Environmental Impact Study for 4497 O'Keefe Court, Ottawa, Ontario

Final Report

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Submitted To:

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List of Acronyms and Abbreviations

cm – centimetres
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. – *exempli gratia*
EIS – Environmental Impact Study
ELC – Ecological Land Classification
ESC – erosion and sediment control
ESA – *Endangered Species Act*
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 Environmental Impact Study (EIS) was prepared by Kilgour & Associates Ltd. (KAL; Appendix A) on behalf of the Properties Group Management Ltd. in support of a Site Plan Control Application for future commercial development at 4497 O'Keefe Court, Ottawa, Ontario (the "Site"; Figure 1).

An EIS is intended to review proposed development or site alteration in or adjacent to natural heritage features. 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 Location of the Site

2.0 ENVIRONMENTAL POLICY CONTEXT

Natural heritage policies and legislation relevant to this EIS are outlined below.

2.1 The Provincial Policy/Planning Statement, 2020/2024

The Provincial *Policy* Statement (PPS) in effect at the start of this study was issued under Section 3 of the Planning Act (Government of Ontario, 1990b). The PPS came into effect May 1, 2020. (Government of Ontario, 1990b). Natural features were afforded protections under Section 2.1 of the PPS. 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., woodlands, wetlands, wildlife 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; MNR, 2010).

Importantly, while the 2020 PPS was the version in effect at the start of this study, the Province subsequently approved the updated version as the Provincial *Planning* Statement (also "PPS") on August 20, 2024; it came into effect on October 20, 2024. The revised PPS is intended to simplify and integrate existing policies to achieve housing objectives while providing tools for municipalities to deliver on housing objectives. While the 2024 edition will formally be the planning document in effect going forward, other than renumbering the relevant policies, it includes no meaningful changes related to Natural Heritage considerations. As such, for the purposes of natural heritage review within this EIS, the two PPS versions are effectively equivalent.

2.2 City of Ottawa, 2021

The City of Ottawa Official Plan (OP; City of Ottawa, 2021) was updated and recently approved by the Ministry of Municipal Affairs and Housing as part of a comprehensive review. Pursuant to subsections 17(36.5) and (38.1) of the Planning Act, the decision of the Minister of Municipal Affairs and Housing regarding an official plan adopted in accordance with section 26 of the Planning Act is final and not subject to appeal. Accordingly, the new City of Ottawa Official Plan, as approved with modifications by the Minister, came into effect on November 4, 2022. The OP provides a vision for the future growth of the city and a policy framework to guide the city's physical development. The Official Plan includes a Natural Heritage Features map (Schedule C11-A), providing additional information on wetlands, watercourses, and wooded areas within the City boundaries (City of Ottawa, 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 for other species do not normally extend to privately owned land. However, the Federal Minister of ECCC can and has imposed 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 (*Chrysemus 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 obliges 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. This project falls under the jurisdiction of the Rideau Valley Conservation Authority (RVCA).

Bill 23, which was passed on November 28, 2022, and received Royal Assent the same day, introduced a series of legislative and proposed regulatory changes affecting conservation authorities. It is now in effect. Among the changes under Bill 23, the definition of "watercourse" was updated from an identifiable depression to a defined channel having a bed, and banks or sides.

3.0 PROPERTY IDENTIFICATION

The Site is approximately 6.88 hectares (ha) in size and is located at 4497 O'Keefe Court, Ottawa, Ontario (Lat: 45.273785°N and Long: -75.796776°W; Figure 1). The property was historically used as an aggregate extraction quarry as early as the 1970's. The zoning of the property is Rural General Industrial (RG), and it is currently undeveloped. The Site was previously stripped of vegetation during the development of Highway 416 west of the Site and has been regenerating since approximately 2008 (City of Ottawa, 2025). The Site is currently dominated by moist areas and surrounded by a deciduous forest.

The site is bordered by:

- Mapped unevaluated wetland and forest to the north;
- Lytle Park (baseball diamonds and soccer fields), forest, and an estate community to the east;
- O'Keefe Court, Highway 12, Highway 416, and regenerating meadow/thicket to the south; and
- Highway 416 and commercial properties to the west.

4.0 METHODOLOGY

4.1 Desktop and Background Data Review

4.1.1 General Records Review

Background information was obtained from online databases and geographic information system mapping applications to review relevant information. Aerial imagery from Google Earth, the RVCA Geoportal and the City's geoOttawa systems was used to identify existing features and confirm information found in the background review.

4.1.2 Species at Risk Screening

The review of existing information included a preliminary SAR screening for species listed under the federal SARA and provincial ESA having some record of occurrence within the broader vicinity of the Site. The screening was completed following the *Draft Client's Guide to Preliminary Screening for Species at Risk* (MECP, 2019). The results of the screening process informed the list of species that were considered in the assessment of the potential for development impact(s) to SAR or SAR habitat. Previously, the results of the preliminary SAR screening were forwarded to MECP for comment and review. As of 2023, however, the MECP no longer provides this service.

Initial background information on SAR was obtained from resources including:

- Species at Risk in Ontario (SARO; Ministry of Environment, Conservation, and Parks; MECP, 2023);
- Species at Risk Public Registry (Government of Canada, 2025);
- Natural Heritage Information Centre (NHIC; Ministry of Natural Resources, and Forestry; MNRF, 2023);
- Land Information Ontario (MNRF, 2025a);
- Aquatic Species at Risk Map (DFO, 2023);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019);
- Ontario Breeding Birds Atlas (Birds Canada, Canadian Wildlife Service (Environment and Climate Change Canada), et al., 2009);
- Ontario Butterfly Atlas (Toronto Entomologists' Association, 2024);
- eBird (The Cornell Lab of Ornithology, 2025);
- iNaturalist (California Academy of Sciences and National Geographic Society, 2025);
- 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, 2024); and

- Ontario Geotechnical Boreholes (Ontario Ministry of Mines, 2012).

4.1.3 Agency Oversite

The Site is located within the jurisdiction of the City of Ottawa and the Rideau Valley Conservation Authority (RVCA).

4.2 Field Surveys

4.2.1 Site Work Summary

KAL undertook a field program in the summer of 2023 to document existing ecological conditions on the Site and to confirm the results of the background review. Table 1 provides a summary of all field visits. Specific details of each program are further described under each study type (e.g. breeding bird surveys) in the relevant sub-sections following through the remainder of Section 4.2. Specific survey stations are shown in Figure 2.

Table 1 Field Study dates

Date	Purpose	Conditions	Personnel
April 12, 2023	• HDFA #1	• 15°C • Minimal cloud, no precipitation • Light Breeze	• Nick Moore • Rob Hallet
April 12, 2023	• Frogs #1	• 16°C • Clear night sky, no precipitation • Light Breeze	• Anthony Francis
June 5, 2023	• HDFA #2 • Breeding Bird Survey #1 • ELC • Trees	• 14°C • 100% cloud cover, no precipitation • Light Breeze	• Kurtis Westbury
June 15, 2023	• Breeding Bird Survey #2 • Bat Monitor Setup	• 20°C • 10% cloud cover, no precipitation • Very Light Breeze	• Kurtis Westbury
July 7, 2023	• Breeding Bird Survey #3 • HDFA #3 • Retrieve Bat Monitor	• 22°C • 95% cloud cover, no precipitation • Light Breeze	• Nicholas Schulz

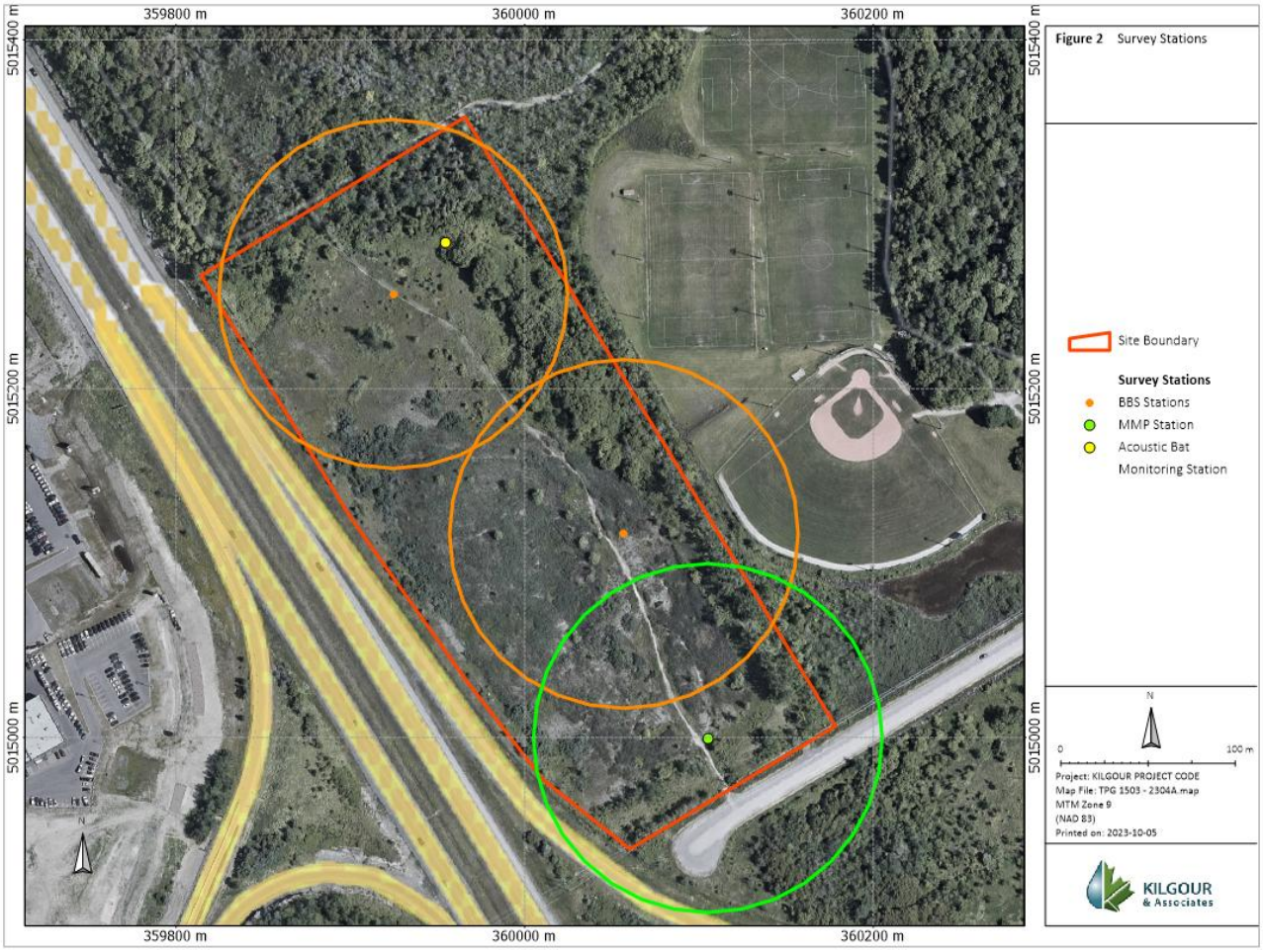


Figure 2 Survey Stations

4.2.2 Headwater Drainage Feature Assessment

A Headwater Drainage Feature Assessment (HDFA; Appendix B) was conducted for the Site. The HDFA describes surface water features on and directly adjacent to the Site following the methods identified within *Evaluation, Classification and Management of Headwater Drainage Features Guidelines* (Toronto and Region Conservation Authority & Credit Valley Conservation, 2013).

Headwater Drainage Features (HDFs) are typically non-permanently flowing drainage features that are important for maintaining healthy watersheds. HDFs may not have defined beds or banks and can include first-order and zero-order intermittent and ephemeral channels, swales, and connected headwater wetlands. Conservation Authorities are concerned with land development activities that can alter and/or eliminate HDFs. Such activities could have broad implications for water quality and quantity, recharge/infiltration, and the overall health of the local HDF and downstream aquatic habitats.

The HDFA identified three HDFs on the Site (HDFs A-C; Figure 3). Surface water features were characterized during three surveys on April 12, June 5, and July 7, 2023, to coarsely assess water levels to determine which features may permanently contain water and therefore provide perennial fish habitat. These assessments also included characterizations of channel morphology and potential sediment transport and storage capacity of these features, along with their riparian and instream vegetation. Because there was no surface water remaining in the HDFs during the survey on June 5, 2023, fish community sampling did not occur as a part of the broader HDFA process (Appendix B).

4.2.3 Vegetation

4.2.3.1 Ecological Land Classification

A desktop review of available aerial imagery and preliminary field visits informed how the Site may be divided into vegetation communities based on variation in land cover, topography, and vegetation structure. Vegetation communities on the Site were identified and mapped in the field using standard Ecological Land Classification (ELC) methods for Ontario (Lee et al., 1998). This method 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. It 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.

During surveys on June 5, 2023, 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. Representative photos of each ELC unit on the Site were taken and are included with the community descriptions in this report.

4.2.3.2 Tree Survey

A tree survey was performed for the Site on June 5, 2023, following Tree Conservation Report (TCR) guidelines set forth by the City of Ottawa (City of Ottawa, 2020). All trees with a diameter at breast height (DBH) >10 cm on the Site were identified, enumerated, mapped, their DBH measured, and their general health and condition documented. Butternut (*Juglans cinerea*) and Black Ash (*Fraxinus nigra*) trees (both Endangered under the ESA) were also specifically searched for. The TCR for the project is available in Appendix C.

"Wildlife" trees with DBH >25 cm were looked for to assess bat and Chimney Swift habitat potential. Wildlife trees are standing live or dead trees with cracks, crevices, hollows, cavities, and/or loose or naturally exfoliating bark in early stages of decay (decay class 1-3; MNRF, 2015b; MNRF, 2017).

4.2.4 Breeding Birds

Morning breeding bird surveys were performed via point count surveys following the *Ontario Breeding Bird Atlas Guide for Participants* (Birds Canada, Environmental Canada, et al., 2009; Ontario Breeding Bird Atlas, 2021). Breeding bird surveys are to be completed from survey stations that, combined, provide suitable

viewing of all habitats on a site on calm weather days with light wind (≤3 on the Beaufort scale[1]) and no precipitation.

Per Birds Canada et al. (2009, 2021), two rounds of surveys conducted between sunrise and five hours after sunrise between May 24 and July 10, with a minimum of seven days between survey dates are used to confirm the presence of resident/nesting birds. An additional (third) bird survey is required under MNRF protocols for at-risk bird species that nest in field habitats (e.g., MNRF's *Bobolink Survey Methodology*, 2011). Since the Site has the potential to provide habitat for at-risk grassland bird species (e.g., Bobolink and Eastern Meadowlark), three rounds of breeding bird surveys were conducted.

For the breeding bird surveys, two survey stations were established in representative habitats on the Site (Figure 2). All incidental observations were recorded while moving between survey points, as well as during other field visits. Birds were identified by vocalization and/or direct visual observation.

Bird species were classed as regionally rare based on an analysis of data from the Atlas of Breeding Birds of Ontario (Birds Canada, Canadian Wildlife Service (Environment and Climate Change Canada), et al., 2009) based on Hill's Site Regions, now Ecoregions. The *Ontario Wetland Evaluation System: Southern Manual* (MNRF, 2022) also assisted with classifying regionally significant breeding birds in the area (Region 6). The presence of provincially and federally significant species was based on species listed under the ESA and SARA, respectively, and any other non-SAR species that are tracked by the NHIC (these species are considered provincially significant; MNR, 2010).

