be in the broader vicinity of the Site. The screening was completed following the *Draft Client's Guide to Preliminary Screening for Species at Risk* (MECP, 2019a; species identified through the screening process are reviewed in Appendix C). The MECP previously conducted reviews of Preliminary Screenings, but no longer offers this service. The Preliminary Screening considered data sources including:

- Species at Risk in Ontario (SARO; Ministry of Environment, Conservation, and Parks (MECP, 2024));
- Species at Risk Public Registry (Government of Canada, 2024);
- Natural Heritage Information Centre (NHIC; Ministry of Natural Resources, and Forestry (MNRF, 2024c);
- Land Information Ontario (MNRF, 2024b);
- Aquatic Species at Risk Map (DFO, 2023);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019);
- Ontario Breeding Birds Atlas (Birds Canada et al., 2009);
- Ontario Butterfly Atlas (Toronto Entomologists' Association, 2024);
- eBird (The Cornell Lab of Ornithology, 2024);
- iNaturalist (California Academy of Sciences and National Geographic Society, 2024);
- Bumble Bee Watch (Wildlife Preservation Canada et al., 2024);
- Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tri-colored Bat (*Perimyotis subflavus*) in Ontario (Humphrey & Fotherby, 2019);
- Recovery Strategy for the Eastern Small-footed Myotis (*Myotis leibii*) in Ontario (Humphrey, 2017);
- Fish ON-Line (MNRF, 2024a);
- Ontario Geotechnical Boreholes (Ontario Ministry of Mines, 2012);
- O'Keefe Drain Environmental and Stormwater Management Plan (CH2MHill, 2013).

4.2 Field Surveys

KAL undertook a field program in May 2024 comprising two Ecological Land Classification surveys approximately one week apart during suitable spring and leaf-on conditions (ELC; Table 1). The 2024 field surveys are detailed in the sections below.



Table 1 Summary of Field Studies

Date	Purpose	Conditions	Personnel
May 8, 2024	<ul style="list-style-type: none">• ELC #1	<ul style="list-style-type: none">• 11°C• Rain• Wind 25 km/h NE	<ul style="list-style-type: none">• Kesia Miyashita
May 16, 2024	<ul style="list-style-type: none">• ELC #2	<ul style="list-style-type: none">• 21°C• Mostly sunny• Wind 6 km/h N	<ul style="list-style-type: none">• Kesia Miyashita

4.2.1 Landforms and Soils

Existing data on soils in the vicinity of the Site were obtained from the Ontario Ministry of Agriculture, Food and Rural Affairs' AgMaps (OMAFRA, 2023) and the Ontario Geotechnical Boreholes Data collected in 2001 (Ontario Ministry of Mines, 2012). These data were supplemented by soil cores taken in the field using a 120 cm soil auger at select locations within the Site.

4.2.2 Surface Water, Groundwater and Fish Habitat

Technical reports describing the O'Keefe Drain, including the O'Keefe Drain Environmental Management Plan (EMP), situated to the west of the Site, were reviewed to provide additional site context. Publicly available databases were reviewed for indications of other watercourses or wetlands on the Site. These data were supplemented by soil cores taken in the field to detect the presence of any wetland soils on the Site.

4.2.3 Vegetation

4.2.3.1 Ecological Land Classification

Vegetation communities on the Site were based on standard ELC methods for Ontario (Lee et al., 1998). The ELC methodology provides a consistent approach to identify, describe, and map vegetation communities or physiographic features on the landscape based on dominant plant species and soil composition. This method results in a standardized description of each vegetation community to capture the natural diversity and variability of communities within a site and to provide insight into available habitat and the type of species that may be present. More specifically, the classifications from ELC provide a basis for determining whether potential habitat for a given SAR or other ecological value may be present.

The desktop review of available aerial imagery and preliminary field visits informed how the Site was divided into vegetation communities based on variation in land cover, topography, and vegetation structure. During the ELC survey on May 8, the dominant plant species were recorded within each proposed ecosite in the field to further divide ecosites into vegetation types (the finest resolution in ELC), where possible. A subsequent ELC survey was conducted on May 16, 2024 to refine vegetation type boundaries and record additional widespread or dominant plant species. Representative photos of each ELC unit on the Site were taken and are included with the community descriptions in this report.



5.0 RESULTS

5.1 Landforms, Soils and Geology

The Site is located within the Dalhousie soil association (Schut & Wilson, 1987). Soils in this association are characterized as predominantly fine-textured and noncalcareous, comprising silty clay or clay textures. Surface soils generally have lower clay content and are characterized as silty clay loam or clay loam (Schut & Wilson, 1987). In the vicinity of the Site, soils are characterized as predominantly poorly drained and the landscapes are generally level, with slopes from 0% to 2% (Schut & Wilson, 1987). Existing borehole data in the vicinity of the Site characterized soils as silt, sand, and clay to depths of 3-4 m, overlaying firm sand and stiff clay over limestone bedrock (Ontario Ministry of Mines, 2012).

Soil cores taken as part of the ELC soils on the Site were found to be generally consistent with the regional soil data. Soil cores taken on-site comprised very stiff silty clay extending to depths of at least 60 cm.

5.2 Surface Water, Groundwater and Fish Habitat

The Site does not contain any surface water features, including Provincially Significant Wetlands, unevaluated wetlands, or watercourses. The O'Keefe Drain is situated adjacent to the west property boundary, approximately 20 m from the property line. The western property boundary of the Site represents the extent of the O'Keefe Drain corridor. Historical imagery indicates that the O'Keefe Drain previously extended through the northwest corner of the Site; however, in approximately 2015, it was realigned to its present course. The northwest corner of the Site supports a remnant of the feature (Figure 2). This remnant was confirmed in the field to be fully isolated from other surface water features and, as such is not considered a headwater feature. It did include areas of standing water approximately 20 cm deep in May 2024.



Figure 2 Isolated drain remnant on-site, looking south (photo taken May 8, 2024)



The O'Keefe Drain Environmental Management Plan (EMP; prepared by CH2MHill, 2013) describes the applicable setbacks relevant to the O'Keefe Drain as guided by the City of Ottawa's Official Plan and Jock River Reach One Subwatershed Study.

Per the City's current OP Policy 4.9.3:

- 1) *The minimum setback from surface water features shall be the development limits as established by a Council-approved watershed, subwatershed or environmental management plan.*

However,

- 2) *Where a Council-approved watershed, subwatershed or environmental management plan does not exist, or provides incomplete recommendations, the minimum setback from surface water features shall be the greater of the following:*
 - a. *Development limits as established by the conservation authority's hazard limit, which includes the regulatory flood line, geotechnical hazard limit and meander belt;*
 - b. *Development limits as established by the geotechnical hazard limit in keeping with Council-approved Slope Stability Guidelines for Development Applications;*
 - c. *30 metres from the top of bank, or the maximum point to which water can rise within the channel before spilling across the adjacent land; and*
 - d. *15 metres from the existing stable top of slope, where there is a defined valley slope or ravine*

The Jock River Reach One Subwatershed Study recommends that:

- *No encroachment should be permitted within the meander belt width;*
- *Setback should be the greater of the 1:100 year flood line elevation, or meanderbelt, or aquatic setback; and,*
- *Terrestrial linkage and pathway requirements should be considered in defining setback limits.*

For this project, the Jock River Reach One Subwatershed Study, and the City's current OP are thus considered within the EMP. The 46 m corridor (including pathway) for the O'Keefe Drain recommended within the O'Keefe Drain EMP incorporates a minimum 30 m channel width from top-of-slope to top-of-slope, a 5 m setback from top-of-slope to edge of corridor (tableland), and a 6m pathway block including a 3 m pathway outside of the setback. The 46-metre corridor is captured by the western property boundary.

A stormwater management pond is located approximately 130 m southwest of the Site. The nearest Provincially Significant Wetland is the Stony Swamp Wetland Complex, located approximately 2 km north of the Site. The Jock River is approximately 1.8 km south of the Site.



5.3 Vegetation

5.3.1 Ecological Land Classification

A single landcover or ELC unit was delineated on the Site (Figure 5). The majority of the Site is characterized as a disturbed field, comprising relatively level terrain and dominated by exotic forb species. The north and east edges of the Site slope downward from Systemhouse Street and Strandherd Drive, respectively. The northwest corner of the unit supported the disconnected drain remnant, with grass-dominated banks and wetland-associated species within the feature. The disturbed field ELC unit is described in greater detail below. Dominant species are indicated in the descriptions below, while other widespread and notable species are listed in Appendix D.

5.3.1.1 Mineral Cultural Meadow (CUM1)

The Site is characterized as a highly disturbed Mineral Cultural Meadow (CUM1) vegetation community (Figure 3). The Site is regularly tended and as such has minimal groundcover. Dominant species within this community included Common Dandelion (*Taraxacum officinale*), Wild Parsnip (*Pastinaca sativa*), and Reed Canary Grass (*Phalaris arundinacea*). The Site supported evidence of grass cover from past seasons in the form of litter; however, forbs were the dominant species among new growth over much of the Site during the spring field surveys. Grasses, particularly Reed Canary Grass, were relatively more abundant along the edges of the Site at Strandherd Drive and Systemhouse Street.



Figure 3 CUM1 community on-site, looking northwest (photo taken May 8, 2024)



The northwest corner of the Site, situated within the CUM1 ELC unit, contains an inclusion from the isolated portion of the former alignment of the O’Keefe Drain. It became isolated following the realignment of the O’Keefe Drain in approximately 2015. It is characterized by steep banks dominated by Reed Canary Grass, Common Dandelion, and Wild Red Raspberry (*Rubus idaeus*). Occasional small (DBH <10 cm) Manitoba Maple (*Acer negundo*) saplings were also observed on the banks. Within the channel itself were areas of standing water less than 20 cm deep. Common Cattail (*Typha latifolia*) was observed corresponding to the areas of standing water.



Figure 4 Remnant drain fragment in the northwest corner of the Site, looking north (photo taken May 8, 2024)



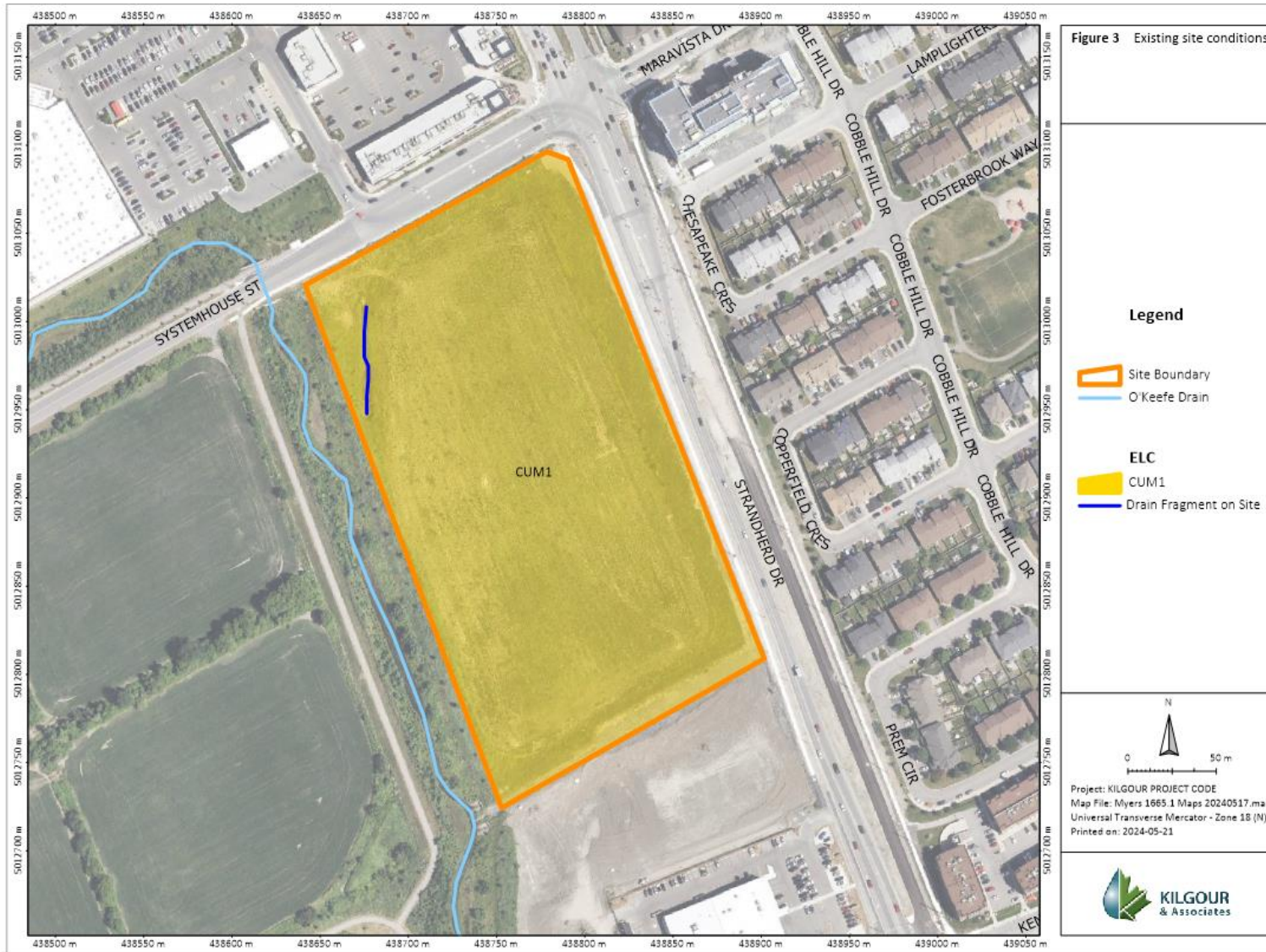


Figure 5 Existing site conditions



5.4 Incidental Wildlife Observations

No formal wildlife surveys were completed for this Site. Incidental observations during the site visits included the following species: Red-winged Blackbird (*Agelaius phoeniceus*), Song Sparrow (*Melospiza melodia*), Yellow Warbler (*Setophaga petechia*), American Goldfinch (*Spinus tristis*), American Crow (*Corvus brachyrhynchos*), Savannah Sparrow (*Passerculus sandwichensis*), Ring-billed Gull (*Larus delawarensis*), and a species of Bumble Bee (*Bombus* sp.). No species observed during field studies are not regionally significant or listed as Species at Risk under the ESA or SARA.

5.5 Species at Risk

The background review of existing observation records for species listed as Endangered, Threatened, or Special Concern under SARA and/or ESA identified 37 species that had an element occurrence record within 10 km (Appendix C). The list of identified species was assessed to estimate the likelihood of their occurrence on the Site and/or their potential to be negatively impacted by future works on-site. The SAR assessment considered:

- Species habitat requirements;
- The habitat potential provided by the Site generally and the proximity of such possible habitats to future work areas; and
- The likely proximity of individuals to project areas (considering existing observational records and Site conditions).

Of the 37 species initially considered, six were identified as having some potential to interact with the future development of the Site (Table 2). They are further described below.

Table 2 Listed Species with Potential to be Impacted by Future Site Works

Common Name	Taxonomic Name	ESA Status	SARA Status	Potential to Interact with Future Development of the Site
Birds				
Common Nighthawk	<i>Chordeiles minor</i>	Special Concern	Special Concern	Moderate
Amphibians				
Western Chorus Frog	<i>Pseudacris triseriata</i>	Not Listed	Threatened (Great Lakes-St. Lawrence population)	Moderate
Reptiles				
Eastern Milksnake	<i>Lampropeltis triangulum</i>	Not Listed	Special Concern	Moderate
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Not Listed	Special Concern	Moderate
Arthropods				
American Bumble Bee	<i>Bombus pensylvanicus</i>	Special Concern	Special Concern	Moderate
Yellow-banded Bumble Bee	<i>Bombus terricola</i>	Special Concern	Special Concern	Moderate



All of the species listed in Table 2 are listed provincially as Special Concern or Not Listed (at the provincial level); therefore, they are not directly afforded protections under the ESA. As such, they are not considered “SAR” within this report but instead are addressed through other wildlife considerations.

5.6 Significant Natural Heritage Features

The Site does not contain significant woodlands, significant valleylands, or greenspace linkages as defined by the City of Ottawa (City of Ottawa, 2023). The Site does not contain significant wetlands, significant coastal wetlands, ANSIs (life/earth science), or fish habitat. The Site does not include any areas designated as Urban Natural Areas by the City of Ottawa (Muncaster Environmental Planning Inc. & Brunton Consulting Services, 2005). The nearest UNAs are #50 and #53, located approximately 350 m west and 590 m north, respectively. The Site is not connected to either UNA.

5.7 Significant Wildlife Habitat

The Significant Wildlife Habitat (SWH) Criteria Schedule for Ecoregion 6E (CITE) identifies four main types of SWH: seasonal concentration area, rare vegetation communities, specialized habitat for wildlife, and habitats of species of conservation concern.

5.7.1 Seasonal Concentration Areas

Seasonal concentration areas include stopover and staging areas for waterfowl, shorebirds, landbirds, and butterflies, wintering areas for raptors, bat hibernacula, bat maternity colonies, wintering areas for turtles, reptile hibernacula, breeding habitats for colonially-nesting birds, and deer yarding and congregation areas.

No obvious signs or evidence of use as a seasonal concentration area were observed during field surveys, and none are likely to occur on the Site.

5.7.2 Rare Vegetation Communities or Specialized Habitat for Wildlife

Rare Vegetation Communities

Rare vegetation communities typically include those that have developed on cliff and talus slopes, sand barrens, shallow soils over limestone bedrock (alvar), old growth forest, savannahs, and tallgrass prairies. No rare vegetation communities were observed on the Site.

Specialized Wildlife Habitat

Specialized wildlife habitat includes waterfowl nesting areas, Bald Eagle and Osprey nesting, foraging and perching habitat, woodland raptor nesting habitat, turtle nesting areas, seeds and springs, woodland or wetland amphibian breeding habitat, and woodland area-sensitive bird breeding habitat. No candidate specialized wildlife habitats were identified or observed on the Site.

Habitats of Species of Conservation Concern

Habitats of species of conservation concern include marsh breeding bird habitat, open country bird habitat, shrub/early successional bird breeding habitat, terrestrial crayfish, and special concern and rare wildlife



species. Habitats of species of conservation concern do not include habitats of Endangered or Threatened species as identified by the ESA. Our background review did not identify the presence of marsh bird breeding habitat, open country bird habitat, shrub/early successional bird breeding habitat or terrestrial crayfish.

MNRF (2015a) defines candidate SWH for special concern and rare wildlife species as when an element occurrence is identified within a 1 or 10 km grid and suitable candidate habitat is found onsite based on ELC. As such, the Site meets the definition of Candidate SWH for special concern and rare wildlife species for one bird species (Common Nighthawk). Common Nighthawk (nearest record from approximately 850 m from the Site). could potentially use the CUM1 community as nesting or foraging habitat.

6.0 DESCRIPTION OF THE PROPOSED PROJECT

The Site is currently undeveloped and zoned as Business Park Industrial (IP). The conceptual site plan shows a portion of the Site developed with an automotive dealership and the balance of the Site developed for retail commercial uses. Specific development concepts have not yet been established and thus cannot be depicted in this EIS.

The 46 m O’Keefe Drain corridor has already been retained as per the O’Keefe Court EMP and is captured by the western Site boundary. Future works within the corridor include consideration of planting native and non-invasive species. As this work is on City land and off the proponent’s property, this work will be assumed by the City. A soft landscaped edge along the western edge of the Site should be included in future Landscape Plans to improve the O’Keefe Drain as per the O’Keefe Drain EMP.

7.0 IMPACT ASSESSMENT AND MITIGATION

Future development may encompass the entire Site, adhering to required setbacks from the O’Keefe Drain, as required. Apart from the O’Keefe Drain, the Site is situated within a highly developed context, surrounded by roadways and commercial and residential developments. Development of the Site may therefore affect features present on the Site but is not anticipated to impact natural heritage features in the vicinity of the Site.

7.1 Surface Water

No impact to the O’Keefe Drain is anticipated. The setback requirement from the O’Keefe Drain, as per the O’Keefe Drain EMP, of a 46 m corridor, should be respected in future Site Plans. The drain fragment onsite is not defined as a watercourse and does not provide connectivity with other water bodies up- or downstream of the Site. As such, setbacks from this fragment are not required.