4.2.5 Anurans

Anuran (frog and toad) surveys were performed following the Marsh Monitoring Program (Birds Canada, Environmental Canada, et al., 2009). This protocol calls for multiple survey stations across a site to capture spatial and habitat variability. The Marsh Monitoring Program advises that each station (Figure 2) be visited a minimum of three times at night, no less than 15 days apart, during the spring and early summer. Following this protocol, the timing of the three anuran surveys is based on nighttime air temperature:

- Early breeders (Western Chorus Frog, Wood Frog, Spring Peeper): above 5°C;
- Mid-season breeders (Northern Leopard Frog, Pickerel Frog, Mink Frog, American Toad, Grey Treefrog): above 10°C; and
- Late breeders (Green Frog, Bullfrog): above 17°C.

Anuran surveys are to begin one half hour after sunset and end before midnight on evenings with appropriate temperatures and light winds (≤3 on the Beaufort Scale[1]). Additional observations of amphibians were made throughout the spring and summer during other field visits.

[1]The Beaufort Wind Force Scale is an empirical measure that relates wind speed to observed conditions at sea or land. The scale is as follows: **0**: calm, smoke rises vertically, wind speed <1 km/hr; **1**: light air, smoke drift indicates wind direction, leaves and wind vanes are stationary, wind speed = 1.1 – 5.5 km/hr; **2**: light breeze, wind felt on exposed skin, leaves rustle, wind vanes begin to move, wind speed = 5.6-11 km/hr; **3**: gentle breeze, leaves and small twigs constantly moving, light flags extended, wind speed – 12-19 km/hr.

4.2.6 Bats

Bat monitoring was completed following acoustic surveys under MNRF's *Survey Protocol for Species at Risk Bats within Treed Habitats* (2017; Figure 2). This is currently the recommended protocol for confirming the presence/absence of Little Brown Myotis, Northern Myotis, and Tri-colored Bat, where it is determined that potentially suitable habitat for the establishment of maternity roosts is present.

All species of bats that may occur on and adjacent to the Site are detectable following MNRF (2017) protocols if ultrasonic acoustic monitors are used, and the signal-to-noise ratio can be analyzed from oscillogram displays to identify bat calls to species level. Under this protocol, acoustic monitors are to be installed for a minimum of 10 nights between June 1 and June 30, with recordings commencing after dusk and continuing for five hours. Survey conditions include ambient temperature >10°C, light wind, and no precipitation.

Kaleidoscope Pro analysis software was used to automatically detect and identify bat calls from acoustic data. This software typically has an identification accuracy rate of ~70-80%; approximately 10% of the acoustic data were manually verified.

5.0 RESULTS

5.1 Surface Water, Groundwater, and Fish Habitat

Two partially flooded areas with scattered patches of standing water were observed during the first OSAP investigation on April 11, 2023 (Appendix B). These areas were observed to be dry with no remaining standing water in the subsequent site visit on June 5, 2023. These flooded areas were determined to be disconnected from the drainage features and functions of the Site and surrounding area, as determined in hydrogeological studies undertaken by Paterson Group Consulting Engineers (2007, 2008). They are depressional areas that resulted from historic site alterations, regrading works and changes to the overall drainage character in the area, and that only receive water from ephemeral flows and large precipitation events. It was determined in the Paterson (2007, 2008) studies that a historic infilled trench traverses the Site centrally from west to east and consists of fine-grained soil. The findings of that study indicated that the degree of compaction and material used caused the infilled trench to act as a hydraulic barrier to subsurface flows, causing groundwater to be forced to the surface. As discussed in the EIS, the flooded areas were not found to support amphibian breeding and do not constitute amphibian breeding, fish or turtle habitat. As such, the flooded areas are not considered to be headwater features per se.

The HDFA identified three (3) HDFs located on and adjacent to the Site (Figure 3). HDF A is associated with the cultural meadow and forested vegetation community on the Site, while HDFs B and C are associated with the O'Keefe Court roadside ditch.

HDF A is a channelized feature that originates in the cultural meadow community at the western Site boundary, flowing through a young deciduous forest and connecting to a southeastern flowing drain that runs along the eastern forest boundary adjacent to Lytle Park. HDF A was observed to have minimal flow during spring freshet. This constructed drainage channel had captured surface flows beneath the 416 through an outlet headwall. In 2015, however, that outlet was grouted, and this feature currently only captures spring melt. Following the HDFA Guide flow chart linking component classification to management directives, this reach leads to a management directive of **Maintain Recharge.**

HDF B is a roadside ditch that flows eastward along the southern Site boundary. HDF B was observed to have minimal flow and baseflow was determined to be influenced by a groundwater upwelling (for a brief period in the spring) located at the southeast Site boundary directly adjacent to Highway 416 and a dry roadside ditch. Following the HDFA Guide flow chart linking component classification to management directives, this reach leads to a management directive of **Maintain Recharge**.

HDF C is a channelized feature that flows southward along the southeastern Site boundary connecting to HDF B downstream. Some areas of standing water and small pools were observed in HDF C during the spring visit. Following the HDFA Guide flow chart linking component classification to management directives, this reach leads to a management directive of **Maintain Recharge.**

All three HDF's on Site lead to a management directive of **Maintain Recharge** which requires that the feature:

1) *Maintain overall water balance by providing mitigation measures to infiltrate clean stormwater, unless the area qualifies as an Area of High Aquifer Vulnerability under the Oak Ridges Moraine Conservation Plan (ORMCP) or Significant Recharge Areas under the Source Water Protection Act. These areas will be subject to specific policies under their respective legislation.*

2) *Terrestrial features may need to be assessed separately through an Environmental Impact Study to determine whether there are other terrestrial functions associated with them.* (TRCA, 2013).

Ultimately, based on the management directive of **Maintain Recharge** and with consideration to terrestrial features (as discussed within this report), there is no requirement to retain the feature per se, but on-site flow, outlet flows, and overall water balance for the area must be maintained by providing mitigation measures to infiltrate clean stormwater.

No fish habitat was identified or observed on the Site.

The small watercourse along the western side of Lytle Park located east of the Site was not included in the HDFA as the watercourse is not located on Site. However, it is considered throughout this report as HDF A discharges into this watercourse and watercourse setback limits occur on Site. The watercourse originates from the forested property to the north, runs along the western boundary of the park, into the pond at the south end of Lytle Park, and ultimately discharges into the upper reaches of the O'Keefe Drain. This feature was briefly observed during the HDFA that occurred on April 11, 2023. At the time of that site visit, there was minimal surface flow with dense monoculture of Reed Canary Grass (emergent vegetation indicative of intermittent water presence) throughout the feature. The watercourse discharges into the pond in Lytle Park, leading to increased water temperatures in the system. The linearized feature was likely constructed to convey surface flows away from the soccer and baseball fields, and provides minimal ecological value to the area. The surrounding habitat of mowed lawn likely introduces increased nutrients, leading to a eutrophic system. If any fish are present in the system, it is likely for a brief period in the spring; however, it cannot be confirmed if it is fish habitat at this time.

5.2 Landforms, Soils, and Geology

The Site is located within the Ottawa Valley Clay Plains physiographic region (Chapman & Putnam, 1984). The surficial geology of the region is composed of clay and silt underlying erosion terraces. The upper part of the soil profile contains marine deposits.

The original four soil associations for the Site include: Farmington, Grenville, Dalhousie, and North Gower (Schut & Wilson, 1987). As such, the underlying soils were moderately course to medium course texture (sandy loam, fine sandy loam, very fine, loam, silt loam, and silt; Schut & Wilson, 1987). The slope class for the property varies between very gently sloping to gently sloping. The Farmington association is made up of soils developed in a moderately coarse-textured, thin veneer (10 to 25 cm) of stony undifferentiated drift material, overlaying limestone and dolomite bedrock (Schut & Wilson, 1987). The Grenville association consists of soils developed in moderately coarse to medium-texture stony till, while the Dalhousie association is made up of soils developed in fine-textured, modified marine materials. Finally, the North Gower association consists of soils developed in moderately fine-textured, modified marine parent materials.

The Site, however, was subject to aggregate extraction operations through the 1960s and 1970s and was regraded in the 1990s as a construction support yard for the building of Highway 416 (geoOttawa). The topsoil on the Site is thus now composed primarily of limestone quarry tailings. A berm, several meters in height, was constructed along the eastern edge of the property sometime prior to 1991, presumably in conjunction with the construction of Lytle Park.

5.3 Vegetation

5.3.1 Ecological Land Classification

A vegetation survey was conducted during the site visit on June 5, 2023, and delineated five distinct vegetation communities present on the Site. Vegetation communities observed include a Fresh - Moist Manitoba Maple Lowland Deciduous Forest Type (FODM7-7), a Cultural Meadow (CUM1), a Common Reed Graminoid Mineral Meadow Marsh (MAMM1-12), a Buckthorn Deciduous Shrub Thicket (THDM2-6), and a Sumac Deciduous Shrub Thicket Type (THDM2-1). The vegetation communities observed on the Site are described in detail below and are shown in Figure 3.

Figure 3 Existing Conditions

5.3.1.1 Fresh - Moist Manitoba Maple Lowland Deciduous Forest Type (FODM7-7)

A Fresh - Moist Manitoba Maple Lowland Deciduous Forest Type (FODM7-7; Figure 4) is located along the north and eastern boundaries of the Site. The forest canopy was dominated by Manitoba Maple (*Acer negundo*) and Balsam Poplar (*Populus balsamifera*) with Trembling Aspen (*Populus tremuloides*). The understory and forest edges were composed of species of Green Ash saplings (*Fraxinus pennsylvanica*), Common Buckthorn (*Rhamnus cathartica L.*), and saplings of the tree species listed above. The FODM7-7 makes up about 1.7 (ha) and is part of a larger forest extending north of the Site.

Figure 4 Fresh – Moist Poplar Deciduous Forest Type (FODM7-7). Photo taken within the northern forest patch on June 5, 2023.

5.3.1.2 Cultural Meadow – CUM1

A Cultural Meadow (CUM1; Figure 5) is located in the center of the northwestern portion of the site and is about 1.3 (ha). It is dominated by grass and has very limited shrub and tree cover. Vegetation cover is composed of primarily Kentucky Blue Grass (*Poa pratensis*), Wild leek (*Allium tricoccum*), Common Buckthorn (*Rhamnus cathartica L.*), and Trembling Aspen (*Populus tremuloides*). A second strip of cultural meadow occurs along the southern edge of the Site flanked by scrubby pine hedgerows.

Figure 5 Cultural Meadow (CUM1). Photo taken looking south from the northern end of the Site on June 5, 2023.

5.3.1.3 Common Reed Graminoid Mineral Meadow Marsh (MAMM1-12)

A Common Reed Graminoid Mineral Meadow Marsh (MAMM1-12; Figure 6) is located throughout the southwestern portion of the Site. This area was characterized by common reed grass (*Phragmites*), Reed Canary Grass (*Phalaris arundinacea*), and occasional cattails (*Typha latifolia L.*). The feature occurs within an area previously excavated as part of mineral extraction works through the 1960s and 70s, then regraded in the 1990s (geoOttawa). The disconnected, low-lying pocket receives an influx of surface water runoff from the highway in the spring generating the meadow marsh conditions, but fully dries through summer leaving the feature as a relatively dry Phragmites meadow.

5.3.1.4 Buckthorn Deciduous Shrub Thicket (THDM2-6)

Within the center of the Common Reed Meadow Marsh (MAMM1-12), a dense stand of Common Buckthorn (*Rhamnus cathartica*) forms a Buckthorn Deciduous Shrub Thicket (THDM2-6; Figure 7) inclusion.

Figure 6 Common Reed Mineral Shallow Marsh Type (MAMM1-12). Photo taken looking north from the southern end of the Site on June 5, 2023.

Figure 7 Buckthorn Deciduous Shrub Thicket Inclusion (THDM2-6)

5.3.1.5 Sumac Deciduous Shrub Thicket Type (THDM2-1)

A Sumac Deciduous Shrub Thicket Type (THDM2-1; Figure 8) is located west of the FODM7-7 and follows it until the Northern end of the Site. This thicket is predominantly made up of Staghorn sumac (*Rhus typhina*) with various grass species. This area is about 0.6 (ha) in size.

Figure 8 Sumac Deciduous Shrub Thicket Type (THDM2-1).

5.3.2 Tree Survey

The TCR prepared for the Site includes a comprehensive tree inventory and assessment of the fate of trees on the Site (Appendix C). Based on the preliminary site plan approximately 90% of the trees on-site will be removed from the proposed development area. No Butternut or Black Ash were observed on the Site.

5.4 Breeding Birds

A summary of the weather conditions during the breeding bird surveys conducted during the morning of June 5, June 15, and July 7, 2023, is provided in Table 2.

Table 2 Dates and weather conditions during breeding bird surveys

Date	Wind (Beaufort Scale)	Air Temperature (°C)	Cloud Cover (%)	Precipitation
2023-06-05	2	14	100	None
2023-06-15	1	20	10	None
2023-07-07	2	22	95	None

A total of 22 bird species were detected on the Site via morning breeding bird surveys and incidental observations (Table 3). The following bird species were commonly observed on the Site, detected at all survey stations on all three survey dates: Song Sparrow (*Melospiza melodia*).

Table 3 Summary of birds detected during breeding bird surveys

Common Name	Scientific Name	Station(s) Observed	Date(s) Observed	Highest Breeding Evidence[1]
American Crow	*Corvus brachyrhynchos*	2	2023-07-07	PO
American Goldfinch	*Spinus tristis*	1,2	2023-06-15	PO
American Redstart	*Setophaga ruticilla*	1,2	2023-06-05	OB
American Robin	*Turdus migratorius*	1,2	2023-06-15	PO
Baltimore Oriole	*Icterus galbula*	2	2023-06-15	OB
Common Yellowthroat	*Geothlypis trichas*	1,2	2023-06-05, 2023-06-15	OB
Dark-Eyed Junco	*Junco hyemalis*	1	2023-06-05	OB
Eastern Kingbird	*Tyrannus tyrannus*	1	2023-06-05	OB
House Finch	*Haemorhous mexicanus*	1	2023-06-05	OB
House Wren	*Troglodytes aedon*	1,2	2023-07-07	PO
Killdeer	*Charadrius vociferus*	1	2023-06-05, 2023-06-15	PO
Mallard	*Anas platyrhynchos*	1	2023-06-05	PR
Mourning Dove	*Zenaida macroura*	1	2023-06-05	OB
Northern Cardinal	*Cardinalis cardinalis*	1,2	2023-07-07	PO
Northern Flicker	*Colaptes auratus*	2	2023-06-05	OB
Northern Mockingbird	*Mimus polyglottos*	1	2023-06-15	PO
Red-Eyed Vireo	*Vireo olivaceus*	2	2023-06-05	OB
Red-Winged Blackbird	*Agelaius phoeniceus*	1,2	2023-06-05, 2023-06-15	OB
Song Sparrow	*Melospiza melodia*	1,2	2023-06-05, 2023-06-15, 2023-07-07	OB
Warbling Vireo	*Vireo gilvus*	1	2023-06-05	OB
Yellow Warbler	*Setophaga petechia*	1	2023-06-05, 2023-06-15	OB
Swamp Sparrow	*Melospiza georgiana*	1	2023-06-05	OB

[1] Breeding evidence is based on the following:

- **Observed** = Species observed in its breeding season (no breeding evidence).
- **Possible** = Species observed in its breeding season in suitable breeding habitat; singing male(s) present or breeding calls heard in suitable nesting habitat in breeding season.
- **Probable** = At least seven individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), all heard during the same visit and in suitable nesting habitat during the species' breeding season; pair observed in suitable nesting

habitat in nesting season; permanent territory presumed through registration of territorial song or the occurrence of an adult bird at the same place in breeding habitat on at least two days a week or more apart during the breeding season; courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation; visiting probable nest site; agitated behaviour or anxiety calls of an adult; brood patch on adult female or cloacal protuberance on adult male; nest building or excavation of nest hole by a wren or a woodpecker.