To protect the broader catchment area of the O’Keefe Drain during future development of the Site, an erosion and sediment control (ESC) plan will be required. The ESC plan should include:

- A multi-faceted approach to provide ESC;
- Silt fencing paired with sturdy construction fence along the project perimeter to protect adjacent habitats, including the O’Keefe Drain. This fencing can also act as a wildlife exclusion measure for



smaller and less mobile animals that may occupy or traverse through the Site, such as turtles, snakes, and amphibians;

- Regularly inspecting and maintaining the ESC measures during all phases of the project;
- Retention of existing vegetation and stabilization of exposed soils with native vegetation where possible;
- Keeping the ESC measures in place until all disturbed ground has been permanently stabilized;
- Using biodegradable ESC materials where possible and removing all exposed non-biodegradable ESC materials once the Site is stabilized;
- Limiting the duration of soil exposure and phasing project works;
- Limiting the size of disturbed areas by minimizing nonessential clearing and grading;
- Minimizing the total slope length and the gradient of disturbed areas;
- Refueling of machinery should occur >30 m from surface water features and all machinery will remain on the project-side of silt and construction fence;
- Maintaining overland sheet flow and avoiding concentrated flows;
- Storing/stockpiling materials >30 m away from the wetland and other surface water features;
- Fencing or tarping all stockpiled material (<150 millimeter gravel) during the turtle nesting period (late May to early July) (MECP, 2021a) to prevent turtles from nesting in stockpiles. If the stockpile is within a properly fenced area (i.e., the project footprint) additional fencing is not necessary for turtle management, but is recommended for ESC if piles will be left unused for extended periods;
- Regularly inspecting the Site for signs of sedimentation during all phases of work and taking corrective action if required;
- Developing a response plan to be implemented immediately in the event of a spill of a deleterious substance;
- Keeping an emergency spill kit on the Site;
- Stopping work and containing deleterious substances to prevent dispersal;
- Reporting any spills of sewage, oil, fuel, or other deleterious material whether near or directly into a surface water feature;



7.2 Vegetation

It is anticipated that extensive vegetation clearing will be required to accommodate future development; however, existing tree cover on the Site is minimal and confined to the west side of the site. A soft landscaped edge along the western Site boundary should be proposed in future Site Plan/ Landscape Plans to improve O’Keefe Drain corridor function as per the EMP. The following general protection measures are recommended during site preparation and construction to limit impacts to trees:

- Tree removal on the Site should be limited to the greatest extent possible and only remove trees necessary to accommodate construction and development;
- To minimize impacts to retained trees during development:
 - Erect a fence beyond the critical root zone (CRZ; i.e., 10x the diameter at breast height) of trees to be retained. The fence should be highly visible (orange construction fence) and paired with erosion control fencing. Pruning of branches is recommended in areas of potential conflict with construction equipment;
 - Do not place any material or equipment within the CRZ of trees;
 - Do not attach any signs, notices, or posters to any trees;
 - Do not raise or lower the existing grade within the CRZ of trees without approval;
 - Tunnel or bore when digging within the CRZ of a tree;
 - Do not damage the root system, trunk, or branches of any remaining trees; and
 - Ensure that exhaust fumes from all equipment are not directed toward any tree’s canopy.
- Ensure equipment is clean prior to vegetation removal to avoid introducing invasive species to the Site, and clean equipment prior to leaving Site to avoid spreading the aforementioned invasive species elsewhere; and
- Incorporate native plants into Site landscaping to the extent possible for the benefit of local wildlife and pollinators (e.g., milkweed for Monarch). It is recommended that plantings encompass a variety of native flowering species with different blooming periods to provide varied food sources for native pollinators. Further, the use of herbicides should be limited within and surrounding the planted habitat.

7.3 Species at Risk

No SAR listed as Threatened or Endangered under the ESA were considered to have a moderate or higher potential to interact with future development on the Site (Appendix C). As such, no negative impacts to Threatened or Endangered SAR are anticipated in future development of the Site. While we do not anticipate the Site to directly support any SAR, it is recognized that transient occurrence of listed wildlife species is a



possibility, albeit very limited. The potential for transient wildlife presence (of listed species or otherwise) can be mitigated through the general wildlife mitigation measures provided in Section 7.5.

7.4 Significant Natural Heritage Features

The Site does not contain significant natural heritage features, as defined by the Province or City. Given the highly developed, urban nature of the surrounding lands, there are no significant natural heritage features within 120 m of the Site.

7.4.1 Significant Wildlife Habitat

The Site meets the qualifying features for candidate SWH for Special Concern and Rare Wildlife Species (i.e., Common Nighthawk). The preliminary SAR screening identified Common Nighthawk records approximately 850 m from the Site).

Common Nighthawks nest in a variety of open sites, including fields with little ground vegetation, although they tend to occupy more natural sites (COSEWIC, 2018). Microhabitat requirements include open sites on well-drained substrates with shade to offer protection for the young from predators and sun. The availability of suitable roosting sites that provide unobstructed flight paths, shade from the sun, and camouflage, may be another habitat requirements (COSEWIC, 2018). While the Site provides open areas for nesting through regular mowing, the lack of suitable microhabitats suggests that the potential for the Site to be deemed “significant” habitat is limited.

7.5 General Wildlife Mitigation

The following mitigation measures shall be implemented during future construction to generally protect wildlife:

- Areas shall not be altered or cleared during sensitive times of year for wildlife unless mitigation measures are implemented and/or the habitat has been inspected by a qualified Biologist;
 - Clearing of trees and/or vegetation should not take place April 1 to September 30 inclusive unless a qualified Biologist has determined that no birds are nesting or suitable bat roosting trees are present. The bird nest sweep would be valid for five days:
 - The MBCA protects the nests and young of migratory breeding birds in Canada. The timing of nesting for birds in the area spans April 1 to August 31 (Government of Canada, 1994);
 - The Site contains suitable foraging habitat for bats, however, due to the lack of roosting habitat on or adjacent to the Site, it is not expected that SAR bats are heavily utilizing the Site. To eliminate and mitigate any possibility of impacts to at-risk bats directly, tree clearing is recommended to take place outside of the roosting season (April 1 to September 30 inclusive; (MNRF, 2017)
- Due to the proximity to the O’Keefe Drain, temporary exclusion fence should be installed prior to the turtle active season (April through October) (MECP, 2021a) and should follow recommendations in



Reptile and Amphibian Exclusion Fencing: Best Practices (MECP, 2021b). Temporary exclusion fence (e.g., silt fence) may be paired with ESC measures and should be installed along the perimeter of the project area. Temporary exclusion measures should be inspected and repaired weekly by a qualified biologist during the turtle active season;

- If a turtle is encountered, the project biologist should be contacted for advice. If a turtle is in immediate harm's way, it should be safely and humanely relocated to appropriate habitat. Encounters with Threatened and Endangered species should be reported to the MECP within 24 hrs.
- Develop an ESC plan. Install sediment control fence and inspect/ maintain it periodically and after large (>15mm) rain events to ensure its integrity and continued function;
- Ensure that a qualified biologist develops a wildlife management plan for the construction process and delivers environmental compliance and biodiversity training to all site workers to implement the plan. The plan should include (but not be limited to) requirements to:
 - Utilize silt fence paired with sturdy construction fence along the project perimeter and around soil stockpiles to serve as a wildlife exclusion measure to prevent smaller animals from accessing/utilizing temporary habitats on the Site (e.g., prevent turtles from nesting in stockpiles on the Site);
 - Check the entire work site for wildlife prior to beginning work each day;
 - Do not harm, feed, or unnecessarily harass wildlife;
 - Manage waste to prevent attracting wildlife to the work site. Effective mitigation measures include litter prevention and keeping all trash secured in wildlife-proof containers and promptly removing it from the work site, especially during warm weather;
 - Enforce a speed limit of 20 km/h during the active season (April 1 to September 30) to reduce wildlife mortality; and
 - Manage stockpiles and equipment at the work site to prevent wildlife from being attracted to artificial habitat. Cover and contain any piles of soil, fill, brush, rocks, and other loose materials and cap ends of pipes where necessary to keep wildlife out. Ensure that trailers, bins, boxes, and vacant buildings are secured at the end of each workday to prevent access by wildlife.

8.0 CONCLUSION

This report provides a set of mitigation measures for implementation in the design and construction of the proposed development. The assessment of the potential for impacts to the natural heritage system is based on the implementation of these mitigation measures. It is our professional opinion that the proposed development is not anticipated to have negative impacts to existing natural features or ecological functions if the recommended mitigation measures provided in this report are implemented.



9.0 CLOSURE

This report was prepared for exclusive use by Zena Investment Corporation and may be distributed only by Zena Investment Corporation. Questions relating to the data and interpretation can be addressed to the undersigned.

Respectfully submitted,

KILGOUR & ASSOCIATES LTD.



Kesia Miyashita, MSc

Senior Biologist

E-mail: kmiyashita@kilgourassociates.com

16-2285 St. Laurent Blvd, Ottawa, ON, K1G 4Z6

Office: 613-260-5555



Nick Moore, BSc

Project Manager

E-mail: [nmoore\(MECP, 2024\)@kilgourassociates.com](mailto:nmoore(MECP, 2024)@kilgourassociates.com)

16-2285 St. Laurent Blvd, Ottawa, ON, K1G 4Z6

Office: 613-260-5555

CC: Bruce Kilgour (KAL), Anthony Francis (KAL)



10.0 LITERATURE CITED

- Birds Canada, Canadian Wildlife Service (Environment and Climate Change Canada), Ministry of Natural Resources and Forestry – Government of Ontario, Ontario Field Ornithologists (OFO), & Ontario Nature. (2009). *Ontario Breeding Birds Atlas*. <https://www.birdsontario.org/jsp/datasummaries.jsp>
- California Academy of Sciences and National Geographic Society. (2024). *iNaturalist*. iNaturalist. <https://www.inaturalist.org/>
- City of Ottawa. (2021). *City of Ottawa Official Plan*. <https://ottawa.ca/en/planning-development-and-construction/official-plan-and-master-plans/official-plan#>
- City of Ottawa. (2023). *Greenspace Master Plan*. <https://ottawa.ca/en/planning-development-and-construction/official-plan-and-master-plans/greenspace-master-plan>
- COSEWIC. (2018). *COSEWIC assessment and status report on the Common Nighthawk* *Chordeiles minor* in Canada (p. xi + 50 pp). Committee on the Status of Endangered Wildlife in Canada. <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/common-nighthawk-2018.html>
- DFO. (2023). *Aquatic Species at Risk Map*. Fisheries and Oceans Canada (Previously Department of Fisheries and Oceans, “DFO”). <https://www.dfo-mpo.gc.ca/species-especies/sara-lep/map-carte/index-eng.html>
- Government of Canada. (1985). Fisheries Act, 1985 (R.S.C., 1985, c. F-14). <https://laws-lois.justice.gc.ca/eng/acts/f-14/>
- Government of Canada. (1994). Migratory Birds Convention Act, 1994 (S.C. 1994, c. 22). <https://laws-lois.justice.gc.ca/eng/acts/m-7.01/>
- Government of Canada. (2002). Species at Risk Act. 2002. S.C. 2002, c. 29. <https://laws.justice.gc.ca/eng/acts/S-15.3/>
- Government of Canada. (2024). *Species at Risk Public Registry*. <https://species-registry.canada.ca/index-en.html#/species?sortBy=commonNameSort&sortDirection=asc&pageSize=10>
- Government of Ontario. (1990a). Conservation Authorities Act, R.S.O. 1990, c. C.27. <https://www.ontario.ca/laws/statute/90c27>
- Government of Ontario. (1990b). Planning Act, R.S.O. 1990, c. P.13. <https://www.ontario.ca/laws/statute/90p13>
- Government of Ontario. (1997). Fish and Wildlife Conservation Act, 1997, S.O. 1997, c. 41. <https://www.ontario.ca/laws/statute/97f41>
- Government of Ontario. (2007). Endangered Species Act. 2007. S.O. 2007, c.6. <https://www.ontario.ca/laws/statute/07e06>