- **Confirmed** = Nest-building or excavation of nest hole by a species other than a wren or a woodpecker; distraction display or injury feigning; used nest or eggshells found (occupied or laid within the period of the survey); recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight; adult leaving or entering nest sites in circumstances indicating an occupied nest; adult carrying fecal sac; adult carrying food for young; nest containing eggs; nest with young seen or heard.

No at-risk bird species or regionally significant bird species (Cadman et al., 1987; MNRF, 2014a) were observed.

5.5 Anurans

A summary of the weather conditions during anuran surveys conducted on April 12, 2023, is provided in Table 4.

Table 4 Dates and weather conditions during anuran surveys

Date	Wind (Beaufort Scale)	Air Temperature (°C)	Cloud Cover (%)	Precipitation
2023-04-12	2	16	0	None

No anuran species were observed during evening aural surveys. After the first anuran survey, KAL biologists determined that the Site lacked sufficient water to support frog habitat. Therefore, no further anuran surveys were conducted.

No amphibians were observed incidentally while on the Site.

5.6 Bats and Other Mammals

An acoustic bat monitor was installed at the northeast section of the Site ("AM"). Acoustic monitoring was conducted over 13 nights via 2 survey stations (Table 4). Light rain occurred for short periods on June 12, 2023, and high winds occurred on June 3 and June 12, 2023. Conditions were otherwise ideal with warm temperatures (≥15 °C) and low winds.

Table 5 Summary of bat detections

Survey Station	Survey Dates	Habitat Description	Big Brown Bat	Eastern Red Bat	Hoary Bat	Silver-haired Bat	Tri-Colored Bat	Mean Calls per Night
AM-1	2023-06-15 to 2023-07-07	Mixed forest opening to a small meadow	690	2	977	493	5	94

5.7 Species at Risk

The initial assessment of species listed under SARA and ESA was completed to identify species having some potential to occur within the broader vicinity of the Site. Species listed Provincially as Endangered or

Threatened are afforded species and habitat protection under the ESA. Federal protections under SARA are always in force for listed species of fish and migratory birds. For species of other groups, SARA normally only applies on federal lands or on projects having some level of participation with or oversight by the federal government. However, SARA-based protections can be imposed by ministerial order on a case-by-case basis in situations where provincial-level protections are deemed inadequate to otherwise protect a species. Such protections are not expected to apply to the Site.

The initial SAR records review identified a list of species 44 species (Appendix D1) to be considered for this site. Species on this list were assessed to determine their potential for interaction with future site development considering ELC-based land cover (i.e. habitat availability) and the preferred habitat requirements of the species (Appendix D2).

A total of thirteen species subject to protections as SAR under the ESA and/or SARA were initially considered to have a moderate to high potential to occur on the Site (Table 6). Of those thirteen species, only one (Tri-colored Bat) was observed to occur on the Site. One other species (Blanding's Turtle) has nominal Category 3 habitat in the southeast corner of the Site but was not observed there.

Table 6 Species at risk with moderate or high potential to interact with the project

Common Name	Taxonomic Name	Status under ESA	Status under SARA	Potential to Interact with Site Development
Anurans				
Western Chorus Frog	*Pseudacris triseriata*	Not Listed	Threatened	Not detected on the Site
Birds				
Barn Swallow	*Hirundo rustica*	Special Concern	Threatened	Not detected on the Site
Bobolink	*Dolichonyx oryzivorus*	Threatened	Threatened	Not detected on the Site
Eastern Meadowlark	*Sturnella magna*	Threatened	Threatened	Not detected on the Site
Eastern Wood-Peewee	*Contopus virens*	Special Concern	Special Concern	Not detected on the Site
Olive-sided Flycatcher	*Contopus cooperi*	Special Concern	Threatened	Not detected on the Site
Wood Thrush	*Hylocichla mustelina*	Special Concern	Threatened	Not detected on the Site
Mammals				
Eastern Small-footed Myotis	*Myotis leibii*	Endangered	Not Listed	Not detected on the Site
Little Brown Myotis	*Myotis lucifugus*	Endangered	Endangered	Not detected on the Site
Northern Myotis	*Myotis septentrionalis*	Endangered	Endangered	Not detected on the Site
Tri-colored Bat	*Perimyotis subflavus*	Endangered	Endangered	Limited/Transient presence only - low probability of negative interactions if tree clearing occurs outside of the active season
Reptiles				
Blanding's Turtle	*Emydoidea blandingii*	Threatened	Endangered	Not detected on the Site Regardless, the southeast corner of the Site qualifies as nominal Category 3 habitat given its proximity to the Lylle Park Pond.
Vascular Plants				
Butternut	*Juglans cinerea*	Endangered	Endangered	Not detected on the Site

Where it is determined through the EIS process that there is an anticipated impact of the development on SAR, an Information Gathering Form (IGF) is typically submitted to MECP for further review. The IGF process,

however, is not generally necessary where the SAR management process may be handled through a Notice of Activity process associated with the Ontario Conservation Fund under O.Reg. 829/21.

5.8 Significant Natural Heritage Features

The Stoney Swamp Significant Wetland Complex occurs approximately 560 m to the north of the property; that distance is considered sufficient to exclude the feature from further consideration for this project. There are no significant valleylands or Life Science Areas of Natural and Scientific Interest on or adjacent to the site (Figure 1).

The sliver of woodland occurring on the northern edge of the Site extends over ~40 ha of the adjacent properties to the north and east. As these areas, however, are subject to an existing plan of subdivision, the forest cover on the Site is not considered to constitute significant woodland.

5.9 Significant Wildlife Habitat

The Significant Wildlife Habitat (SWH) Criteria Schedule for Ecoregion 6E (MNRF, 2015a) identifies four main types of significant wildlife habitat: seasonal concentration areas, rare vegetation communities, specialized habitats for wildlife and habitats of Species of Conservation Concern.

5.9.1 Seasonal Concentration Areas

The background information reviewed for the Site did not identify any seasonal concentration areas for animals. No obvious signs or evidence of use as a seasonal concentration area were observed and none are likely to occur on the Site.

5.9.2 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 forests, savannahs, and tallgrass prairies. No rare vegetation communities are present on the Site.

Specialized Wildlife Habitat

Specialized Wildlife Habitat typically includes waterfowl nesting areas, Bald Eagle and Osprey nesting, foraging and perching habitat, woodland raptor nesting habitat, turtle nesting areas, seeps and springs, woodland and wetland amphibian breeding habitat, and woodland area-sensitive bird breeding habitat. No Specialized Wildlife Habitat was identified on the Site.

5.9.3 Habitats of Species of Conservation Concern

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

species. Our background review did not identify the presence of any of the Habitats of Species of Conservation Concern and no Species of Conservation Concern were observed on the Site.

5.10 Forest Fire Hazard

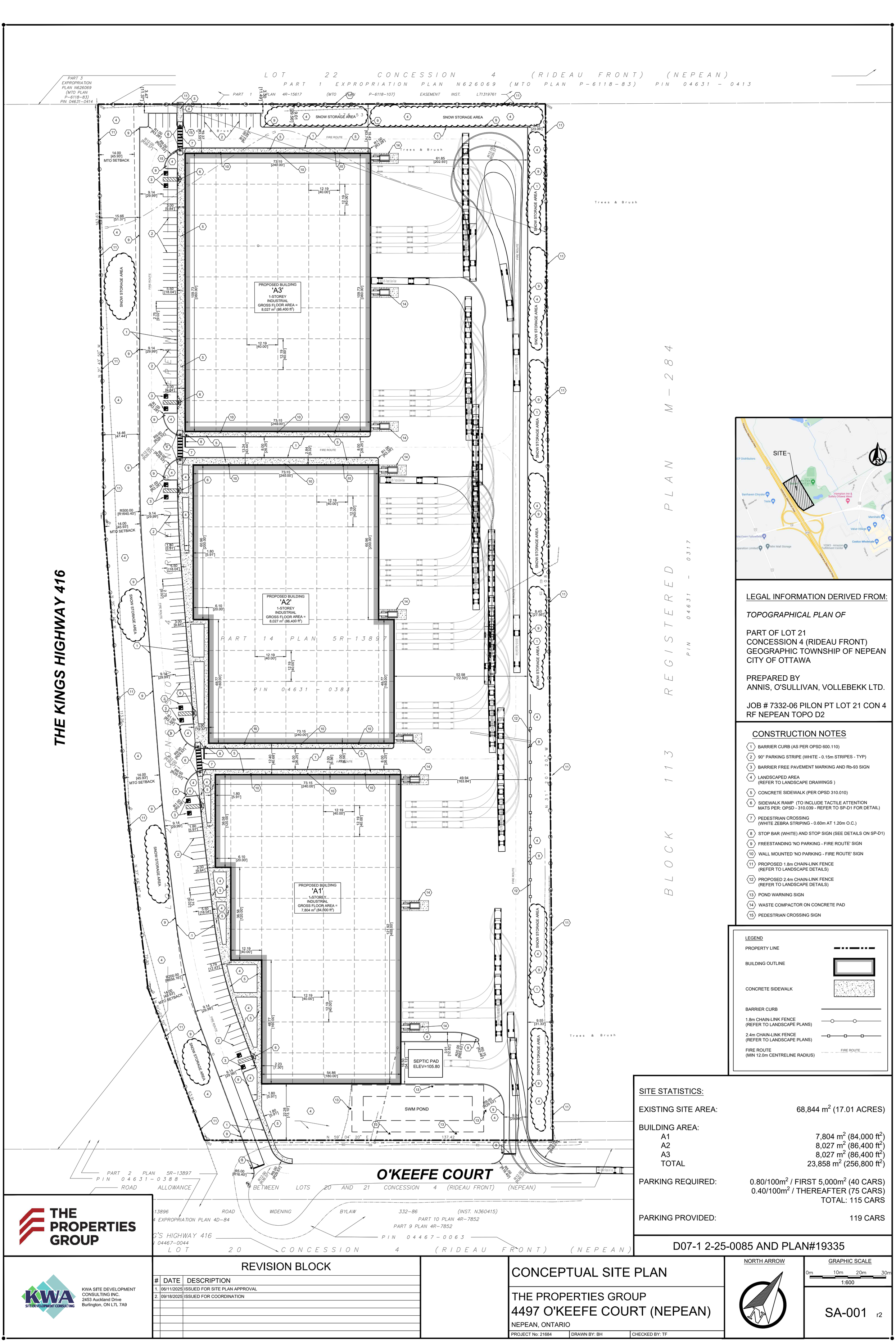
Fresh - Moist Manitoba Maple Lowland Deciduous ecosite adjacent to the development area, as small deciduous forest (negligible presence of coniferous trees species) on moist soils is considered to have a low forest fire risk. The City's mapping of Potential Hazardous Forest Types for Wildfire within the geoOttawa system does not indicate and potential for fire hazard at that Site but does rank all other nearby forests (which generally appear similar in form) as having low to moderate fire hazard potential.

6.0 DESCRIPTION OF THE PROPOSED PROJECT

The proposed development includes three commercial buildings, approximately 7,000-8,000 m^2, with parking spaces along the west and northern property boundary (Figure 9). A SWM pond will be constructed in the southern portion of the site to capture surface runoff and stormwater prior to its conveyance to the roadside ditch along O'Keefe Court. The SWM pond will be located at relatively lower elevations than the remainder of the Site to effectively receive site runoff, but will not be lower in elevation than the downstream receiver (roadside ditch along O'Keefe Court) to which it drains. The required elevation for the SWM pond relative to the Site, as well as the proposed site development plan, requires the entire Site to be regraded (KWA, 2025). The future creation of the SWM facility will be subject to future ECA compliance as detailed in the Functional Servicing and Stormwater Management Report (KWA, 2025). All existing vegetation on the Site will be cleared to accommodate site grading and future construction. Plantings will occur where possible as per the Landscape Plan prepared for the Site (James B. Lennox, 2025).

Headwater features occurring *within* the development area will be fully removed/realigned. None of these features on the Site provides fish habitat or services other than limited conveyance of spring runoff. Per the HDFA (Appendix B), these features have minimal management recommendations limited to the maintenance of the hydrological functioning of the area (i.e., with no requirement to maintain the specific features per se). This recommendation allows for the removal of these features, with confirmation from the Grading Plan and a quantitative investigation (KWA, 2025) of the site that conveyance of any surface water runoff will be captured by site grading in flow into the City of Ottawa's stormwater management system as well as the roadside ditches along O'Keefe Court. Necessary permit approvals are required from the RVCA with consultation with the DFO.

The intermittent watercourse adjacent to the Site in Lytle Park will remain untouched, and development will be set back from this watercourse a minimum of 12 m. The existing vegetation within the portion of the setback from the watercourse located on the Site will be temporarily removed as part of the re-grading of the Site (i.e. retaining at least 4 m of vegetation during the construction period). The established buffer along the eastern side of the property, however, will be revegetated through a tree planting program, which will ensure and improve shading to the watercourse (James B. Lennox, 2025). As per City of Ottawa Parkland requirements, a 1.8 m chain-link fence must be installed upon the eastern property line. This fence will be placed within the buffer lands; however, it is anticipated to have a minimal impact to the ecological function of the buffer (i.e. the provision of shade and allochthonous input to the channel, and/or habitat space for local urban birds and small mammals).


LOT 22 CONCESSION 4 (RIDEAU FRONT) (NEPEAN)
PART 1 EXPROPRIATION PLAN N626069 (MTO PLAN P-6118-83) PIN 04631 - 0413
PART 3 EXPROPRIATION PLAN N626069 (MTO PLAN P-6118-83) PIN 04631-0414
PART 1 PLAN 4R-15617 (MTO PLAN P-6118-107) EASEMENT INST. LT1319761
THE KINGS HIGHWAY 416
O'KEEFE COURT
BETWEEN LOTS 20 AND 21 CONCESSION 4 (RIDEAU FRONT) (NEPEAN)
PART 2 PLAN 5R-13897
PIN 04631-0388
ROAD ALLOWANCE
PART 14 PLAN 5R-13897
PIN 04631 - 0383
PIN 04631 - 0384
PIN 04631 - 0317
BLOCK 113
REGISTERED PLAN M-284
PROPOSED BUILDING 'A3' 1-STOREY INDUSTRIAL GROSS FLOOR AREA = 8,027 m² (86,400 ft²)
PROPOSED BUILDING 'A2' 1-STOREY INDUSTRIAL GROSS FLOOR AREA = 8,027 m² (86,400 ft²)
PROPOSED BUILDING 'A1' 1-STOREY INDUSTRIAL GROSS FLOOR AREA = 7,804 m² (84,000 ft²)
SNOW STORAGE AREA
FIRE ROUTE
SEPTIC PAD ELEV=105.80
SWM POND
Trees & Brush
SITE
LEGAL INFORMATION DERIVED FROM:
TOPOGRAPHICAL PLAN OF
PART OF LOT 21
CONCESSION 4 (RIDEAU FRONT)
GEOGRAPHIC TOWNSHIP OF NEPEAN
CITY OF OTTAWA
PREPARED BY
ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
JOB # 7332-06 PILON PT LOT 21 CON 4 RF NEPEAN TOPO D2
CONSTRUCTION NOTES
1 BARRIER CURB (AS PER OPSD 600.110)
2 90° PARKING STRIPE (WHITE - 0.15m STRIPES - TYP)
3 BARRIER FREE PAVEMENT MARKING AND Rb-93 SIGN
4 LANDSCAPED AREA (REFER TO LANDSCAPE DRAWINGS)
5 CONCRETE SIDEWALK (PER OPSD 310.010)
6 SIDEWALK RAMP (TO INCLUDE TACTILE ATTENTION MATS PER: OPSD - 310.039 - REFER TO SP-D1 FOR DETAIL)
7 PEDESTRIAN CROSSING (WHITE ZEBRA STRIPING - 0.60m AT 1.20m O.C.)
8 STOP BAR (WHITE) AND STOP SIGN (SEE DETAILS ON SP-D1)
9 FREESTANDING 'NO PARKING - FIRE ROUTE' SIGN
10 WALL MOUNTED 'NO PARKING - FIRE ROUTE' SIGN
11 PROPOSED 1.8m CHAIN-LINK FENCE (REFER TO LANDSCAPE DETAILS)
12 PROPOSED 2.4m CHAIN-LINK FENCE (REFER TO LANDSCAPE DETAILS)
13 POND WARNING SIGN
14 WASTE COMPACTOR ON CONCRETE PAD
15 PEDESTRIAN CROSSING SIGN
LEGEND
PROPERTY LINE
BUILDING OUTLINE
CONCRETE SIDEWALK
BARRIER CURB
1.8m CHAIN-LINK FENCE (REFER TO LANDSCAPE PLANS)
2.4m CHAIN-LINK FENCE (REFER TO LANDSCAPE PLANS)
FIRE ROUTE (MIN 12.0m CENTRELINE RADIUS)
SITE STATISTICS:
EXISTING SITE AREA: 68,844 m² (17.01 ACRES)
BUILDING AREA:
A1 7,804 m² (84,000 ft²)
A2 8,027 m² (86,400 ft²)
A3 8,027 m² (86,400 ft²)
TOTAL 23,858 m² (256,800 ft²)
PARKING REQUIRED: 0.80/100m² / FIRST 5,000m² (40 CARS)
0.40/100m² / THEREAFTER (75 CARS)
TOTAL: 115 CARS
PARKING PROVIDED: 119 CARS
D07-1 2-25-0085 AND PLAN#19335
THE PROPERTIES GROUP
KWA SITE DEVELOPMENT CONSULTING INC.
2453 Auckland Drive
Burlington, ON L7L 7A9
REVISION BLOCK
DATE DESCRIPTION
1. 06/11/2025 ISSUED FOR SITE PLAN APPROVAL
2. 09/18/2025 ISSUED FOR COORDINATION
CONCEPTUAL SITE PLAN
THE PROPERTIES GROUP
4497 O'KEEFE COURT (NEPEAN)
NEPEAN, ONTARIO
PROJECT No: 21684
DRAWN BY: BH
CHECKED BY: TF
NORTH ARROW
GRAPHIC SCALE
0m 10m 20m 30m
1:600
SA-001 r2

7.0 IMPACT ASSESSMENT AND MITIGATION

7.1 Surface Water and Fish Habitat

The future removal of these features will require permission under Section 28.1 ("Section 28 Permit") of the *Conservation Authorities Act* (Government of Ontario, 1990a) from RVCA. In addition, the removal of these features must be supported by a *Request for Review* (RFR) to Fisheries and Oceans Canada (DFO). The removal process will be completed in accordance with all mitigation directives provided under CA permits and/or letters of advice from DFO.

Following their removal, the site will be re-graded appropriately to capture and convey water to the SWM pond on Site, with final treatment by an OGS located at the south-east corner of the property and then ultimately discharge out to the O'Keefe Court drainage swale.

The small watercourse that runs along the western boundary of Lytle Park and just outside of the eastern site boundary is a linearized drainage channel that conveys surface runoff from the forest north of Lytle Park. Given that the feature has limited ecological value (see Section 5.1), and that surface water from the Site will be managed the SWM system (i.e. will not flow unabated into the retained feature), a reduced setback of 12m is anticipated to be sufficient to minimize any potential impact from the proposed development on site.

During construction, the potential for sediment to be released into surface water features during site preparation and construction would be mitigated using standard erosion and sediment control measures. An erosion and sediment control (ESC) plan should be developed to the satisfaction of the regulating agencies and is anticipated to include:

- A multi-faceted approach to provide ESC.
- Silt fence paired with sturdy construction fence along the project perimeter. 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 (i.e., drainage feature and swamp to the west) 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) (MNRF, 2015c) 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.
- Snow management plan to ensure that accumulated snow will be removed from the Site or stored in such a way as to avoid runoff of snowmelt and associated contaminants into the drainage feature and wetland habitat.
- Ensure that grading is oriented away from the drainage feature and wetland west and south of the Site.

7.2 Vegetation

No rare or unique vegetation communities or at-risk vegetation species were observed on the Site. All vegetation will be removed the Site to accommodate regrading and construction. Please note that this EIS, however, does not constitute permission of tree removal. Trees can only be removed from the Site under a Tree Removal Permit from the City's Forester. All tree removal must be complete in compliance with the conditions of that permit. This EIS and the attached TCR (Appendix C) may be used to support an application for a City Tree Removal Permit.

The following general protection measures are recommended during site preparation and construction to limit impacts to vegetation:

- Tree removal on the Site should be limited to that which is necessary to accommodate construction.
- When clearing the forest, chip Glossy Buckthorn and Green Ash on-site to avoid spreading invasives species (i.e., emerald ash borer).
- Ensure equipment is clean prior to and following vegetation removal to avoid introducing invasive species to the Site, and clean equipment prior to leaving Site to avoid spreading invasives (e.g., Common Reed, *Phragmites australis*) elsewhere.
- Spoils (i.e. either plant material directly or associated excavated soils) from areas with Phragmites and/or Buckthorn must either be stockpiled on site and tarped with impermeable black-coloured coverings for a period of at least one full year, or be transported to a waste disposal facility that id certified to manage invasive plant material.

- Revegetate the Site as quickly as possible to reduce habitat loss for wildlife using only native and locally appropriate species.

7.3 Species at Risk

The review in Section 5.7 identified two SAR as having potential for interactions with the proposed development: Tri-colored Bat and Blanding's Turtle. While the SAR review noted the absence of Butternut from the Site (and thus no potential for interactions currently), the species has previously occurred on the Site (Appendix D2) thus some further discussion is warranted. All three SAR species are discussed below.

7.3.1 SAR Bats

Based on our SAR Assessment (Appendix D), four SAR bats (Eastern Small-footed Myotis, Little Brown Bat, Northern Myotis, and Tri-Colored Bat) were initially considered have some limited potential for occurrence on the Site. Of these, only Tri-Colored Bat was found to be present. The number of detections for the species, however, was very low (less than once per evening) suggesting only a limited transient presence over the Site. As an Endangered species, Tri-colored Bat receive "general habitat protection" under the ESA. However, given the species was only found to pass by occasionally, vegetation removal on the Site cannot be anticipated to result in a loss of roosting habitat.

Regardless, individuals of the species could periodically rest diurnally in trees on the Site during the active season (April 1 to September 30 inclusive; MNRF, 2017), i.e., bats could briefly use any site tree or structure as a rest stop, but only opportunistically (not as a required habitat element). Potential impacts to individual at-risk bats directly would thus be mitigated by clearing trees outside of the roosting season. Following this tree-clearing window would also avoid potential interactions with birds and bird nests protected under the Migratory Birds Convention Act (MBCA; Government of Canada, 1994). As such, Tri-colored Bat are unlikely to be impacted by future site development.

7.3.2 Blanding's Turtle

Blanding's Turtle Habitat is defined based on three habitat categories (MECP, 2021a). Category 1 Habitat includes nesting and overwintering areas. The site is not generally suitable for either function.

Category 2 includes suitable aquatic/wetland areas and a 30 m buffer around them. These areas are protected under the ESA as places in which Blanding's Turtles will spend most of their active time (i.e. general summer habitat). Category 3 Habitat extends 220 m beyond the Category 2 areas to identify potential travel corridors.

Observational records of Blanding's Turtles exist along Strandherd Road south of the Site. While no suitable wetland habitat occurs on the Site itself, The Lytle Park Pond ~75 m east of the Site does provide potentially suitable wetland habitat. As such, the southeast corner of the Site nominally constitutes Category 3 habitat (associated Category 2 habitat does not extend onto the Site), regardless of actual Blanding' Turtle presence. Regardless of habitat category designation, however, the Site itself, being situated directly between the pond and Highway 416, has no potential to provide ecological service as a travel corridor. As such, the proposed development will not negatively impact the defined habitat of Blanding's Turtles. A formal "Net Benefit" permit process through the MECP is not required. Best practices for wildlife management generally (Section

7.5) can be employed regardless, which would mitigate potential harm to transient turtles (Blanding's or otherwise) in the area.

7.3.3 Butternut

Butternut, endangered under the ESA and SARA, are often found along stream banks as they prefer to grow in moist, well-drained loams; however, the species can tolerate a large range of soil types. Butternut are intolerant of shade and competition, as they require ample sunlight to grow (Poisson & Ursic, 2013).

While no Butternut were observed on Site they could appear in the future as the habitat is suitable. Therefore, if tree cutting does not occur within two years, another TCR should be completed to ensure that no Butternut are growing on Site.

7.4 Significant Natural Heritage Features

No provincially significant wetlands, woodlands, valleylands, wildlife habitats occur on the site or within 120 m of the Site. Similarly, no ANSIs occur in the vicinity. Therefore, no impacts to such significant natural features are anticipated from the proposed development.

7.5 General Wildlife Mitigation

The following mitigation measures shall be implemented during future construction to generally protect wildlife and potential SWH areas:

- 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 (MNRF, 2018).
        - The breeding and roosting period for bats is recognized as April 1 to September 30 (MNRF, 2015b; MECP (C. Hann) personal communication with KAL (K. Black), July 30, 2021).
- Temporary exclusion fence should be installed prior to the turtle active season (April through October) (MNRF, 2015c) along the Site perimeter to keep turtle off-site 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. Exclusion fencing should be inspected and repaired weekly during the turtle active season.
- Develop an ESC plan. Install sediment control fence and inspect/maintain it periodically and after each rain event to ensure its integrity and continued function.

- 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.

- 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 (e.g., prevent turtles from nesting in stockpiles on the Site) 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.

- The installation of bat boxes on-site is recommended to offset the loss of roosting habitat.

8.0 CONCLUSION

This report provides a set of mitigation measures for employment 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. Based on our professional opinion, the proposed development is not expected 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 The Properties Group and may be distributed only by The Properties Group. Questions relating to the data and interpretation can be addressed to the undersigned.

Respectfully submitted,

KILGOUR & ASSOCIATES LTD.

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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

Birds Canada, Environmental Canada, & U.S. Environmental Protection Agency. (2009). *Marsh Monitoring Program Participant's Handbook for Surveying Amphibians* (p. 13). https://www.ohwetlands.org/uploads/5/0/6/9/50693061/handbook_mmp_amphibians_2009.pdf

California Academy of Sciences and National Geographic Society. (2025). *iNaturalist*. iNaturalist. https://www.inaturalist.org/

Chapman, J., L., & Putnam, D., F. (1984). *The Physiography of Southern Ontario* (3rd ed.). Ontario Ministry of Natural Resources.

City of Ottawa. (2020). *Tree Protection (By-law No. 2020-340)*. https://ottawa.ca/en/living-ottawa/laws-licences-and-permits/laws/laws-z/tree-protection-law-no-2020-340

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. (2025). *geoOttawa*. https://maps.ottawa.ca/geoottawa/

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-especes/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. (2025). *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

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

James B. Lennox. (2025). *Landscape Plan* [Map].

KWA. (2025). *Functional Servicing and Stormwater Management Report* (No. 21684; p. 73).

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. (2019). *Client's Guide to Preliminary Screening for Species at Risk* (Species at Risk Branch, Permission and Compliance, p. 9). Ministry of Environment, Conservation and Parks. https://www.lambtonshores.ca/en/invest-and-build/resources/Documents/Building-and-Renovating/Client-Guide-to-Preliminary-Screening-May-2019.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. (2025). *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. (2011). *Survey Methodology under the Endangered Species Act, 2007:* Dolichonyx Oryzixorous *(Bobolink)* (Unpublished Draft). Ministry of Natural Resources and Forestry.

MNRF. (2014). *Draft Survey Protocol for Easter Whip-poor-will (*Caprimulgus vociferus*) in Ontario* (OMNRF Species at Risk Branch, p. iii + 10). Ministry of Natural Resources and Forestry.

MNRF. (2015a). *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. (2015b). *Technical Note: Species at Risk (SAR) Bats* (OMNRF Regional Operations Division, p. 37). Ministry of Natural Resources and Forestry.

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. (2018). *Best Management Practices for Identifying, Managing, and Creating Habitat for Ontario's Species at Risk Snakes*. Ministry of Natural Resources and Forestry. https://canadianherpetology.ca/conservation/doc/MNRF%20Snake%20Habitat%20BMP_final-1.pdf

MNRF. (2022). *Ontario Wetland Evaluation System: Southern Manual* (No. 4th Edition). Ministry of Natural Resources and Forestry. https://www.ontario.ca/files/2023-02/mnrf-pd-rpdpb-ontario-wetlands-evaluation-system-southern-manual-2022-en-2023-02-02.pdf

MNRF. (2024). *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

MNRF. (2025a). *Land Information Ontario*. Ministry of Natural Resources and Forestry. http://www.ontario.ca/page/land-information-ontario

MNRF. (2025b). *Make a Map: Natural Heritage Areas*. Ministry of Natural Resources and Forestry. Make a Natural Heritage Area Map. https://www.lioapplications.lrc.gov.on.ca/Natural_Heritage/index.html?viewer=Natural_Heritage.Natural_Heritage&locale=en-CA

Ontario Breeding Bird Atlas. (2021, April 16). *Reporting Guidelines – Fish and American Crow*.

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

Poisson, G., & Ursic, M. (2013). *Recovery Strategy for the Butternut (*Juglans cinerea*) in Ontario* (Ontario Recovery Strategy Series, p. v + 12 pp. + Appendix vii + 24 pp). Prepared for the Ontario Ministry of Natural Resources. Adoption of the Recovery Strategy for the Butternut (*Juglans cinerea*) in Canada (Environment Canada 2010). https://files.ontario.ca/environment-and-energy/species-at-risk/mnr_sar_rs_bttrnt_en.pdf

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. (2025). *eBird: An online database of bird distribution and abundance*. https://ebird.org/home

Toronto and Region Conservation Authority & Credit Valley Conservation. (2013, July). *Evaluation, Classification and Management of Headwater Drainage Features Guidelines*. https://trcaca.s3.ca-central-1.amazonaws.com/app/uploads/2021/08/31112457/HDF-EVALUATION-CLASSIFICATION-MANAGEMENT_2014.pdf

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

Anthony Francis, PhD

Dr. Francis is a Senior Ecologist with 24 years consulting experience to both government agencies and private industry. He has worked on a diversity of projects relating to species at risk, invasive species, terrestrial and aquatic habitat, environmental effects monitoring and mitigation, and fate/effects of contaminants. Within each of these subject areas, Dr. Francis has completed projects addressing specific site concerns and broader policy initiatives. He has extensive experience in preparing Environmental Impact Statements, Integrated Environmental Reviews and Tree Conservation Reports in support of land development and property severances. He has carried out literature reviews for government agencies, performed complex geospatial analyses of plant and animal distributions, and completed numerous field programs in support of environmental impact statements and assessments.

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 four years. With KAL, 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 Headwater Drainage Feature Assessment

Headwater Drainage Feature Assessment for 4497 O'Keefe Court, Ottawa, Ontario

2023-11-13

Draft Report

KILGOUR & ASSOCIATES LTD.
www.kilgourassociates.com

Project Number: TPG 1503

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List of Acronyms and Abbreviations

ELC – Ecological Land Classification
HDF – Headwater Feature
HDFA – Headwater Drainage Features Assessment
HDF – Headwater Drainage Feature
EIS – Environmental Impact Statement
KAL – Kilgour & Associates Ltd.
MMP – Marsh Monitoring Protocol

1.0 INTRODUCTION

This report is a Headwater Drainage Feature Assessment (HDFA) prepared by Kilgour & Associates Ltd. (KAL) on behalf of The Properties Group in support of potential future development at 4497 O'Keefe Court in Ottawa, Ontario (the "Site").