- Government of Ontario. (2020). *Provincial Policy Statement, 2020—Under the Planning Act*.
<https://files.ontario.ca/mmah-provincial-policy-statement-2020-accessible-final-en-2020-02-14.pdf>
- Humphrey, C. (2017). *Recovery Strategy for the Eastern Small-footed Myotis (Myotis leibii) in Ontario* (Ontario Recovery Strategy Series, p. vii + 76). Prepared for the Ontario Ministry of Natural Resources and Forestry. https://files.ontario.ca/mnrf_sar_rs_esfm_final_accessible.pdf
- Humphrey, C., & Fotherby, H. (2019). *Recovery Strategy for the Little Brown Myotis (Myotis lucifugus), Northern Myotis (Myotis septentrionalis), and Tri-colored Bat (Perimyotis subflavus) in Ontario. Adoption of the Recovery Strategy for the Little Brown Myotis (Myotis lucifugus), Northern Myotis (Myotis septentrionalis), and Tri-colored Bat (Perimyotis subflavus) in Canada (Environment and Climate Change Canada 2018)*. (Ontario Recovery Strategy Series, p. vii + 35). Prepared by the Ministry of the Environment, Conservation and Parks. <https://files.ontario.ca/mecp-rs-bats-2019-12-05.pdf>
- Lee, H. R., Bakowsky, W., Riley, J., Bowles, J., Puddister, M., Uhlig, P., & McMurray, S. (1998). *Ecological Land Classification for Southern Ontario: First Approximation and its Application*. Ontario Ministry of Natural Resources. https://www.researchgate.net/profile/Wasyl-Bakowsky/publication/248626765_Ecological_Land_Classification_for_Southern_Ontario_First_Approximation_and_Its_Application/links/560e7abd08ae48337515fd59/Ecological-Land-Classification-for-Southern-Ontario-First-Approximation-and-Its-Application.pdf
- MECP. (2021a). *Blanding's Turtle General Habitat Description*. Ministry of Environment, Conservation, and Parks. Published July 2013, Updated March 2021. <http://www.ontario.ca/page/blandings-turtle-general-habitat-description>
- MECP. (2021b). *Reptile and Amphibian Exclusion Fencing*. <https://www.ontario.ca/page/reptile-and-amphibian-exclusion-fencing>
- MECP. (2024). *Species at Risk in Ontario*. Ministry of the Environment, Conservation, and Parks. <http://www.ontario.ca/page/species-risk-ontario>
- MNR. (2010). *Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition*. Ministry of Natural Resources. <https://docs.ontario.ca/documents/3270/natural-heritage-reference-manual-for-natural.pdf>
- MNRF. (2015). *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E* (OMNRF Regional Operations Division: Southern Region Resources Section, p. 39). Ministry of Natural Resources and Forestry. <https://dr6j45jk9xcmk.cloudfront.net/documents/4775/schedule-6e-jan-2015-access-ver-final-s.pdf>
- MNRF. (2017). *Survey Protocol for Species at Risk Bats within Treed Habitats: Little Brown Myotis, Northern Myotis, and Tri-Coloured Bat* (p. 13). Ministry of Natural Resources and Forestry.
- MNRF. (2024a). *Fish ON-Line*. Ministry of Natural Resources and Forestry. <https://www.lioapplications.lrc.gov.on.ca/fishonline/Index.html?viewer=FishONLine.FishONLine&locale=en-CA>



MNR. (2024b). *Land Information Ontario*. Ministry of Natural Resources and Forestry.
<http://www.ontario.ca/page/land-information-ontario>

MNR. (2024c). *Natural Heritage Information Centre: Make a Natural Heritage Map*. Ministry of Natural Resources and Forestry. <http://www.ontario.ca/page/make-natural-heritage-area-map>

Muncaster Environmental Planning Inc. & Brunton Consulting Services. (2005). *City of Ottawa Urban Natural Areas Environmental Evaluation Study* (Final Report).
https://app06.ottawa.ca/calendar/ottawa/citycouncil/pdc/2005/05-24/Final%20Report_UNAEES.htm

OMAFRA. (2023). *AgMaps*. Land Information Ontario.
<https://www.lioapplications.lrc.gov.on.ca/AgMaps/Index.html?viewer=AgMaps.AgMaps&locale=en-CA>

Ontario Ministry of Mines. (2012). *Ontario Geotechnical Boreholes* [KML].
<https://data.ontario.ca/dataset/geotechnical-boreholes>

Ontario Nature. (2019). *Ontario Reptile and Amphibian Atlas*.
<https://www.ontarioinsects.org/herp/index.html?Sort=0&area2=squaresCounties&records=all&myZoom=5&Lat=47.5&Long=-83.5>

Schut, L. W., & Wilson, E. A. (1987). *The Soils of the Regional Municipality of Ottawa-Carleton (Excluding the Ottawa Urban Fringe)—Volume 1 and 2*.
<https://sis.agr.gc.ca/cansis/publications/surveys/on/on58/index.html>

The Cornell Lab of Ornithology. (2024). *eBird: An online database of bird distribution and abundance*.
<https://ebird.org/home>

Toronto Entomologists' Association. (2024). *Ontario Butterfly Atlas*. <https://www.ontarioinsects.org/atlas/>

Wildlife Preservation Canada, The Xerces Society, The University of Ottawa, BeeSpotter, The Natural History Museum, London, & the Montreal Insectarium. (2024). *Bumble Bee Watch: Bumble Sightings Map*.
https://www.bumblebeewatch.org/app/#/bees/map?filters=%7B%22sightingstatus_id%22:%5B%5D,%22species_id%22:%5B%2237%22%5D,%22province_id%22:%5B%5D%7D

10.1 Personal Communication

Hann, Carolyn. Species at Risk Specialist, Kemptville District. Ministry of Environment, Conservation, and Parks (MECP). Communication with KAL (K. Black), July 30, 2021.



Appendix A Qualifications of Report Authors



Kesia Miyashita, MSc (Senior Biologist)

Ms. Miyashita has over ten years of experience in environmental consulting and more than thirteen seasons of field experience in ecosystems in Ontario, Alberta, and British Columbia. During her career in environmental consulting, Ms. Miyashita has completed environmental assessments for a variety of major infrastructure projects and urban developments. Her expertise is in vascular and non-vascular plant ecology, with experience in both terrestrial and wetland ecosystems; she has performed vegetation community inventories, rare plant surveys, and invasive weed surveys in a variety of natural environments, including native forest, urban nature preserves, grasslands, and wetlands. Ms. Miyashita joined Kilgour & Associates Ltd. in May of 2021 and has since authored Environmental Impact Studies and Tree Conservation Reports and undertaken field surveys for flora and fauna, delineation of natural heritage features, and SAR surveys. Ms. Miyashita is a Professional Biologist with the Alberta Society of Professional Biologists and a Qualified Wetland Science Practitioner in the province of Alberta.

Nick Moore, BSc (Project Manager, Biologist)

Mr. Moore is a Field Ecologist with a background in Aquatic Biology. He graduated from Sir Sandford Fleming in 2018 with two Technical Diplomas for Environmental Technician and Environmental Technologist, as well as completing his Bachelor of Science with Honors in Biology and Environmental and Resource Studies at Trent University. He has worked with Kilgour & Associates Ltd. for three years. With us, he has been involved land-development projects where he has written Environmental Impact Studies and has used his academic training to characterize the flora and fauna of natural environments. Nick is a certified wetland evaluator under Ontario's Wetland Evaluation System (OWES) process.



Appendix B Notes from City of Ottawa Pre-Consultation Meeting





File No.: PC2023-0373

Adam Thompson
NovaTech
Via email: a.thompson@novatech-eng.com

**Subject: Pre-Consultation: Meeting Feedback
Proposed ZBLA Application – 4175 Strandherd Drive**

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on December 18, 2023.

Pre-Consultation Preliminary Assessment

1 <input checked="" type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
---------------------------------------	----------------------------	----------------------------	----------------------------	----------------------------

One (1) indicates that considerable major revisions are required while five (5) suggests that the proposal appears to meet the City’s key land use policies and guidelines. This assessment is purely advisory and does not consider technical aspects of the proposal or in any way guarantee application approval.

Next Steps

A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. Please proceed to complete a Phase 2 / Phase 3 Pre-consultation Application Form and submit it together with the necessary studies and/or plans to planningcirculations@ottawa.ca.

In your subsequent pre-consultation submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed must be included with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.

Please note, if your development proposal changes significantly in scope, design, or density before the Phase 3 pre-consultation, you may be required to complete or repeat the Phase 2 pre-consultation process.

Supporting Information and Material Requirements

The attached **Study and Plan Identification List** outlines the information and material that has been identified, during this phase of pre-consultation, as either required (R) or advised (A) as part of a future complete application submission.

- a. The required plans and studies must meet the City’s Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline

the specific requirements that must be met for each plan or study to be deemed adequate.

Consultation with Technical Agencies

You are encouraged to consult with technical agencies early in the development process and throughout the development of your project concept. A list of technical agencies and their contact information is enclosed.

Planning Comments – Kelby Lodeon Unseth

1. The property is designated Mixed Industrial in the Suburban transect. Residential uses are not permitted in this designation as outlined in Policy 6.5.2(7). The intent is to ensure that people do not reside in Mixed Industrial areas and to protect Mixed Industrial areas for uses that require a business park environment.

The Official Plan provides direction that *sensitive uses* may be considered through a ZBLA if all the criteria in 6.5.3 (2) are met:

- a) There are no adverse health impacts from adjacent uses and the sensitive institutional use does not impede an existing Mixed Industrial use's ability to operate via a Ministry of the Environment, Conservation and Parks permit. The assessment will be guided by the Ministry of the Environment, Conservation and Parks Land Use Compatibility Guidelines, as amended.
- b) There are no traffic impacts that would impede a Mixed Industrial use's operations.
- c) Is located within 600 metres of a residential zone; and
- d) Is located a minimum of 300 metres away from zones where heavy industrial land uses are permitted.

Please note that Section 6.5.3 was updated as part of the Omnibus 1.0 that Council approved on September 13, 2023. The amendment removed the term "institutional" from Policy 2) to ensure consistency with the Province's D-series guidelines for land use compatibility.

To add additional clarity, the amendment added the term "child" to ensure a more accurate interpretation that aligns with the definition of "licensed child care centre".

Notwithstanding the above policy, City staff note that a long-term care home operates similar to a residential use and are not permitted, where 6.5.1.7) of the Official Plan states that residential uses are not permitted within the Mixed Industrial areas.

2. Section 37 requirements / Community Benefits Charge

- a. The former Section 37 regime has been replaced with a “Community Benefits Charge”, [By-law No. 2022-307](#), of 4% of the land value. This charge will be required for ALL buildings that are 5 or more storeys and 10 or more units and will be required at the time of building permit unless the development is subject to an existing registered Section 37 agreement. Questions regarding this change can be directed to Ranbir.Singh@ottawa.ca.