This report provides a detailed description of the Headwater Drainage Features (HDFs) on and adjacent to the Site following the field methodologies identified in the *Evaluation, Classification and Management of Headwater Drainage Features Guidelines* (Toronto and Region Conservation Authority & Credit Valley Conservation, 2013), herein referred to as the HDF Guidelines.

2.0 HEADWATER DRAINAGE FEATURES

2.1 Overview

This study identifies and describes three (3) HDFs located on and adjacent to the Site (Figure 1). The Site consists of forest, meadow, and wetland communities. Surrounding land uses are predominantly forested, residential, and recreational.

2.2 Assessment Methodology

The Standard level of assessment follows Ontario Stream Assessment Protocol (OSAP) methodologies for descriptions of flow conditions, riparian vegetation and site features that are important components of habitat (headwater sampling protocol OSAP S4.M10) and includes an electrofishing survey to describe fish and fish habitat (OSAP S4.M10). Additionally, an Ecological Land Classification for Southern Ontario (ELC) was applied to the Site (Lee et al., 1998), with specific focus on the riparian zone of each segment, and determined habitat community types present on the Site. An assessment of amphibian breeding was conducted following the Marsh Monitoring Protocol (MMP; Birds Canada et al., 2009).

OSAP investigations of HDFs were conducted on April 11, 2023, during spring freshet, and subsequent investigations were completed on June 5 and July 7, 2023. One amphibian survey following the MMP was conducted on April 12, 2023. The ELC survey was conducted on June 5, 2023.

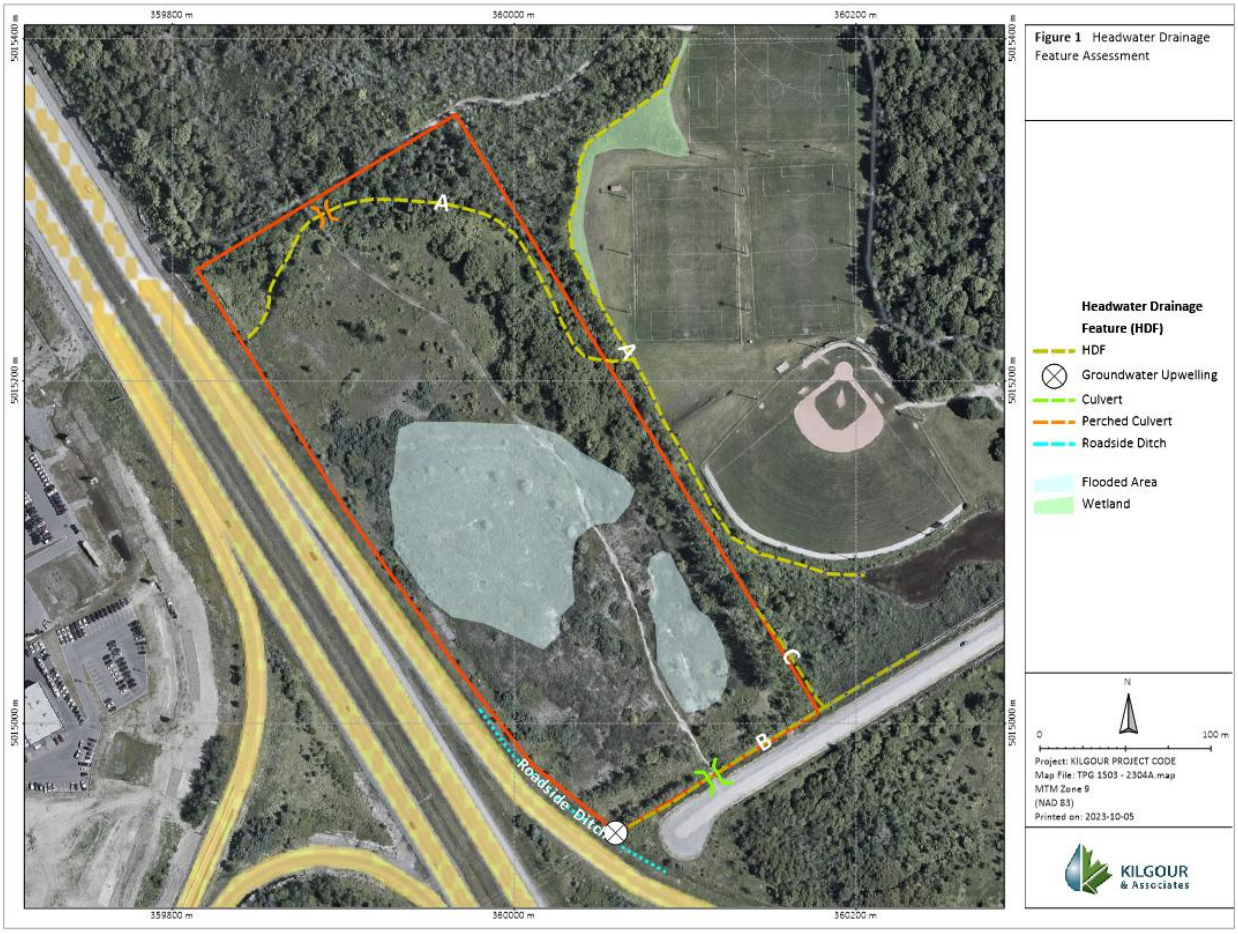

Figure 1 Headwater Drainage Feature Assessment

2.3 General Reach Descriptions

HDFs A, B and C are detailed below, and representative photographs are available in Appendix A.

Two partially flooded areas with scattered presence of standing water were observed during the first OSAP investigation on April 11, 2023 (Figure 1). These areas were observed to be dry with no remaining standing water in the subsequent site visit on June 5, 2023. These flooded areas were determined to be disconnected from the drainage features and functions of the Site and surrounding area, as determined in hydrogeological studies undertaken by Paterson Group Consulting Engineers (2007, 2008). They are depressional areas that resulted from historic ongoing site alteration and regrading works and changes to overall drainage character in the area, and only receive water from ephemeral flow and large precipitation events. It was determined in the Paterson (2007, 2008) studies that a historic infilled trench traverses the Site centrally from west to east and consists of fine-grained soil. Findings of the study indicated that the degree of compaction and material used caused the infilled trench to act as a hydraulic barrier to subsurface flows, causing groundwater to be forced to the surface. As discussed in the EIS, the flooded areas were not found to support amphibian breeding and do not constitute amphibian breeding, fish or turtle habitat. As such, the flooded areas are not considered to be headwater features as such and are therefore not considered further in this HDFA.

2.3.1 HDF A

HDF A is a 318 m constructed channelized feature that originates in the Cultural Meadow community at the western Site boundary, directly adjacent to Highway 416. The original water source for the feature had been a headwall outlet providing drainage outflows from the adjacent highway corridor. That outlet structure, however, was sealed in 2015. It is currently sourced only by springtime overland flow.

The HDF flows through a young deciduous forest and connects to a southeastern flowing drain that runs along the eastern forest boundary adjacent to Lytle Park. HDF A was observed to have minimal flow during spring freshet. The upstream portion of HDF A contains narrow-leaved emergent vegetation while the downstream forested section lacks in-stream vegetation. Within the upstream section, HDF A has a well-defined channel with a mean bankfull width of approximately 1.23 m over silty organic substrate within the upstream portion, and cobble substrate within the downstream portion. A perched culvert is located centrally within the upstream portion of HDF A (Figure 1).

2.3.2 HDF B

HDF B is a 207 m roadside ditch that flows eastward along the southern Site boundary and O'Keefe Court. HDF B was observed to have minimal flow and baseflow was determined to be influenced by a groundwater upwelling area located at the southeast Site boundary directly adjacent to Highway 416 and a dry roadside ditch (Figure 1). Groundwater upwelling was only observed on the first HDFA site visit on April 11,2023, indicating the upwelling is only occurring for a short period of time in the spring. HDF B has lawn riparian vegetation and in-stream vegetation is predominantly grasses. The mean bank full width of HDF B is approximately 1.17 m over gravel substrate transitioning to organic substrate downstream.

2.3.3 HDF C

HDF C is a 68 m channelized feature that flows southward through the young deciduous forest along the southeastern Site boundary connecting to HDF B downstream. Some areas of standing water and small pools were observed in HDF C in the early spring. No in-stream aquatic vegetation was observed, and riparian vegetation is primarily forested. The mean bank full width of HDF C is approximately 0.93 m over organic substrate.

2.4 Component Classifications

The following tables summarize the functions provided by the three (3) reaches.

Table 1 Hydrology Classification of the HDFs

Drainage Feature	Hydrology Classification					
	Assessment Period	Flow Conditions		Flow Classification	Modifiers	Hydrological Function
		Description	(OSAP Code)			
A	April 11, 2023 June 05, 2023 July 7, 2023	Minimal Surface flow Dry Dry	4 1 1	Ephemeral	This feature was constructed to capture surface runoff on lands west of Highway 416 through a headwall outlet. The outlet was grouted in 2015 and currently there is no source other than spring runoff.	**Recharge Functions**
B	April 11, 2023 June 05, 2023 July 7, 2023	Minimal Surface flow Dry Dry	4 1 1	Ephemeral	Roadside ditch, influenced primarily by a groundwater upwelling area for a brief period during spring freshet.	**Recharge Functions**
C	April 11, 2023 June 05, 2021 July 7, 2023	Standing Water Dry Dry	2 1 1	Ephemeral	Small pools of standing water present during spring freshet	**Recharge Functions**

Table 2 Riparian Classification for the HDFs

Drainage Feature	Riparian Classification			
	OSAP Descriptions	OSAP Riparian Codes	ELC Codes	Riparian Conditions
A	RUB - Forest LUB - Forest	RUB – 7 LUB - 7	FODM FODM	**Important Functions**
B	RUB - Lawn LUB - Lawn	RUB – 2 LUB – 2	CUM CUM	**Contributing Functions**
C	RUB – Forest LUB - Forest	RUB – 7 LUB - 7	FODM FODM	**Important Functions**

Table Notes: RUB – right upstream bank, LUB – left upstream bank

Table 3 Fish and Fish Habitat Classification for the HDFs

Drainage Feature	Riparian Classification			
	Fish Observation	Fishing Effort	Fish & Fish Habitat Designation*	Modifiers/Notes
A	Dry	None	Limited Functions	
B	Dry	None	Limited Functions	
C	Dry	None	Limited Functions	

Table 4 Terrestrial Classifications

Drainage Feature	Description	Amphibians	Terrestrial Classification
A	This HDF is a disconnected feature that captures snow melt for a brief period. This feature drains into a pond offsite in Lytle Park.	No amphibians were observed in this feature	Limited Functions
B	There are no adjacent wetland areas, This reach discharges into the O'Keefe Court roadside ditch.	No amphibians were observed in this feature	Limited Functions
C	There are no adjacent wetland areas. This reach discharges into the O'Keefe Court roadside ditch.	No amphibians were observed in this feature	Limited Functions

2.5 Reach Summary

Dimensions of the Headwater Drainage Features are summarized in Table 5 below.

Table 5 HDF Dimensions

Drainage Feature	Length (m)	Mean Bankfull Width (m)	Mean Wetted Width (m)	Mean Depth (m)
A	318	1.23	1.01	0.1
B	207	1.17	1.12	0.11
C	68	0.93	0.90	0.97

3.0 MANAGEMENT RECOMMENDATIONS

The classification categories identified in Section 2 provide the basis of the management recommendations provided here. The following flow chart (Figure 2) combines and translates the classification results to management recommendations.

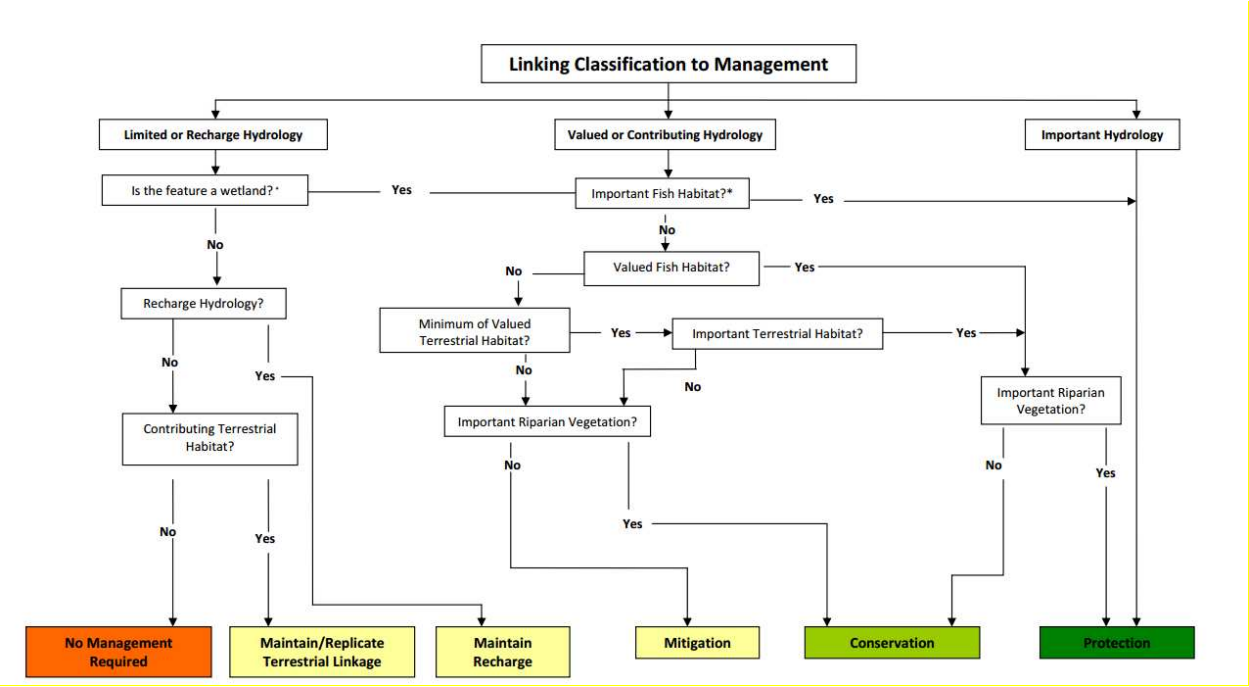

Figure 2 Headwater Drainage Feature Assessment (HDFA) flow chart providing direction on management options

3.1 HDF A

HDF A is a channelized drainage channel that originates in the cultural meadow community at the western Site boundary, flowing through a young deciduous forest and connects to a southeastern flowing drain that runs along the eastern forest boundary adjacent to Lytle Park. HDF A was observed to have minimal flow during spring freshet. Following the HDFA Guide flow chart linking component classification to management directives, this reach:

1. Provides Recharge Hydrology;
2. Does not provide either Important or Valued Fish Habitat;
3. Provides only Limited Terrestrial Habitat; and
4. Provides Important Riparian Vegetation.

This chain of classification descriptors leads to a management directive of **Maintain Recharge**. This feature provides ephemeral flow and water storage functions during and after spring freshet. This feature contains no fish habitat, and no amphibians were heard calling during MMP surveys. There is no requirement to retain the feature per se, but overall water balance for the area must be maintained by providing mitigation measures to infiltrate clean stormwater.

3.2 HDF B

This feature is a roadside ditch that flows eastward along the southern Site boundary. HDF B was observed to have minimal flow and baseflow was determined to be influenced by a groundwater upwelling area located at the southeast Site boundary directly adjacent to Highway 416 and a dry roadside ditch. Following the HDFA Guide flow chart linking component classification to management directives, this reach:

1. Provides Recharge Hydrology;
2. Does not provide either Important or Valued Fish Habitat;
3. Provides only Limited Terrestrial Habitat; and
4. Does not provide Important Riparian Vegetation.

This chain of classification descriptors leads to a management directive of **Maintain Recharge** for this reach. This feature provides baseflow and water storage functions during and (for a short time) after spring freshet. This feature contains no fish habitat, and no amphibians were heard calling during MMP surveys. There is no requirement to retain the feature per se, but on-site flow, outlet flows, and overall water balance for the area must be maintained by providing mitigation measures to infiltrate clean stormwater.

3.3 HDF C

HDF C is a channelized feature that flows southward along the southeastern Site boundary connecting to HDF B (roadside ditch along O' Keefe Court) downstream. Some areas of standing water and small pools were observed in HDF C. Following the HDFA Guide flow chart linking component classification to management directives, this reach:

1. Provides Recharge Hydrology;
2. Does not provide either Important or Valued Fish Habitat;
3. Provides only Limited Terrestrial Habitat; and
4. Provides Important Riparian Vegetation.

This chain of classification descriptors leads to a management directive of **Maintain Recharge** for this reach. This feature provides ephemeral flow and water storage functions during and after spring freshet and following large rain events only. This feature contains no fish habitat, and no amphibians were heard calling during MMP surveys. There is no requirement to retain the feature per se, but on-site flow, outlet flows, and overall water balance for the area must be maintained by providing mitigation measures to infiltrate clean stormwater.

4.0 CLOSURE

This report provides detailed descriptions of the HDFs on adjacent to the Site and provides management recommendations to direct future Site development. Questions and concerns may be addressed to the undersigned.

Respectfully submitted,

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5.0 LITERATURE CITED

Birds Canada, Environmental Canada, & U.S. Environmental Protection Agency. (2009). *Marsh Monitoring Program Participant's Handbook for Surveying Amphibians* (p. 13). https://www.ohwetlands.org/uploads/5/0/6/9/50693061/handbook_mmp_amphibians_2009.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

Toronto and Region Conservation Authority & Credit Valley Conservation. (2013). *Evaluation, Classification and Management of Headwater Drainage Features Guidelines*. https://trcaca.s3.ca-central-1.amazonaws.com/app/uploads/2021/08/31112457/HDF-EVALUATION-CLASSIFICATION-MANAGEMENT_2014.pdf

Appendix A Site Photos

HDF A


Date & Time: Tue, Apr 11, 2023 at 13:12:02 EDT
Position: 18 N 437093 5013775 (+-10.5m)
Altitude: 106m (+10.4m)
Datum: WGS-84
Azimuth/Bearing: 158° S22E 2809mils True (+-13°)
Elevation Angle: -06.7°
Horizon Angle: -01.8°
Zoom: 1.0X
TPG 1503 A WP3


Date & Time: Tue, Apr 11, 2023 at 12:52:15 EDT
Position: 18 N 437387 5013810 (+-2.3m)
Altitude: 114m (+7.6m)
Datum: WGS-84
Azimuth/Bearing: 017° N17E 0302mils True (+-13°)
Elevation Angle: -07.5°
Horizon Angle: -02.3°
Zoom: 1.0X
TPG 1503 A WP1

HDF B


Date & Time: Tue, Apr 11, 2023 at 3:41:50 EDT
Position: 18 N 427576 5013496 ±7.8m
Altitude: 107m (±9.5m)
Datum: WGS-84
Azimuth/Bearing: 344° N16W 6116mils True (±13°)
Elevation Angle: -18.3°
Horizon Angle: -02.2°
Zoom: 1.0X
TPG 1503 B1


Date & Time: Tue, Apr 11, 2023 at 13:51:52 EDT
Position: 18 N 427701 5013557 ±10.8m
Altitude: 104m (±9.0m)
Datum: WGS-84
Azimuth/Bearing: 024° N24E 0442mils True (±13°)
Elevation Angle: -11.4°
Horizon Angle: -01.2°
Zoom: 1.0X
TPG 1503 B3

HDF C


Azimuth/Bearing: 336° N24W 5573mils True (-12°)
Elevation Angle: -11.9°
Horizon Angle: -00.5°
Zoom: 1.0x
TPG 1503-C1


Azimuth/Bearing: 043° N17W 6098mils True (+12°)
Zoom: 1.0x
TPG 1503-C2

Appendix C Tree Conservation Report

Tree Conservation Report
The Properties Group -
4497 O'Keefe Court

October 08, 2025

KILGOUR & ASSOCIATES LTD.
www.kilgourassociates.com

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List of Acronyms and Abbreviations

CRZ – critical root zone
DBH – diameter at breast height
ESA – *Endangered Species Act*
KAL – Kilgour & Associates Ltd.
SAR – species at risk
SARA – *Species at Risk Act*
TCR – Tree Conservation Report

1.0 INTRODUCTION

This Environmental Impact Study (EIS) was prepared by Kilgour & Associates Ltd. (KAL; Appendix A) on behalf of the Properties Group Management Ltd. in support of a proposed development at 4497 O'Keefe Court, Ottawa, Ontario ("the Site"; Figure 1).

Figure 1 Map showing location context for the Site

A TCR is required for all Plans of Subdivision, Site Plan Control Applications, Common Elements Condominium Applications, and Vacant Land Condominium Applications where there is a tree of 10 cm in diameter at breast height (DBH) or greater on a site and/or if there is a tree on an adjacent site that has a critical root zone (CRZ) extending onto a development site. A "tree" is defined as any species of woody perennial plant, including its root system, which has reached or can reach a minimum height of at least 450 cm at physiological maturity. The CRZ is calculated as DBH x 10 cm.

The removal of trees on the Site cannot occur until written approval has been granted through a tree permit as per the City's Tree Protection By-law (2020), the application for which will be supported by this TCR. The tree permit will come in the form of a letter from the General Manager[1] with conditions specific to the Site, tree retention (if applicable), and associated tree protection and tree removal. The approved TCR itself is a requirement for the approval of the development applications listed above. A copy of the report must be

[1] General Manager of the Public Works & Environmental Services Department or the General Manager of the Planning, Infrastructure and Economic Development Department of the City of Ottawa, or their designate.

available on the Site during tree removal, grading, construction, or any other site alteration activities, and for the duration of construction on the Site.

2.0 PROPERTY INFORMATION

The subject property (Barrhaven; CON 4 RF PT LOT 21 RP; 5R13897 Part 14: PIN 046310383) is an approximate 6.8 ha parcel owned by O'Keefe Court Properties Ltd and located at 4497 O'Keefe Court in Ottawa, Ontario. The property is zoned as Rural General Industrial Zone (RG) (Ottawa 2016). The Zone permits development of light industrial components and limited-service commercial uses for the traveling public. Uses for the RG zone include, but are not limited to, caretaker dwellings; retail stores selling agriculture, construction, gardening equipment or supplies; or animal hospitals, automobile body shops or dealerships, heavy equipment rental and vehicle sales, parking lots, service or repair shops, truck transport terminals, or warehouses.

2.1 Property Owner and Applicant Contact Information

Table 1 Organization, role, contact person, phone number, and email address for property owner and applicant

Organization	Role	Contact Person	Phone Number	Email Address
The Properties Group	Proponent	Andrew Glass	613-369-5495	aglass@prpgrp.com

2.2 Arborist Contact Information and Qualifications

Table 2 Organization, role, contact person, phone number, and email address for arborists

Organization	Role	Contact Person	Phone Number	Email Address
KAL	Biologist	Kurtis Westbury	(613) 260-5555	kurtis@kilgourassociates.com
KAL	Biologist	Anthony Francis	(613) 260-5555	afrancis@kilgourassociates.com

2.3 Additional Applications

Not applicable.

3.0 EXSITING CONDITIONS

3.1 Tree Inventory

A tree survey for the Site was performed on June 5, 2023, following TCR guidelines set forth by the City (2020). All trees with a diameter at breast height (DBH) ≥ 10 cm having potential to be removed under the proposed development were identified, enumerated, their DBH measured, and their general health and condition

documented (Appendix A, Figure 2). Within the thicket, cultural meadow, and marsh ecosites, the Site contains 60 individual trees with a DBH ≥ 10 cm from five species, with approximately 31% of trees observed dominated by Trembling Aspen (*Populus tremuloides*; Table 3). Additionally, there are younger trees (<10 cm DBH) scattered within these clusters.

Table 3 Tree species count and percent composition for the Site

Common name	Scientific name	Count	Percent composition
Austrian Pine	*Pinus nigra*	14	23
Trembling Aspen	*Populus tremuloides*	19	31
Manitoba Maple	*Acer negundo*	8	14
Common Buckthorn	*Rhamnus cathartica*	11	18
White Willow	*Salix alba*	8	14
TOTAL		60	100.0%

The Site also contains a 1.8 hectare mixed deciduous forest which contains clusters of the following trees in approximate amounts:

- Trembling Aspen (*Populus tremuloides*), 10-20 DBH, 40% Composition
- Manitoba Maple (*Acer negundo*), 15-30 DBH, 30% Composition
- Staghorn Sumac (*Rhus typhina*), 5-10 DBH, 30% Composition

Approximate locations of individual trees and the mixed deciduous forest area are indicated in Figure 2. Further details concerning the individual trees can be found in Appendix A.

Figure 2 Approximate tree locations (for further details see Appendix A)

3.1.1 Ecological Significance of Trees on Site

The Site does not contain any federally or provincially significant tree species (i.e., those listed under the *Species at Risk Act* (SARA), the ESA, or those tracked on the Natural Heritage Information Centre (MNRF, 2021)). The Site also does not contain tree species considered regionally significant (rare) in the Ottawa area per Muncaster Environmental Planning Inc. and Brunton Consulting Services (2005).

3.2 Other Natural Environment Elements

3.2.1 Surface Water Features

The Site does not contain surface water features or potential fish habitat areas other than minor roadside ditches.

3.2.2 Steep Slopes

The development area does not contain any steep slopes. It is situated outside of the required geotechnical setbacks for the valley lands to the south.

3.2.3 Valued Woodlots

The development area itself does not contain any woodlots designated as Urban Natural Features or Natural Environment Areas, areas evaluated in the *City of Ottawa Urban Natural Areas Environmental Evaluation Study* (UNAEES; Muncaster Environmental Planning Inc. and Brunton Consulting Services, 2005), or other areas that meet the criteria used in the UNAEES.

3.2.4 Significant Woodlands

Forest adjacent to the development area meet the Significant Woodland criteria or size thresholds for rural areas in Ottawa per *Significant Woodlands: Guidelines for Identification, Evaluation, and Impact Assessment* (City of Ottawa, 2018), but forested areas within the development area itself do not.

3.2.5 Greenspace Linkages

The development area does not contain any greenspace linkages as identified in the Greenspace Master Plan (City of Ottawa, 2016) or as may occur in the larger landscape.

3.2.6 Distinctive Trees

The Site contains 14 distinctive trees (i.e., with DBH > 50 cm; Appendix A).

3.2.7 Unique Ecological Features

The development area does not contain any riparian woodlots, rare communities, or other unique ecological features.

3.2.8 Species at Risk

Based on our review of existing information (KAL 2021), ELC delineations (habitat categorization), and field surveys, there is potential for 14 SAR to both occur on or near the proposed project area and to have some potential to interact with the project. These include four species of bats (Northern Long-eared Myotis, Eastern Small-footed Myotis, Little Brown Myotis, and Tri-colored Bat) and insect (Monarch Butterfly, American Bumble Bee, Suckley's Cuckoo Bumble Bee, and Yellow-banded Bumble Bee), four bird species (Chimney Swift, Common Nighthawk, Eastern Wood-Pewee, and Loggerhead Shrike), one frog (Western Chorus Frog), and one tree (Butternut).

For listed bat species in areas subject to tree removal, especially when extent of the tree removal is relatively small compared to remaining available treed areas nearby, mitigation measures to protect bat species should focus on the avoidance of harm to individuals. If a proposed activity will avoid impairing or eliminating the function of habitat for supporting bat life processes (e.g. remove, stub, etc. a small number of potential maternity or day roost trees in treed habitats) but the timing of tree removal will avoid the bat active season (April 1 – September 30 in Southern Ontario / May 1 to August 31 in Northern Ontario), then there is no need to conduct species at risk bat surveys of treed habitats.

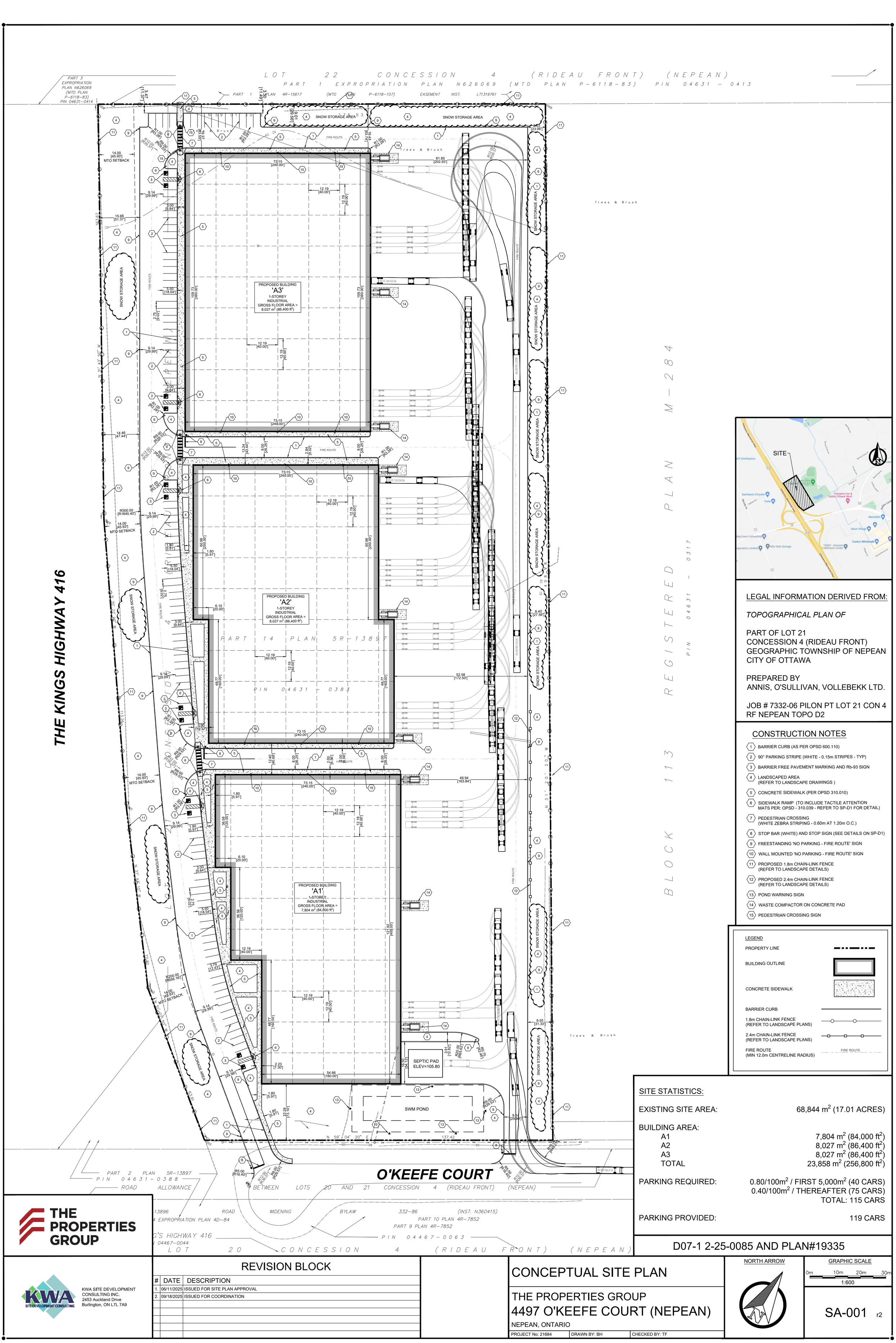
The four potentially present SAR bird species (Chimney Swift, Common Nighthawk, Eastern Wood-Pewee, and Loggerhead Shrike) were observed to occupy the Site in 2023. Accordingly, the Site is not currently considered to provide habitat for those species, though either species could begin using the Site as habitat in the future.