Engineering

Comments:

- 3. For the zoning by-law amendment a Functional Servicing Report will be required which includes a functional level of servicing and grading for the proposed development. The following information is provided to assist in the preparation of the Functional Servicing and Grading, however some of the information will also be required for the preparation of the detailed servicing and grading.
- 4. A Geotechnical Report shall also be provided for the zoning by-law amendment as well as Site Plan Control
- 5. The Stormwater Management Criteria, for the subject site, is to be based on the following:
 - b. The 5-yr storm event using the IDF information derived from the Meteorological Services of Canada rainfall data, taken from the MacDonald Cartier Airport, collected 1966 to 1997.
 - c. As per the original Detailed Servicing and Stormwater Management Report for the subdivision, on-site quantity controlis required for lands east of the O’Keefe Drain to control post-development peak flows in the O’Keefe Drain to pre-development levels for all storms up to the 100-year event. The Release Rate and On-Site Storage requirements are as follows (from the original Detailed Servicing and Storm Water Management):

Table 8.13: SWM Targets for Areas East of the O’Keefe Drain

Design Event	Release Rate (L/s/ha)	On-Site Storage* (m ³ /ha)
2-yr Event	20	179
5-yr Event	35	232
10-yr Event	45	267
25-yr Event	64	310
50-yr Event	75	333
100-yr Event	126	351

** Based on 85% imperviousness*

- d. An OGS unit was provided as part of the subdivision works at the south west corner of the site. The OGS unit outlets directly into the O'Keefe Drain. The designer shall confirm that the provided OGS units can provide the required level of treatment.
- e. Flows to the storm sewer in excess of the 5-year storm release rate, up to and including the 100-year storm event, must be detained on site.

6. Sanitary

- a. Sanitary sewers on Systemhouse Street have been designed to accommodate the proposed development. Provide existing servicing information and the recommended location for the proposed connections.
- b. A monitoring maintenance hole should be located in an accessible location on private property near the property line (ie. Not in a parking area).
- c. Sewer connections to be made above the springline of the sewermain as per:
 - i. Std Dwg S11.1 for flexible main sewers – connections made using approved tee or wye fittings.
 - ii. Std Dwg S11 (For rigid main sewers) – lateral must be less than 50% the diameter of the sewermain,
 - iii. Std Dwg S11.2 (for rigid main sewers using bell end insert method) – for larger diameter laterals where manufactured inserts are not available; lateral must be less than 50% the diameter of the sewermain,
 - iv. Connections to manholes permitted when the connection is to rigid main sewers where the lateral exceeds 50% the diameter of the sewermain. – Connect obvert to obvert with the outlet pipe unless pipes are a similar size.

7. Water

- a. A water service shall be provided off of Systemhouse, however depending on the type/use of the development a 2nd water feed may be required off of Standherd
- b. A Water Data Card will be required prior to Commence Work Notification

- 8. Water Boundary condition requests must include the location of the service (map or plan with connection location(s) indicated) and the expected loads required by the

proposed development, including calculations. Please provide the following information:

- a. Location of service
 - b. Type of development and the amount of fire flow required (as per FUS).
 - c. Average daily demand: ___ l/s.
 - d. Maximum daily demand: ___ l/s.
 - e. Maximum hourly daily demand: ___ l/s.
9. Services should ideally be grouped in a common trench to minimize the number of road cuts.
10. An MECP Environmental Compliance Approval storm and sanitary sewers was previously applied for in 2017 (ECA No. 3701-AM3KLF). If the original design of the storm and sanitary sewers is being revised, the original ECA should be withdrawn or amended.
11. An Industrial Sewage Works or Private Sewage Works may be required for the proposed development. Please contact the Ministry of the Environment, Conservation and Parks, Ottawa District Office to arrange a pre-submission consultation:
- a. Emily Diamond at (613) 521-3450, ext. 238 or Emily.Diamond@ontario.ca
12. Sewer (sanitary and storm)
- a. There are no capacity constraints for sanitary flows
13. Stormwater
- b. OGS units were provided as part of the subdivision works at the south west corner of the site. The OGS units outlet directly into the O'Keefe Drain. It shall be confirmed that the provided OGS units can provide the required level of treatment.

Feel free to contact Jeff Shillington, Infrastructure Senior Engineer, for follow-up questions.

Noise

Comments:

14. Noise study is not required for rezoning application.

Feel free to contact Josiane Gervais, TPM, for follow-up questions.

Transportation

Comments:

15. Follow Transportation Impact Assessment Guidelines:

- a. Note that the TIA guidelines have been updated to align with the new pre-application consultation process. The changes are available on the City's website: <https://ottawa.ca/en/transportation-impact-assessment-guidelines#section-41824473-e537-4647-b516-dd528523f9fe>
- b. A Transportation Impact Assessment is required.
- c. Note that the TIA must assess the worst-case scenario of site generated traffic for the zoning sought.
- d. Submit the Scoping report to josiane.gervais@ottawa.ca at your earliest convenience or, at the latest, as part of the Phase 2 pre-con package. Should a Phase 2 pre-con be waived, the applicant is still responsible to submit the Scoping Report and must allow for a 14 day circulation period.
- e. The Strategy Report must be submitted for review at the latest with the Phase 3 pre-con package. The applicant is still encouraged to submit the Strategy Report to the TMP before submission of the Phase 3 pre-con package and allow for a 14 day circulation period.

16. TIA should assume posted speed of 70 km/hr along Strandherd Dr, as this is the current posted speed south of Systemhouse St.

Feel free to contact Josiane Gervais, Transportation Project Manager, for follow-up questions.

Environmental Planning

Comments:

17. Staff request the preparation of an EIS as the property possesses the potential for significant habitat for threatened or endangered species and as the site is located adjacent to a watercourse. The EIS should focus on the potential for endangered species habitat on site and any necessary mitigation measures that may arise if SAR habitat exists.
18. Staff recommend that the proposal provide a soft, landscaped edge along the O'Keefe drain that utilizes native and non-invasive species.
19. As this property is part of the study area for the O'Keefe Drain Environmental Management Plan, the relevant recommendations and findings from that document must be incorporated into future designs.

Feel free to contact Mark Elliott, Environmental Planner, for follow-up questions.

Planning Forestry

20. Tree preservation and Tree Planting

- a. The Planning Forester does not have any comments or concerns regarding this zoning bylaw amendment application. Tree planting and tree removal (if required) can be managed through the site plan application process. Contact Mark.Richardson@Ottawa.ca if there are questions.

Feel free to contact Mark Richardson, Forester, for follow-up questions.

Parkland

Comments:

21. Zoning:

- a. Parkland dedication is not required for a zoning amendment application; However, typically, if the development specifics are known, PFP requests that the park block, if applicable, be zoned to “O1” (Parks and Open Space Zone) through the Zoning By-law Amendment application. However, if a development concept is unknown, or preliminary, then the parkland conveyance requirements cannot be calculated and therefore establishing the boundaries of the O1 zone are not possible. Please note, however, that not providing an O1 zone during this rezoning application does not preclude the City from obtaining a park block during the future Site Plan or Subdivision application.

For Future Reference:

22. Parkland Dedication:

- a. The amount of required parkland conveyance will be calculated as per the City of Ottawa Parkland Dedication By-law No.2022-280 (or as amended):
 - i. Section 4 (1) identifies the conveyance of parkland, cash-in-lieu of conveyance parkland, or combination thereof, to be calculated as:
 1. 5% of the gross land area for other purposes, including residential care facility as defined by the Zoning By-law, excluding residential.
 2. 2% of the gross land area for commercial & industrial uses.
 - ii. Section 4 (2) specifies that where land is developed for a mix of land uses that are located on discrete parts of the site, the conveyance

requirement shall be the cumulative sum for each use, as calculated using the applicable rate and based upon the portion of the site allocated to each use, including, but not limited to, required and provided parking spaces, amenity space, landscape buffers, driveways, and drive aisles.

- iii. Section 11 (1) of the By-law states that:

The conveyance of parkland or the payment of cash-in-lieu of parkland is not required for development or redevelopment where it is known, or can be demonstrated, that the required parkland conveyance or cash-in-lieu of parkland, or combination thereof, has been previously satisfied in accordance with the Planning Act, unless:

(c) land originally proposed for development or redevelopment for commercial or industrial purposes is now proposed for development or redevelopment for other purposes that have a higher conveyance requirement pursuant to the rates described herein.

- iv. The proposed development is located within an area where the parkland dedication conveyance requirement was satisfied for commercial / industrial purposes through subdivision approval. Please refer to the Development Review file D07-16-12-0023.
- v. However, if “Other” uses are being proposed on a portion of the site, as mentioned in the pre-consultation meeting (ex: a residential care facility), that use results in the higher conveyance requirement of 5% of the gross land area.
- vi. Section 42 (9) of the Planning Act stipulates that:

If there is a change under clause (7) (a) or (b), the land that has been conveyed or is required to be conveyed or the payment of money that has been received or that is owing, as the case may be, shall be included in determining the amount of land or payment of money in lieu of it that may subsequently be required under this section on the development, further development or redevelopment of the lands or part of them in respect of which the original conveyance or payment was made.

- vii. Therefore, if a residential care facility use is proposed, the application will be subject to a parkland dedication conveyance requirement of 3% of the gross land area. The 3% rate being the difference between the 5% rate identified for ‘Other’ and the 2% rate previously dedicated for commercial uses (5% - 2% = 3%)

- viii. For future reference, when parkland dedication is being calculated, please provide the conveyance requirement to the nearest square meter.

23. For Consideration During Concept Development

- a. At the 1st pre-consultation for the Site Plan or Subdivision application, PFP requests that the following information (if applicable) is provided for parkland conveyance calculation purposes:
 - i. Gross land area, in square meters
 - ii. Gross land area of each parcel being subdivided, in square meters
 - iii. The proposed use for each parcel of land being subdivided
 - iv. Number of residential units proposed/existing
 - v. Gross floor area of proposed residential development
 - vi. Gross floor area of proposed/existing commercial development
 - vii. The proportion of commercial/residential development proposed on site.
- b. If the parkland conveyance requirement is to be satisfied in the form land, then please keep in mind the following:
 - i. The proposed park block is to provide the full required parkland conveyance.
 - ii. A continuous sidewalk is required along all park street frontages.
 - iii. The park block shall be dedicated as one, contiguous parcel.
 - iv. The park block shall be rectangular-based.

24. Policies:

- a. Policy 4.4.1(2) of the City of Ottawa's Official Plan indicates the following:

All development, regardless of use, shall meet all of the following criteria to the satisfaction of the City:

*a) **Consider land acquisition for parks** as directed by the Parkland Dedication By-law to meet community needs for both residential and non-residential development, with an emphasis on active recreation amenities and potential cultural development with new parks acquired to address gaps or community needs; and*

b) **Prioritize land for parks** on-site over cash-in-lieu of parkland. Cash-in-lieu of parkland shall only be accepted when land or location is not suitable. The land to be conveyed shall, wherever feasible:

- i. Be a minimum of 400 square metres or as described in the Land First Policy and updated Park Development Manual as directed by the Parks and Recreation Facilities Master Plan;
- ii. Be free of encumbrances above and below ground when land for parks is obtained by parkland dedication; or in the case of land purchases for the creation of new parks in established areas, unless the encumbrances have been approved by the City where reasonable;
- iii. Be of a usable shape, topography and size that reflects its intended use;
- iv. Meet applicable provincial soil regulations; and
- v. Meet the minimum standards for drainage, grading and general condition.

b. Policy 4.4.1(3) of the City of Ottawa's Official Plan indicates:

For Site Plan Control applications in the Downtown, Inner Urban, Outer Urban and Suburban Transects, where the development site is more than 4,000 m², the City shall place a priority on acquisition of land for park(s) as per the Planning Act and the Parkland Dedication By-law.

c. Policy 4.4.6(1)(e) of the City of Ottawa's Official Plan indicates that a preferred minimum of 50% of the park perimeter shall be continuous frontage on abutting streets.