Monarch Butterfly is listed as species of Special Concern in Ontario. As such neither the species nor its habitat is directly protected under the ESA.

4.0 PROPOSED DEVELOPMENT

The proposed development at 4497 O'Keefe Court will be three industrial buildings and associated parking. The Site Plan is shown in Figure 3.

Site development will require significant regrading across the property that will necessitate the removal of all trees from the Site.


LOT 22 CONCESSION 4 (RIDEAU FRONT) (NEPEAN)
PART 1 EXPROPRIATION PLAN N626069 (MTO PLAN P-6118-83) PIN 04631 - 0413
PART 3 EXPROPRIATION PLAN N626069 (MTO PLAN P-6118-83) PIN 04631-0414
PART 1 PLAN 4R-15617 (MTO PLAN P-6118-107) EASEMENT INST. LT1319761
THE KINGS HIGHWAY 416
O'KEEFE COURT
BETWEEN LOTS 20 AND 21 CONCESSION 4 (RIDEAU FRONT) (NEPEAN)
PART 2 PLAN 5R-13897
PIN 04631-0388
ROAD ALLOWANCE
PART 14 PLAN 5R-13897
PIN 04631 - 0383
PIN 04631 - 0384
PIN 04631 - 0317
BLOCK 113
REGISTERED PLAN M-284
PROPOSED BUILDING 'A3' 1-STOREY INDUSTRIAL GROSS FLOOR AREA = 8,027 m² (86,400 ft²)
PROPOSED BUILDING 'A2' 1-STOREY INDUSTRIAL GROSS FLOOR AREA = 8,027 m² (86,400 ft²)
PROPOSED BUILDING 'A1' 1-STOREY INDUSTRIAL GROSS FLOOR AREA = 7,804 m² (84,000 ft²)
SNOW STORAGE AREA
FIRE ROUTE
SEPTIC PAD ELEV=105.80
SWM POND
Trees & Brush
SITE
LEGAL INFORMATION DERIVED FROM:
TOPOGRAPHICAL PLAN OF
PART OF LOT 21
CONCESSION 4 (RIDEAU FRONT)
GEOGRAPHIC TOWNSHIP OF NEPEAN
CITY OF OTTAWA
PREPARED BY
ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
JOB # 7332-06 PILON PT LOT 21 CON 4 RF NEPEAN TOPO D2
CONSTRUCTION NOTES
1 BARRIER CURB (AS PER OPSD 600.110)
2 90° PARKING STRIPE (WHITE - 0.15m STRIPES - TYP)
3 BARRIER FREE PAVEMENT MARKING AND Rb-93 SIGN
4 LANDSCAPED AREA (REFER TO LANDSCAPE DRAWINGS)
5 CONCRETE SIDEWALK (PER OPSD 310.010)
6 SIDEWALK RAMP (TO INCLUDE TACTILE ATTENTION MATS PER: OPSD - 310.039 - REFER TO SP-D1 FOR DETAIL)
7 PEDESTRIAN CROSSING (WHITE ZEBRA STRIPING - 0.60m AT 1.20m O.C.)
8 STOP BAR (WHITE) AND STOP SIGN (SEE DETAILS ON SP-D1)
9 FREESTANDING 'NO PARKING - FIRE ROUTE' SIGN
10 WALL MOUNTED 'NO PARKING - FIRE ROUTE' SIGN
11 PROPOSED 1.8m CHAIN-LINK FENCE (REFER TO LANDSCAPE DETAILS)
12 PROPOSED 2.4m CHAIN-LINK FENCE (REFER TO LANDSCAPE DETAILS)
13 POND WARNING SIGN
14 WASTE COMPACTOR ON CONCRETE PAD
15 PEDESTRIAN CROSSING SIGN
LEGEND
PROPERTY LINE
BUILDING OUTLINE
CONCRETE SIDEWALK
BARRIER CURB
1.8m CHAIN-LINK FENCE (REFER TO LANDSCAPE PLANS)
2.4m CHAIN-LINK FENCE (REFER TO LANDSCAPE PLANS)
FIRE ROUTE (MIN 12.0m CENTRELINE RADIUS)
SITE STATISTICS:
EXISTING SITE AREA: 68,844 m² (17.01 ACRES)
BUILDING AREA:
A1 7,804 m² (84,000 ft²)
A2 8,027 m² (86,400 ft²)
A3 8,027 m² (86,400 ft²)
TOTAL 23,858 m² (256,800 ft²)
PARKING REQUIRED: 0.80/100m² / FIRST 5,000m² (40 CARS)
0.40/100m² / THEREAFTER (75 CARS)
TOTAL: 115 CARS
PARKING PROVIDED: 119 CARS
D07-1 2-25-0085 AND PLAN#19335
THE PROPERTIES GROUP
KWA SITE DEVELOPMENT CONSULTING INC.
2453 Auckland Drive
Burlington, ON L7L 7A9
REVISION BLOCK
DATE DESCRIPTION
1. 06/11/2025 ISSUED FOR SITE PLAN APPROVAL
2. 09/18/2025 ISSUED FOR COORDINATION
CONCEPTUAL SITE PLAN
THE PROPERTIES GROUP
4497 O'KEEFE COURT (NEPEAN)
NEPEAN, ONTARIO
PROJECT No: 21684
DRAWN BY: BH
CHECKED BY: TF
NORTH ARROW
GRAPHIC SCALE
0m 10m 20m 30m
1:600
SA-001 r2

5.0 MITIGATION MEASURES

5.1 Site Preparation and Construction

The following mitigation measures should be applied during Site preparation and construction:

- Tree and vegetation clearing should not take place during sensitive times of the year for wildlife (breeding season; early spring throughout summer) unless mitigation measures are implemented and/or the habitat has been inspected by a qualified biologist.
    - The *Migratory Birds Convention Act* protects the nests and young of migratory breeding birds in Canada. No clearing of vegetation shall occur during the breeding bird window (between April 15 and August 15; City of Ottawa, 2015) to prevent impacts to birds. Combining the breeding bird window with the bat roosting season (May to September; MNRF, 2015a), no clearing of vegetation shall occur between April 15 and September 30 inclusive to prevent impacts to both birds and bats.

It is expected that all trees on the Site would need to be cleared for the project. Vegetation removal on the Site should be limited to that which is necessary to accommodate construction. If it is possible to retain trees on the Site, the following general protection measures are recommended for retained trees during site preparation and construction (City of Ottawa, 2015):

- Erect a fence beyond the CRZ of retained trees. The fence should be highly visible (orange construction fence) and paired with erosion and sediment 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 unless otherwise approved by the General Manager.
- Do not attach any signs, notices, or posters to any trees unless otherwise approved by the General Manager.
- Do not raise or lower the existing grade within the CRZ of trees unless otherwise approved by the General Manager.
- Do not extend any hard surface or significantly change landscaping within the CRZ of trees unless otherwise approved by the General Manager.
- Do not damage the root system, trunk, or branches of any remaining trees unless otherwise approved by the General Manager.
- Use tunneling or boring when digging within the CRZ of a tree.
- Ensure that exhaust fumes from equipment are not directed towards any tree's canopy.

5.2 Tree Planting Recommendations

Specific trees to be planted on the site are identified in the landscape plan for the development (James B. Lennox, 2025). Trees species identified in this plan however must be non-invasive and be native to the Ottawa. Final selection of tree species within the landscape plan must also consider the City of Ottawa's Clay Soils Policy. Recommended tree species to consider in the landscaping plan include Red Maple (*Acer rubrum*), White Spruce (*Picea glauca*), Pin Cherry (*Prunus pensylvanica*), White Birch (*Betula papyrifera*), Black Cherry (*Prunus nigra*), White Cedar (*Thuja occidentalis*) and Serviceberry (*Amelanchier* spp.) as other suitable candidate species. Burr Oak may be considered where spacing allows for future showcase trees. Common Juniper (*Juniperus communis*), Maple-leaf Viburnum (*Viburnum acerifolium*), Nannyberry (*Viburnum lentago*) and Northern Bush-honeysuckle (*Diervilla lonicera*) may be considered as appropriate shrub species.

6.0 CLOSURE

This report was prepared for exclusive use by The Properties Group and may be distributed only by The Properties Group. Questions relating to the data and interpretation can be addressed to the undersigned.

Respectfully submitted,

KILGOUR & ASSOCIATES LTD.

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LITERATURE CITED

City of Ottawa. 2003. Official Plan. Available online at: https://ottawa.ca/en/planning-development-and-construction/official-plan-and-master-plans/official-plan

City of Ottawa. 2015. Environmental Impact Statement Guidelines. Available online at: https://documents.ottawa.ca/sites/documents/files/documents/eis_guidelines2015_en.pdf

City of Ottawa. 2016. Greenspace Master Plan. Available online at: https://ottawa.ca/en/planning-development-and-construction/official-plan-and-master-plans/greenspace-master-plan

City of Ottawa. 2017. Tree Planting in Sensitive Marine Clay Soils – 2017 Guidelines. Available online: https://documents.ottawa.ca/sites/documents/files/tree_sensitive_soil_guide_en.pdf

City of Ottawa. 2018. Significant Woodlands: Guidelines for Identification, Evaluation, and Impact Assessment. Available online at: http://ottwatch.ca/meetings/file/572913

City of Ottawa. 2020. Tree Protection (By-law No. 2020-340).

Government of Canada. 1994. *Migratory Birds Convention Act*, 1994 (S.C. 1994, c. 22). Available online at: 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. Available online at: https://laws.justice.gc.ca/eng/acts/S-15.3/

Government of Ontario. 2007. *Endangered Species Act*. 2007. S.O. 2007, c.6. Available online at: https://www.ontario.ca/laws/statute/07e06

James B. Lennox. (2025). *Landscape Plan* [Map].

Kilgour & Associates Ltd. 2021. Environmental Impact Statement for the Proposed Development of 104 Willowlea Road and 228 Westbrook Road, Ottawa. Draft reported dated July 30, 2021 (Version 1). iii + 38 pp.

Ministry of Natural Resources and Forestry. 2015a. Technical Note: Species at Risk (SAR) Bats. OMNRF Regional Operations Division. 37 pp.

Ministry of Natural Resources and Forestry. 2015b. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. OMNRF Regional Operations Division: Southern Region Resources Section, Peterborough, Ontario. 39 pp.

Ministry of Natural Resources and Forestry. 2017. Survey Protocol for Species at Risk Bats within Treed Habitats: Little Brown Myotis, Northern Myotis & Tri-Colored Bat. OMNRF Guelph District. 13 pp.

Ministry of Natural Resources and Forestry. 2021. Natural Heritage Information Centre: Make Natural Heritage Map. Available online at: https://www.ontario.ca/page/make-natural-heritage-area-map

Muncaster Environmental Planning Inc. and Brunton Consulting Services. 2005. City of Ottawa Urban Natural Areas Environmental Evaluation Study Final Report. A report prepared for the Environmental Management Division, Planning & Growth Management Department, City of Ottawa. Available online at: https://app06.ottawa.ca/calendar/ottawa/citycouncil/pdc/2005/05-24/Final%20Report_UNAEES.htm

Appendix A Tree inventory table for the Site

Tree Number	Common Name	Scientific Name	Number of Stems	Diameter at Breast Height (cm)	Trunk Health	Canopy Health	Decay Class	Comments	Fate (Retained or Removed)
1-14	Austrian Pine	*Pinus nigra*	1	30	Fair: tree displays 15-40% deficiency/defect	Fair: tree displays 15-40% deficiency/defect	2: Declining live tree, part of canopy lost		Removed
15-21	Trembling Aspen	*Populus tremuloides*	2-4	15-20	Good: tree displays less than 15% deficiency/defect	Good: tree displays less than 15% deficiency/defect	1: Healthy, live tree		Removed
22-23	Manitoba Maple	*Acer negundo*	1	20	Good: tree displays less than 15% deficiency/defect	Good: tree displays less than 15% deficiency/defect	1: Healthy, live tree		Removed
24-26	Trembling Aspen	*Populus tremuloides*	1	15	Good: tree displays less than 15% deficiency/defect	Good: tree displays less than 15% deficiency/defect	1: Healthy, live tree		Removed
27-37	Buckthorn	*Rhamnus cathartica*	1-10	<10	Good: tree displays less than 15% deficiency/defect	Good: tree displays less than 15% deficiency/defect	1: Healthy, live tree		Removed
38-41	White Willow	*Salix alba*	10-20	1-3	Good: tree displays less than 15% deficiency/defect	Good: tree displays less than 15% deficiency/defect	1: Healthy, live tree		Removed
42-44	Trembling Aspen	*Populus tremuloides*	1	10-20	Good: tree displays less than 15% deficiency/defect	2 x Good: tree displays less than 15% deficiency/defect 1 x Poor: tree displays greater than 40% deficiency/defect	2 x 1: Healthy, live tree 1 x 2: Declining live tree, part of canopy lost		Removed
45-48	White Willow	*Salix alba*	1-5	20	Good: tree displays less than 15% deficiency/defect	Good: tree displays less than 15% deficiency/defect	1: Healthy, live tree		Removed
49-53	Trembling Aspen	*Populus tremuloides*	1	20-50	Good: tree displays less than 15% deficiency/defect	Good: tree displays less than 15% deficiency/defect	1: Healthy, live tree		Removed
54-59	Manitoba Maple	*Acer negundo*	1-3	10-20	Good: tree displays less than 15% deficiency/defect	Good: tree displays less than 15% deficiency/defect	1: Healthy, live tree		Removed
60	Trembling Aspen	*Populus tremuloides*	2	85	Good: tree displays less than 15% deficiency/defect	Fair: tree displays 15-40% deficiency/defect	2: Declining live tree, part of canopy lost		Removed

Appendix D SAR Assessment

Appendix D1 - List of species at risk with potential to in the broader vicinity of the project site based on a desktop review of occurrence records

Species Name (*Scientific name*)	Information Source
Birds	
Alder Flycatcher (*Empidonax alnorum*)	California Academy of Sciences and National Geographic Society (2023)
American White Pelican (*Pelecanus erythrorhynchos*)	Cornell Lab of Ornithology (2023)
Bald Eagle (*Haliaeetus leucocephalus*)	California Academy of Sciences and National Geographic Society (2023); Cornell Lab of Ornithology (2023)
Bank Swallow (*Riparia riparia*)	Birds Canada et al. (2009); Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023b)
Barn Swallow (*Hirundo rustica*)	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021)
Black Tern (*Chlidonias niger*)	Cornell Lab of Ornithology (2023)
Bobolink (*Dolichonyx oryzivorus*)	Birds Canada et al. (2009); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023); MNRF (2023a); MNRF (2023b)
Canada Warbler (*Cardellina canadensis*)	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023); MNRF (2023a)
Chimney Swift (*Chaetura pelagica*)	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)
Common Nighthawk (*Chordeiles minor*)	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)
Eastern Meadowlark (*Sturnella magna*)	Birds Canada et al. (2009); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023); MNRF (2023a); MNRF (2023b)
Eastern Whip-poor-will (*Antrostomus vociferus*)	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)
Eastern Wood-Pewee (*Contopus virens*)	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)
Evening Grosbeak (*Coccothraustes vespertinus*)	Birds Canada et al. (2009); Cornell Lab of Ornithology (2023)
Golden Eagle (*Aquila chrysaetos*)	Cornell Lab of Ornithology (2023)
Golden-winged Warbler (*Vermivora chrysoptera*)	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)
Grasshopper Sparrow (*Ammodramus savannarum*)	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)