25. Reference Documents:

- a. Please review the following City of Ottawa reference documents which outline the requirements for parkland conveyance and/or cash-in-lieu of parkland.
 - i. Official Plan (2021)
 - ii. Parks and Recreation Facilities Master Plan (2021)
 - iii. Park Development Manual, 2nd edition
 - iv. Parkland Dedication By-Law (2022-280) and Planning Act amendments
 - v. City of Ottawa Standard Parks Conditions



26. Please note that the park comments are preliminary and will be finalized (and subject to change) upon receipt of the development application and the requested supporting documentation.

Feel free to contact Jeannette Krabicka, Parks Planner, for follow-up questions.

Other

27. The High-Performance Development Standard (HPDS) is a collection of voluntary and required standards that raise the performance of new building projects to achieve sustainable and resilient design. The HPDS was passed by Council on April 13, 2022.

- a. At this time, the HPDS is not in effect and Council has referred the 2023 HPDS Update Report back to staff with direction to bring forward an updated report to Committee with recommendations for revised phasing timelines, resource requirements and associated amendments to the Site Plan Control By-law by no later than Q1 2024.
- b. Please refer to the HPDS information attached and ottawa.ca/HPDS for more information.

Should there be any questions, please do not hesitate to contact myself or the contact identified for the above areas / disciplines.

Regards,

Kelby Lodoen Unseth

- c.c. Reed Adams, IPM
Jeffrey Shillington, Senior IPM
Josiane Gervais, TPM
Mark Elliott, Environmental Planner
Mark Richardson, Forester
Jeannette Krabicka, Parks Planner

Appendix C Species at Risk Screening and Assessment



Species Name (Taxonomic Name)	Status under Endangered Species Act (ESA)	Status under Schedule 1 of the Species at Risk Act (SARA)	Closest Species Occurrence Record to the Site	General Habitat Requirements	Site Suitability	Potential for Protected Elements ¹		Potential for Negative Interactions with Protected Elements ²
						Habitat	Individuals	
Birds								
American White Pelican (<i>Pelecanus erythrorhynchos</i>)	Threatened	Not at Risk	Cornell Lab of Ornithology (2024) – observed ~ 2km from the Site	Nest in groups on remote, sparsely vegetated islands in lakes, reservoirs or on large rivers.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Special Concern	Not at Risk	Cornell Lab of Ornithology (2024) – observed ~ 850 m from the Site	Nest in mature forests near open water. In large trees such as pine and poplar.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Bank Swallow (<i>Riparia riparia</i>)	Threatened	Threatened	Cornell Lab of Ornithology (2024) – observed ~ 850 m from the Site	Colonial nester; burrows in eroding silt or sand banks, sand pit walls, and human-made sand piles. Often found on banks of rivers and lakes.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Barn Swallow (<i>Hirundo rustica</i>)	Special Concern	Threatened	Cornell Lab of Ornithology (2024) – observed ~ 200 m from the Site	Nests on barns and other structures. Forages in open areas for flying insects. Lives in close association with humans and prefers to nest on structures such as open barns, under bridges, and in culverts.	The Site may provide suitable foraging habitat but does not contain suitable nesting habitat.	Low	Low	Low
Black Tern (<i>Chlidonias niger</i>)	Special Concern	Not at Risk	Cornell Lab of Ornithology (2024) – observed ~ 600 m from the Site	Build floating nests in loose colonies in shallow marshes with abundant emergent vegetation, especially in cattails.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Bobolink (<i>Dolichonyx oryzivorus</i>)	Threatened	Threatened	Cornell Lab of Ornithology (2024) – observed ~ 1 km from the Site	Breeds in hayfields, pastures, agricultural fields, and abandoned fields with tall grass that are ≥5 ha, and preferably >30 ha.	The agricultural field on-Site may provide suitable habitat, although the field is smaller than preferred and is dominated by forb cover, with little grass. This Site is regularly tended and thus will not qualify as potential Bobolink habitat.	Low	Low	Low
Canada Warbler (<i>Cardellina canadensis</i>)	Special Concern	Threatened	Cornell Lab of Ornithology (2024) – observed ~ 2.5 km from the Site	Prefers moist forests with dense shrub layers. Nests located on or near the ground on mossy logs or roots, along stream banks or on hummocks. Area-sensitive species that usually require a minimum of 30 ha of continuous forest for breeding habitat (OMNR, 2000).	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible



Species Name (Taxonomic Name)	Status under Endangered Species Act (ESA)	Status under Schedule 1 of the Species at Risk Act (SARA)	Closest Species Occurrence Record to the Site	General Habitat Requirements	Site Suitability	Potential for Protected Elements ¹		Potential for Negative Interactions with Protected Elements ²
						Habitat	Individuals	
Chimney Swift (<i>Chaetura pelagica</i>)	Threatened	Threatened	Cornell Lab of Ornithology (2024) – observed ~ 2 km from the Site	Nests in traditional-style open brick chimneys (and rarely in hollow trees). Tends to stay close to water.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Common Nighthawk (<i>Chordeiles minor</i>)	Special Concern	Threatened	Cornell Lab of Ornithology (2024) – observed ~850 m from the Site	Nests in a wide variety of open sites, including beaches, fields, and gravel rooftops with little to no ground vegetation. They also nest in cultivated fields, orchards, urban parks, mine tailings and along gravel roads/railways but tend to occupy more natural sites.	Open areas (field) on-Site may provide suitable habitat.	Moderate	Moderate	Moderate
Eastern Meadowlark (<i>Sturnella magna</i>)	Threatened	Threatened	Cornell Lab of Ornithology (2024) – observed ~ 800 m from the Site	Breeds in hayfields, pastures, agricultural fields, and abandoned fields with tall grass that are ≥5 ha, and preferably >30 ha.	The agricultural field on-Site may provide suitable habitat, although the field is smaller than preferred and is dominated by forbs with little grass cover. This Site is regularly tended and as such will not qualify as potential Eastern Meadowlark Habitat.	Low	Low	Low
Eastern Wood-Pewee (<i>Contopus virens</i>)	Special Concern	Special Concern	Cornell Lab of Ornithology (2024) – observed 1.5 km from the Site	Woodland species often found in the mid-canopy layer near clearings and edges of intermediate age and mature deciduous and mixed forests with little understory.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Evening Grosbeak (<i>Coccothraustes vespertinus</i>)	Special Concern	Special Concern	Cornell Lab of Ornithology (2024) – observed ~ 1.2 km from the Site	Nests in trees or large shrubs. Prefers mature coniferous forests (fir and/or spruce dominated), but will also use deciduous forests, parklands, and orchards. Its abundance is strongly linked to the cycle of Spruce Budworm.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Grasshopper Sparrow (<i>Ammodramus savannarum</i>)	Special Concern	Special Concern	Cornell Lab of Ornithology (2024) – observed ~ 850 m from the Site	Lives in open grassland areas with well-drained sandy soil. Will also nest in hayfields and pastures, as well as alvars, prairies, and occasionally grain crops such as barley. It prefers areas that are sparsely vegetated, and its nests are well	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible



Species Name (Taxonomic Name)	Status under Endangered Species Act (ESA)	Status under Schedule 1 of the Species at Risk Act (SARA)	Closest Species Occurrence Record to the Site	General Habitat Requirements	Site Suitability	Potential for Protected Elements ¹		Potential for Negative Interactions with Protected Elements ²
						Habitat	Individuals	
				hidden in the field, woven from grasses in a small cup-like shape.				
Least Bittern (<i>Ixobrychus exilis</i>)	Threatened	Threatened	Cornell Lab of Ornithology (2024) – observed ~ 1 km from the Site	Found in a variety of wetland habitats, but strongly prefers cattail marshes with a mix of open pools and channels. They prefer larger marshes >5 ha in size and are intolerant of loss of habitat and human disturbance (OMNR, 2000).	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Lesser Yellowlegs (<i>Tringa flavipes</i>)	Threatened	No Status	Cornell Lab of Ornithology (2024) – observed ~ 850 m from the Site	Breeds in boreal wetlands. Nests on dry ground or forest openings near peatlands, marshes, and ponds in the boreal forest and taiga (Government of Canada, 2021). Migrant only; nests in far north.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Olive-sided Flycatcher (<i>Contopus cooperi</i>)	Special Concern	Threatened	Cornell Lab of Ornithology (2024) – observed ~ 1.2 km from the Site	Found along coniferous or mixed forest edges and openings. Will use forests that have been logged or burned if there are ample tall snags and trees to use for foraging perches.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Peregrine Falcon (<i>Falco peregrinus</i>)	Special Concern	Special Concern	Cornell Lab of Ornithology (2024) – observed ~ 1.5 km from the Site	Nests on tall, steep cliff ledges close to large bodies of water. Urban peregrines raise their young on ledges of tall buildings, even in busy downtown areas.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Red Knot (<i>Calidris canutus rufa</i>)	Endangered	Endangered	Cornell Lab of Ornithology (2024) – observed ~ 2 km from the Site	Prefer open beaches, mudflats, and coastal lagoons where they feast on molluscs, crustaceans, and other invertebrates. Migrant only; nests in far north.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Rusty Blackbird (<i>Euphagus carolinus</i>)	Special Concern	Special Concern	Cornell Lab of Ornithology (2024) – observed ~ 1.5 km from the Site	Prefers wet wooded or shrubby areas. Nests at edges of boreal wetlands and coniferous forests. These areas include bogs, marshes, and beaver ponds.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Short-eared Owl (<i>Asio flammeus</i>)	Threatened	Special Concern	Cornell Lab of Ornithology (2024) – observed ~ 850 m from the Site	Prefer a mosaic of grasslands and wetlands. Lives in open areas such as grasslands, marshes, and tundra where it nests on the ground and hunts for small mammals (Environment Canada, 2016c).	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible



Species Name (Taxonomic Name)	Status under Endangered Species Act (ESA)	Status under Schedule 1 of the Species at Risk Act (SARA)	Closest Species Occurrence Record to the Site	General Habitat Requirements	Site Suitability	Potential for Protected Elements ¹		Potential for Negative Interactions with Protected Elements ²
						Habitat	Individuals	
Wood Thrush (<i>Hylocichla mustelina</i>)	Special Concern	Threatened	MNR (2024a) – within 5 km of the Site	Lives in mature deciduous and mixed forests. They seek moist stands of trees with well-developed undergrowth and tall trees for singing and perching. Prefers nesting in large forest mosaics, but will also use fragmented forests. Usually build nests in Sugar Maple or American Beech.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Mammals								
Eastern Small-footed Myotis (<i>Myotis leibii</i>)	Endangered	Not Listed	Humphrey (2017) – in region	In the spring and summer, Eastern Small-footed Myotis will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. Overwinters in caves and abandoned mines.	Open areas on-Site may provide suitable foraging habitat; however, the Site does not appear to contain suitable roosting habitat.	Low	Low	Low
Little Brown Myotis (<i>Myotis lucifugus</i>)	Endangered	Endangered	Humphrey and Fotherby (2019) – in region	During the day they roost in trees and buildings. They often select attics, abandoned buildings, and barns for summer colonies where they can raise their young. They can squeeze through very tiny spaces (as small as six millimetres across) allowing them access to many different roosting areas.	Open areas on-Site may provide suitable foraging habitat; however, the Site does not appear to contain suitable roosting habitat.	Low	Low	Low
Northern Myotis / Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	Endangered	Humphrey and Fotherby (2019) – in region	Associated with deciduous and mixed forests, choosing to roost under loose bark and in the cavities of trees. They forage along and within forests as well as in hayfields and pastures adjacent to mixed forests.	Open areas on-Site may provide suitable foraging habitat; however, the Site does not appear to contain suitable roosting habitat.	Low	Low	Low
Tri-colored Bat / Eastern Pipistrelle (<i>Perimyotis subflavus</i>)	Endangered	Endangered	Humphrey and Fotherby (2019) – in region	Roosts mainly in trees during summer; overwinters in caves and mines along with other species, but often uses deeper parts of the hibernaculum. Foraging occurs in forested riparian areas, over water, and within gaps in forest canopies.	Open areas on-Site may provide suitable foraging habitat; however, the Site does not appear to contain suitable roosting habitat.	Low	Low	Low
Amphibians								



Species Name (Taxonomic Name)	Status under Endangered Species Act (ESA)	Status under Schedule 1 of the Species at Risk Act (SARA)	Closest Species Occurrence Record to the Site	General Habitat Requirements	Site Suitability	Potential for Protected Elements ¹		Potential for Negative Interactions with Protected Elements ²
						Habitat	Individuals	
Western Chorus Frog (<i>Pseudacris triseriata</i>)	Not Listed	Great Lakes/ St. Lawrence population: Threatened	MNRF (2024a) – within 5 km of the Site	Inhabits forest openings around woodland ponds but can also be found in or near damp meadows, marshes, bottomland swamps, and temporary ponds in open country, or even urban areas.	Damp areas around the drain remnant on-Site may provide suitable habitat.	Moderate	Moderate	Moderate
Reptiles								
Blanding's Turtle (<i>Emydoidea blandingii</i>)	Threatened	Endangered	MNRF (2024a) – within 2 km of the Site	Quiet lakes, streams, and wetlands with abundant emergent vegetation. Also frequently occurs in adjacent upland forests.	The O'Keefe Drain is regularly cleaned and thus lacks a soft organic bottom. It may provide habitat as a corridor during seasonal movements but is not considered "suitable" for defining Category 2 or 3 habitat.	Low	Low	Low
Eastern Milksnake (<i>Lampropeltis triangulum</i>)	Not Listed	Special Concern	MNRF (2024a) – within 5 km of the Site	Found in a variety of open and edge habitats, including meadows, rocky outcrops, and forest edges. They can also inhabit forests. Further, they are often associated with human-made structures such as barns (Environment Canada, 2015b).	Meadow and field edges on-Site may provide suitable habitat.	Moderate	Moderate	Moderate
Midland Painted Turtle (<i>Chrysemys picta marginata</i>)	Not Listed	Special Concern	MNRF (2024a) – within 5 km of the Site	Inhabits waterbodies, such as ponds, marshes, lakes, and slow-moving creeks that have a soft bottom and provide abundant basking sites and aquatic vegetation. Often bask on shorelines or on logs and rocks that protrude from the water.	Moist edges on-Site adjacent to the O'Keefe Drain may provide suitable habitat.	Moderate	Moderate	Moderate
Northern Map Turtle (<i>Graptemys geographica</i>)	Special Concern	Special Concern	MNRF (2024a) – within 5 km of the Site	Lives in rivers and lakeshores where it basks on emergent rocks and fallen trees throughout the spring and summer. In winter, they hibernate on the bottom of deep, slow-moving sections of river.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Snapping Turtle (<i>Chelydra serpentina</i>)	Special Concern	Special Concern	MNRF (2024a) – within 5 km of the Site	Spend most of their lives in the water. Prefer shallow waters so they can hide under the soft mud and leaf litter with only their noses exposed to the surface to breathe.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Arthropods								



Species Name (Taxonomic Name)	Status under Endangered Species Act (ESA)	Status under Schedule 1 of the Species at Risk Act (SARA)	Closest Species Occurrence Record to the Site	General Habitat Requirements	Site Suitability	Potential for Protected Elements ¹		Potential for Negative Interactions with Protected Elements ²
						Habitat	Individuals	
American Bumble Bee (<i>Bombus pensylvanicus</i>)	Special Concern	No Status	COSEWIC (2018) – in region	Habitat generalist. Requires a variety of habitat throughout it's life stages. Often found in or adjacent to open fields and meadows, grasslands, farmlands, and other undisturbed open habitats (Government of Canada, 2019).	The open field on-Site may provide suitable habitat.	Moderate	Moderate	Moderate
Monarch (<i>Danaus plexippus</i>)	Special Concern	Special Concern	Toronto Entomologists' Association (2024)	Milkweeds are the sole food plant for Monarch caterpillars. These plants predominantly grow in open and periodically disturbed habitats such as roadsides, fields, wetlands, prairies, and open forests.	The open field and edges/roadsides may provide suitable habitat if milkweeds are present.	Low	Low	Low
Transverse Lady Beetle (<i>Coccinella transversoguttata</i>)	Endangered	Special Concern	MNRF (2024a)	Able to live in a wide range of habitats, including agricultural areas, suburban gardens, parks, coniferous forests, deciduous forests, prairie grasslands, meadows, and riparian areas.	There have been no records of the species in Ontario since 1990 (MECP, 2020b).	None	None	None
Yellow-banded Bumble Bee (<i>Bombus terricola</i>)	Special Concern	Special Concern	ECCC (2022) – in region	This species is a forage and habitat generalist, able to use a variety of nectaring plants and environmental conditions. Can be found in mixed woodlands, particularly for nesting and overwintering, as well as a variety of open habitat such as native grasslands, farmlands, and urban areas.	The open field and edges/roadsides may provide suitable habitat.	Moderate	Moderate	Moderate
Vascular Plants								
Black Ash (<i>Fraxinus nigra</i>)	Endangered	No Status	MNRF (2024a)	Predominantly a wetland species found in swamps, floodplains, and fens.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Butternut (<i>Juglans cinerea</i>)	Endangered	Endangered	MNRF (2024a)	Commonly found in riparian habitats but is also found on rich, moist, well-drained loams and well-drained gravels, especially those of limestone origin.	The Site does not appear to contain suitable habitat.	Low	Negligible	Negligible

¹ The potential for occurrence of protected habitats and individuals within the project area is estimated based on the following considerations:



	Habitat	Individuals
None	It is not possible for the habitat of the species to occur in proximity to the project site	The species is documented as no longer occurring in the ecoregion or could not occur in proximity to the project area.
Negligible	The usage of the project site as habitat is possible but would be highly unlikely/unusual.	Transient occurrence near the project area is possible but is very unlikely.
Low	The project site includes areas that could be used by the species as habitat, but such usage is considered unlikely given the quality of the feature, a lack of individuals in the broader area, or other (relative) site considerations.	Transient occurrence near the project area possible, but the species would be unlikely to use or require the area.
Moderate	The project site includes areas that could reasonably be expected to provide confirmed or defined habitat within a time frame relevant to the project.	The species occurs in the vicinity and could actively use the site, or transient occurrence should be anticipated.
High	The project site includes areas confirmed to actively provide habitat or to constitute habitat based on official habitat description guidance documents.	The species is confirmed as present on, and actively using the site.

2 The potential for negative project interaction with species and/or their habitat is estimated considering both the likelihood of presence and the general details of the project (e.g., timing, extent), and following the definitions below. If the potential differs for habitat and individuals, the higher value is reported, unless otherwise justified

	Habitat	Individuals
None	It is not possible for the species to occupy the site area due to access barriers.	The species is documented as no longer occurring in the ecoregion
Negligible	Negligible habitat potential, or low habitat potential and the project would not be anticipated to alter the habitat.	Negligible occurrence potential for presence, or absence during the entire span of the project.
Low	Low habitat potential, or medium habitat potential and the project would not be anticipated to alter the habitat.	Low occurrence potential for presence, or the project design excludes individuals in a non-harassing manner by default.
Moderate	Medium habitat potential, or high habitat potential and the project would not be anticipated to alter the habitat (as expressed by MECP).	Medium occurrence potential for presence, or the project design excludes individuals in accordance with agency guidelines/directives by default (i.e., outside of mitigation measures prescribed in this report).
High	The project area will alter identified habitat.	The project will interact with individuals.



LITERATURE CITED

- Birds Canada, Canadian Wildlife Service (Environment and Climate Change Canada), Ministry of Natural Resources and Forestry – Government of Ontario, Ontario Field Ornithologists (OFO), and Ontario Nature. 2009. Atlas of the Breeding Birds of Ontario 2001-2005. Available online at: <https://www.birdsontario.org/jsp/datasummaries.jsp>
- Burke, Peter S. 2012. Management Plan for the Black Tern (*Chlidonias niger*) in Ontario. Ontario Management Plan Series. Prepared for the Ontario Ministry of Natural Resources (OMNR), Peterborough, Ontario. vi + 47 pp. Available online at: https://files.ontario.ca/environment-and-energy/species-at-risk/mnr_sar_mtpln_blktrn_en.pdf
- California Academy of Sciences and National Geographic Society. 2022. iNaturalist. Available online at: <https://www.inaturalist.org/>
- Committee on the Status of Endangered Wildlife in Canada. 2011. COSEWIC Assessment and Status Report on the Macropis Cuckoo Bee (*Epeoloides pilosulus*) in Canada. Available online at: https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_macropis_cuckoo_bee_0911_eng.pdf
- Committee on the Status of Endangered Wildlife in Canada. 2015. COSEWIC Assessment and Status Report on the Black-foam Lichen (*Anzia colpodes*) in Canada. Available online at: https://sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Black-foam%20Lichen_2015_e.pdf
- The Cornell Lab of Ornithology. 2022. eBird: An online database of bird distribution and abundance. Available online at: <https://ebird.org/home>
- COSEWIC. 2018. COSEWIC assessment and status report on the American Bumble Bee *Bombus pensylvanicus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 52 pp. Available online at: <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/american-bumble-bee-2018.html>
- COSEWIC. 2019. COSEWIC assessment and status report on the Suckley's Cuckoo Bumble Bee *Bombus suckleyi* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 70 pp. Available online at: <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/suckley-cuckoo-bumble-bee-2019.html>
- Environment Canada. 2011. Management Plan for the Louisiana Waterthrush (*Seiurus motacilla*) in Canada [Proposed]. Species at Risk Act Management Plan Series. Environment Canada, Ottawa. iii + 18 pp. Available online at: https://www.sararegistry.gc.ca/virtual_sara/files/plans/mp_louisiana_waterthrush_e.pdf
- Environment Canada. 2013. Management Plan for the Yellow Rail (*Coturnicops noveboracensis*) in Canada. Species at Risk Act Management Plan Series. Environment Canada, Ottawa. iii + 24 pp. Available online at: https://www.sararegistry.gc.ca/virtual_sara/files/plans/mp_yellow_rail_e_final.pdf
- Environment Canada. 2014a. Recovery Strategy for the Western Chorus Frog (*Pseudacris triseriata*), Great Lakes / St. Lawrence – Canadian Shield Population, in Canada [Proposed], Species at Risk Act Recovery Strategy Series, Environment Canada, Ottawa, v + 46 pp. Available online at: https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_rainette-fx-grillon-ouest-w-chorus-frog-prop-0614_e.pdf



- Environment Canada. 2014b. Management Plan for the Eastern Ribbonsnake (*Thamnophis sauritus*), Great Lakes population, in Canada [Proposed]. Species at Risk Act Management Plan Series. Environment Canada, Ottawa. iv + 23 pp. Available online at: https://www.sararegistry.gc.ca/virtual_sara/files/plans/mp_eastern_ribbonsnake_e_proposed.pdf
- Environment Canada. 2015a. Management Plan for the Rusty Blackbird (*Euphagus carolinus*) in Canada. Species at Risk Act Management Plan Series. Environment Canada, Ottawa. iv + 26 pp. Available online at: https://www.sararegistry.gc.ca/virtual_sara/files/plans/mp_rusty_blackbird_e_final.pdf
- Environment Canada. 2015b. Management Plan for the Eastern Milksnake (*Lampropeltis triangulum*) in Canada. Species at Risk Act Management Plan Series. Environment Canada, Ottawa. iii + 27 pp. Available online at: https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/management-plans/eastern-milksnake-2015.html#_03_3
- Environment Canada. 2016a. Recovery Strategy for the Canada Warbler (*Cardellina canadensis*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. vii + 56 pp. Available online at: https://www.sararegistry.gc.ca/virtual_sara/files/plans/rs_canada%20warbler_e_final.pdf
- Environment Canada. 2016b. Recovery Strategy for the Common Nighthawk (*Chordeiles minor*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. vii + 49 pp. Available online at: https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_common%20nighthawk_e_final.pdf
- Environment Canada. 2016c. Management Plan for the Short-eared Owl (*Asio flammeus*) in Canada [Proposed]. Species at Risk Act Management Plan Series. Environment Canada, Ottawa. v + 35 pp. Available online at: file:///C:/Users/skatsaras/Downloads/Management_plan_asio_falmmuus_Feb23_2016.pdf
- Environment and Climate Change Canada (ECCC). 2018a. Recovery Strategy for the Eastern Whip-poor-will (*Antrostomus vociferus*) in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. vi + 107 pp. Available online at: <https://files.ontario.ca/mecp-rs-easternwhip-poor-will-2019-12-05.pdf>
- Environment and Climate Change Canada (ECCC). 2018b. Recovery Strategy for the Blanding's Turtle (*Emydoidea blandingii*), Great Lakes / St. Lawrence population, in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. viii + 59 pp. Available online at: <https://files.ontario.ca/mecp-rs-blandings-turtle-2019-12-05.pdf>
- Environment and Climate Change Canada (ECCC). 2022. Management Plan for the Yellow banded Bumble Bee (*Bombus terricola*) in Canada [Proposed]. Species at Risk Act Management Plan Series. Environment and Climate Change Canada, Ottawa. iv + 46 pp. Available online at: <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/management-plans/yellow-banded-bumble-bee-proposed-2022.html>
- Fisheries and Oceans Canada (previously Department of Fisheries and Oceans, "DFO"). 2022. Aquatic Species at Risk Map. Available online at: <https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html>
- Government of Canada. 2019. American Bumble Bee (*Bombus pensylvanicus*): COSEWIC assessment and status report 2018. Available online at: <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/american-bumble-bee-2018.html>
-



Government of Canada. 2020. Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*): COSEWIC assessment and status report 2019. Available online at: <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/suckley-cuckoo-bumble-bee-2019.html>

Government of Canada. 2021. Lesser Yellowlegs (*Tringa flavipes*): COSEWIC assessment and status report 2020. Available online at: <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/lesser-yellowlegs-2020.html>

Government of Canada. 2022. Species at Risk Public Registry. Available online at: http://www.registrelep-sararegistry.gc.ca/sar/index/default_e.cfm

Humphrey, C. 2017. Recovery Strategy for the Eastern Small-footed Myotis (*Myotis leibii*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vii + 76 pp. Available online at: https://files.ontario.ca/mnrf_sar_rs_esfm_final_accessible.pdf

Humphrey, C., and H. Fotherby. 2019. Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*) and Tri-colored Bat (*Perimyotis subflavus*) in Ontario. Ontario Recovery Strategy Series. Prepared by the Ministry of the Environment, Conservation and Parks, Peterborough, Ontario. vii + 35 pp. + Appendix. Adoption of the Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis septentrionalis*), and the Tri-colored Bat (*Perimyotis subflavus*) in Canada (Environment and Climate Change Canada 2018). Available online at: <https://files.ontario.ca/mecp-rs-bats-2019-12-05.pdf>

Kraus, T., B. Hutchinson, S. Thompson and K. Prior. 2010. Recovery Strategy for the Gray Ratsnake (*Pantherophis spiloides*) – Carolinian and Frontenac Axis populations in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. vi + 23 pp. Available online at: <https://www.ontario.ca/page/gray-ratsnake-recovery-strategy>

Ministry of Environment, Conservation, and Parks (MECP). 2019a. Algonquin Wolf. Available online at: <https://www.ontario.ca/page/algonquin-wolf>

Ministry of Environment, Conservation, and Parks (MECP). 2019b. Gypsy Cuckoo Bumble Bee. Available online at: <https://www.ontario.ca/page/gypsy-cuckoo-bumble-bee>

Ministry of Environment, Conservation, and Parks (MECP). 2019c. Nine-spotted Lady Beetle. Available online at: <https://www.ontario.ca/page/nine-spotted-lady-beetle>

Ministry of Environment, Conservation, and Parks (MECP). 2019d. Rapids Clubtail. Available online at: <https://www.ontario.ca/page/rapids-clubtail>

Ministry of Environment, Conservation, and Parks (MECP). 2019e. Rusty-patched Bumble Bee. <https://www.ontario.ca/page/rusty-patched-bumble-bee>

Ministry of Environment, Conservation, and Parks (MECP). 2019f. Pale-bellied Frost Lichen. Available online at: <https://www.ontario.ca/page/pale-bellied-frost-lichen>

Ministry of Environment, Conservation, and Parks (MECP). 2020a. Gray Fox. Available online at: <https://www.ontario.ca/page/grey-fox>



Ministry of Environment, Conservation, and Parks (MECP). 2020b. Transverse Lady Beetle. Available online at:
<https://www.ontario.ca/page/transverse-lady-beetle>

Ministry of Environment, Conservation, and Parks (MECP). 2022. Species at Risk in Ontario. Available online at:
<https://www.ontario.ca/page/species-risk-ontario>

Ministry of Natural Resources and Forestry (MNRF). 2022a. Natural Heritage Information Centre: Make Natural Heritage Map. Available online at: <https://www.ontario.ca/page/make-natural-heritage-area-map>

Ministry of Natural Resources and Forestry (MNRF). 2022b. Land Information Ontario. Available online at:
<https://www.ontario.ca/page/land-information-ontario>

Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide. Fish and Wildlife Branch. Wildlife Section. Science Development and Transfer Branch. Southcentral Sciences Section. 151 pp. Available at: <https://dr6j45jk9xcmk.cloudfront.net/documents/3620/significant-wildlife-habitat-technical-guide.pdf>

Ontario Nature. 2019. Ontario Reptile and Amphibian Atlas. Available online at:
<https://www.ontarioinsects.org/herp/index.html?Sort=0&area2=squaresCounties&records=all&myZoom=5&Lat=47.5&Long=-83.5>

Seburn, D.C. 2010. Recovery strategy for the Common Five-lined Skink (*Plestiodon fasciatus*) – Carolinian and Southern Shield populations in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. vi + 22 pp. Available online at:
<https://www.ontario.ca/page/common-five-lined-skink-recovery-strategy>

Toronto Entomologists' Association. 2022. Ontario Butterfly Atlas. Available online at:
<https://www.ontarioinsects.org/atlas/>

Wildlife Preservation Canada, the Xerces Society, the University of Ottawa, BeeSpotter, The Natural History Museum, London, and the Montreal Insectarium. 2022. Bumble Bee Watch: Bumble Sightings Map. Available online at:
https://www.bumblebeewatch.org/app/#/bees/map?filters=%7B%22sightingstatus_id%22:%5B%5D,%22species_id%22:%5B%2237%22%5D,%22province_id%22:%5B%5D%7D



Appendix D Vascular Plant Species List



Appendix D - Vascular Plant List for the CUM1 Community

Species Common Name	Scientific Name	Notes
Alfalfa	<i>Medicago sativa</i>	
Alsike Clover	<i>Trifolium hybridum</i>	
American Elm	<i>Ulmus americana</i>	Confined to drain remnant banks. Only one individual. DBH <5 cm
Bird Vetch	<i>Vicia cracca</i>	
Broadleaf Plantain	<i>Plantago Major</i>	
Bull Thistle	<i>Cirsium vulgare</i>	
Canada Anemone	<i>Anemone canadensis</i>	
Canada Goldenrod	<i>Solidago canadensis</i>	
Canada Thistle	<i>Cirsium arvense</i>	
Dwarf Mallow	<i>Malva neglecta</i>	
Common Cattail	<i>Typha latifolia</i>	
Common Dandelion	<i>Taraxacum officinale</i>	
Common Mullein	<i>Verbascum thapsus</i>	
Field Horsetail	<i>Equisetum arvense</i>	
Fleabane sp.	<i>Erigeron sp.</i>	
Hawthorn sp.	<i>Crataegus sp.</i>	Confined to drain remnant banks. Only one individual
Hedge Bedstraw	<i>Galium mollugo</i>	
Lesser Burdock	<i>Arctium minus</i>	
Manitoba Maple	<i>Acer negundo</i>	Along drain remnant banks. DBH <10 cm
Perennial Sow-thistle	<i>Sonchus arvensis</i>	
Queen Anne's Lace	<i>Daucus carota</i>	
Red Clover	<i>Trifolium pratense</i>	
Reed Canary Grass	<i>Phalaris arundinacea</i>	
White Clover	<i>Trifolium repens</i>	
White Willow	<i>Salix alba</i>	Confined to drain remnant banks. Only one individual. DBH < 10 cm
Wild Parsnip	<i>Pastinaca sativa</i>	
Wild Red Raspberry	<i>Rubus idaeus</i>	dense along drain remnant banks, sparse occurrences throughout Site
Yellow Rocket	<i>Barbarea vulgaris</i>	