Least Bittern (*Ixobrychus exilis*)	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023); MNRF (2023a); MNRF (2023b)
Loggerhead Shrike (*Lanius ludovicianus*)	Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023b)
Olive-sided Flycatcher (*Contopus cooperi*)	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)
Peregrine Falcon (*Falco peregrinus*)	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)
Red-headed Woodpecker (*Melanerpes erythrocephalus*)	Committee on the Status of Endangered Wildlife in Canada (2021)
Rusty Blackbird (*Euphagus carolinus*)	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)
Short-eared Owl (*Asio flammeus*)	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)
Wood Thrush (*Hylocichla mustelina*)	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023); MNRF (2023a)
Yellow rail (*Coturnicops noveboracensis)*	Committee on the Status of Endangered Wildlife in Canada (2021)
Mammals	
Eastern Small-footed Myotis (*Myotis leibii*)	Humphrey (2017)
Little Brown Myotis (*Myotis lucifugus*)	Humphrey and Fotherby (2019)
Northern Myotis (*Myotis septentrionalis)*	Humphrey and Fotherby (2019)
Tri-colored Bat (*Perimyotis subflavus*)	Humphrey and Fotherby (2019)
Amphibians	
Western Chorus Frog (*Pseudacris triseriata*)	Committee on the Status of Endangered Wildlife in Canada (2021); Ontario Nature (2019)
Reptiles	
Blanding's Turtle (*Emydoidea blandingii*)	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023a); MNRF (2023b); Ontario Nature (2019)
Eastern Musk Turtle (*Sternotherus odoratus*)	Committee on the Status of Endangered Wildlife in Canada (2021)
Northern Map Turtle (*Graptemys geographica*)	California Academy of Sciences and National Geographic Society (2023)
Snapping Turtle (*Chelydra serpentina*)	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023a); MNRF (2023b); Ontario Nature (2019)

Spotted Turtle (*Clemmys guttata*)	Committee on the Status of Endangered Wildlife in Canada (2021)
Arthropods	
Monarch (*Danaus plexippus*)	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Toronto Entomologists' Association (2023)
Nine-spotted Lady Beetle (*Coccinella novemnotata*)	MNRF (2023b)
Yellow-banded Bumble Bee (*Bombus terricola*)	MNRF (2023b)
Fish	
Lake Sturgeon (*Acipenser fulvescens*)	MNRF (2023b)
Vascular Plants	
Black Ash (*Fraxinus nigra*)	California Academy of Sciences and National Geographic Society (2023); MNRF (2023a)
Butternut (*Juglans cinerea*)	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023a); MNRF (2023b)
Lichens	
Flooded Jellyskin (*Leptogium rivulare*)	Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023a)
Pale-bellied Frost Lichen (*Physconia subpallida*)	Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023b)

We note that observation records on eBird (Cornell Lab of Ornithology, 2023), iNaturalist (California Academy of Sciences and National Geographic Society, 2023), Bumble Bee Watch (Wildlife Preservation Canada et al, 2023), and the Ontario Butterfly Atlas (Toronto Entomologists' Association, 2023) are crowd-sourced and rely heavily on data submitted by volunteer citizen scientists that are not necessarily vetted by experts. As such, observation records from these sources are considered non-confirmed by KAL but are included in this preliminary SAR screening based on guidelines set forth by MECP (2019).

Appendix D2 – Site assessment of SAR potential considering habitat and observation records

Species Name (*Taxonomic Name*)	Status under *Endangered Species Act* (ESA)	Status under Schedule 1 of the *Species at Risk Act* (SARA)	Observation Record Sources (within 10 km of the Site)	General Habitat Requirements	Site Suitability	Potential for Protected Elements[1]		Assessed Potential for Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
Birds								
Alder Flycatcher	**Endangered**	**Endangered**	eBir California Academy of Sciences and National Geographic Society (2023)	Mature, shady forests with ravines, or in forested swamps with lots of maple and beech trees. The species requires large, undisturbed forests, often more than 40 hectares in size.	The Site does not provide suitable habitat.	Negligible	Negligible Transient occurrence near the project area is possible.	Negligible
American White Pelican (*Pelecanus erythrorhynchos*)	**Threatened**	**Not at Risk**	Cornell Lab of Ornithology (2023)	Nests in groups on barren or sparsely treed remote islands located in lakes, reservoirs, or on large rivers. Migration only; within Ontario breeding is limited a few sites in the west and north (MECP, 2022a).	The Site does not provide suitable habitat.	Negligible	Negligible Transient occurrence near the project area is possible.	Negligible
Bald Eagle (*Haliaeetus leucocephalus*)	**Special Concern**	**Not at Risk**	California Academy of Sciences and National Geographic Society (2023); Cornell Lab of Ornithology (2023)	Nest in mature forests near open water. In large trees such as pine and poplar.	The Site does not provide suitable habitat.	Negligible	Negligible Transient occurrence near the project area is possible.	Negligible
Bank Swallow (*Riparia riparia*)	**Threatened**	**Threatened**	Birds Canada et al. (2009); Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023b)	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 has some potential as feeding habitat but no suitable nesting areas are present nearby.	Negligible	Low	Low
Barn Swallow (*Hirundo rustica*)	**Special Concern**	**Threatened**	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021)	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 has some potential as feeding habitat. The potential for nearby nest areas is limited.	Low	Moderate	Moderate
Black Tern (*Chlidonias niger*)	**Special Concern**	**Not at Risk**	Cornell Lab of Ornithology (2023)	Build floating nests in loose colonies in shallow marshes with abundant emergent vegetation, especially in cattails.	The Site does not provide suitable habitat.	Negligible	Low Transient occurrence near the project area is possible.	Negligible

Species Name (*Taxonomic Name*)	Status under *Endangered Species Act* (ESA)	Status under Schedule 1 of the *Species at Risk Act* (SARA)	Observation Record Sources (within 10 km of the Site)	General Habitat Requirements	Site Suitability	Potential for Protected Elements[1]		Assessed Potential for Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
Bobolink (*Dolichonyx oryzivorus*)	**Threatened**	**Threatened**	Birds Canada et al. (2009); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023); MNRF (2023a); MNRF (2023b)	Breeds in hayfields, pastures, agricultural fields, and abandoned fields with tall grass that are ≥5 ha, and preferably >30 ha.	The "open" area likely contains too many trees and is too small to provide preferred habitat.	Moderate	Low Transient occurrence near the project area is possible.	Moderate
Canada Warbler (*Cardellina canadensis*)	**Special Concern**	**Threatened**	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023); MNRF (2023a)	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 provide suitable habitat.	Low	Low Transient occurrence near the project area is possible.	Low
Chimney Swift (*Chaetura pelagica*)	**Threatened**	**Threatened**	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)	Nests in traditional-style open brick chimneys (and rarely in hollow trees). Tends to stay close to water.	There are no chimneys on or near the Site and trees are too young and small.	Low	Low	Low
Common Nighthawk (*Chordeiles minor*)	**Special Concern**	**Threatened**	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)	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 with very little ground cover on-site may provide limited nesting potential.	Low	Low	Low
Eastern Meadowlark (*Sturnella magna*)	**Threatened**	**Threatened**	Birds Canada et al. (2009); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023); MNRF (2023a); MNRF (2023b)	Breeds in hayfields, pastures, agricultural fields, and abandoned fields with tall grass that are ≥5 ha, and preferably >30 ha.	The regenerating meadow contains too many small trees and shrubs and is too moist to support Bobolink.	Low	Low Transient occurrence near the project area is possible.	Low
Eastern Whip-poor-will (*Antrostomus vociferus*)	**Special Concern**	**Threatened**	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)	Suitable breeding habitats generally include open and half treed areas and often exhibit a scattered distribution of treed and open space. Lays eggs directly on the forest floor. Roosts are typically located in forest habitat on a low branch or directly on the	Although the habitat adjacent to the Site contains suitable habitat characteristic, the general area is too small and fragmented to provide suitable habitat.	Low	Low	Low

Species Name (*Taxonomic Name*)	Status under *Endangered Species Act* (ESA)	Status under Schedule 1 of the *Species at Risk Act* (SARA)	Observation Record Sources (within 10 km of the Site)	General Habitat Requirements	Site Suitability	Potential for Protected Elements[1]		Assessed Potential for Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
				ground. Home range size varies from 20 to 500 ha (mean 136 ha) (ECCC, 2018a).				
Eastern Wood-Pewee (*Contopus virens*)	**Special Concern**	**Special Concern**	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)	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 forest in the northeast corner of the Site may provide suitable habitat.	Moderate	Moderate	Moderate
Evening Grosbeak (*Coccothraustes vespertinus*)	**Special Concern**	**Special Concern**	Birds Canada et al. (2009); Cornell Lab of Ornithology (2023)	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 may provide marginally suitable habitat, as it does not contain many conifers.	Low	Low	Low
Golden Eagle (*Aquila chrysaetos*)	**Endangered**	**Not at Risk**	Cornell Lab of Ornithology (2023)	Nests in remote, undisturbed areas, usually building their nests on ledges on a steep cliff/riverbank or large trees if needed. Most hunting is done near open areas such as large bogs or tundra. Migration only; no reported nests in Ottawa.	The Site does not provide suitable habitat.	Negligible	Low Transient occurrence near the project area is possible.	Negligible
Golden-winged Warbler (*Vermivora chrysoptera*)	**Special Concern**	**Threatened**	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)	Ground-nests in areas of young shrubs surrounded by mature forest. Often found in areas that have recently been disturbed such as field edges, hydro or utility right-of-ways, or logged areas. Requires >10 ha of habitat (OMNR, 2000).	The Site does not provide suitable habitat.	Low	Low Transient occurrence near the project area is possible.	Low
Grasshopper Sparrow (*Ammodramus savannarum*)	**Special Concern**	**Special Concern**	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in	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 hidden in	The Site does not provide suitable habitat.	Low	Low Transient occurrence near the project area is possible.	Low

Species Name (*Taxonomic Name*)	Status under *Endangered Species Act* (ESA)	Status under Schedule 1 of the *Species at Risk Act* (SARA)	Observation Record Sources (within 10 km of the Site)	General Habitat Requirements	Site Suitability	Potential for Protected Elements[1]		Assessed Potential for Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
			Canada (2021); Cornell Lab of Ornithology (2023)	the field, woven from grasses in a small cup-like shape.				
Least Bittern (*Ixobrychus exilis*)	**Threatened**	**Threatened**	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023); MNRF (2023a); MNRF (2023b)	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	Low Transient occurrence near the project area is possible.	Negligible
Lesser Yellowlegs (*Tringa flavipes*)	**Threatened**	**No Status**	n/a	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
Loggerhead Shrike (*Lanius ludovicianus*)	**Endangered**	**Endangered**	Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023b)	Prefers grazed pastures or other grasslands with scattered low trees and shrubs, especially hawthorns. Lives in fields or alvars (areas of exposed bedrock) with short grass, which makes it easier to spot prey.	The Site does not appear to contain suitable habitat.	Low	Low	Low
Olive-sided Flycatcher (*Contopus cooperi*)	**Special Concern**	**Threatened**	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)	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 provides limited potential as suitable habitat.	Low	Low Transient occurrence near the project area is possible.	Low
Peregrine Falcon (*Falco peregrinus*)	**Special Concern**	**Special Concern**	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)	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 provide suitable habitat.	Negligible	Low Transient occurrence near the project area is possible.	Negligible
Red-headed Woodpecker (*Melanerpes erythrocephalus*)	**Endangered**	**Endangered**	Committee on the Status of Endangered Wildlife in Canada (2021)	Lives in open woodland and woodland edges and is often found in parks, golf courses, and cemeteries. These areas typically have many dead trees, which the	The Site may provide marginally suitable habitat, as it does not contain snags.	Low	Low Transient occurrence near the	Low

Species Name (*Taxonomic Name*)	Status under *Endangered Species Act* (ESA)	Status under Schedule 1 of the *Species at Risk Act* (SARA)	Observation Record Sources (within 10 km of the Site)	General Habitat Requirements	Site Suitability	Potential for Protected Elements[1]		Assessed Potential for Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
				birds use for nesting and perching.			project area is possible.	
Rusty Blackbird (*Euphagus carolinus*)	**Special Concern**	**Special Concern**	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)	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 may provide marginally suitable habitat,	Low	Low Transient occurrence near the project area is possible.	Low
Short-eared Owl (*Asio flammeus*)	**Threatened**	**Special Concern**	Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023)	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).	Regrated Site does not appear to provide suitable habitat.	Low	Low Transient occurrence near the project area is possible.	Low
Wood Thrush (*Hylocichla mustelina*)	**Special Concern**	**Threatened**	Birds Canada et al. (2009); California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Cornell Lab of Ornithology (2023); MNRF (2023a)	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 forest in the northeast corner of the Site may provide suitable habitat.	Moderate	Moderate	Moderate
Yellow Rail (*Coturnicops noveboracensis*)	**Special Concern**	**Special Concern**	Committee on the Status of Endangered Wildlife in Canada (2021)	Lives deep in the reeds, sedges, and marshes of shallow wetlands, where they nest on the ground. The marshy areas used by Yellow Rails have an overlying dry mat of dead vegetation that is used to make roofs for nests.	The Site does not contain suitable habitat.	Negligible	Low Transient occurrence near the project area is possible.	Negligible
Mammals								
Eastern Small-footed Myotis (*Myotis leibii*)	**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.	The forest on-site may provide suitable roosting habitat, while the forest and open areas may provide suitable foraging habitat.	Moderate	Moderate	Moderate

Species Name (*Taxonomic Name*)	Status under *Endangered Species Act* (ESA)	Status under Schedule 1 of the *Species at Risk Act* (SARA)	Observation Record Sources (within 10 km of the Site)	General Habitat Requirements	Site Suitability	Potential for Protected Elements[1]		Assessed Potential for Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
Little Brown Myotis (*Myotis lucifugus*)	**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.	The forest on-site may provide suitable roosting habitat, while the forest edges and open areas may provide suitable foraging habitat.	Moderate	Moderate	Moderate
Northern Myotis / Northern Long-eared Bat (*Myotis septentrionalis*)	**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.	The forest on-site may provide suitable roosting habitat, while the forest and open areas may provide suitable foraging habitat.	Moderate	Moderate	Moderate
Tri-colored Bat / Eastern Pipistrelle (*Perimyotis subflavus*)	**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.	The forest on-site may provide suitable roosting and foraging habitat.	Moderate	Moderate	Moderate
Amphibians								
Western Chorus Frog (*Pseudacris triseriata*)	**Not Listed**	Great Lakes/ St. Lawrence population: **Threatened**	Committee on the Status of Endangered Wildlife in Canada (2021); Ontario Nature (2019)	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.	The open, moist meadow may contain vernal pools that that could provide suitable breeding habitat.	Moderate	Moderate	Moderate
Reptiles								
Blanding's Turtle (*Emydoidea blandingii*)	**Threatened**	**Endangered**	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023a); MNRF (2023b); Ontario Nature (2019)	Quiet lakes, streams, and wetlands with abundant emergent vegetation. Also frequently occurs in adjacent upland forests.	The species is recognized to occur in the vicinity. The Site is ~75 m from the Lytle Park Pond, which is the nearest suitable wetland. Portions of the Site thus nominally constitute Category 3 Habitat.	Low	High	High
Eastern Musk Turtle / Stinkpot (*Sternotherus odoratus*)	**Special Concern**	**Special Concern**	Committee on the Status of Endangered Wildlife in Canada (2021)	Found in lakes, ponds, marshes, and rivers that are generally slow-moving, have abundant emergent vegetation, and muddy bottoms	The Site does not 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)	Observation Record Sources (within 10 km of the Site)	General Habitat Requirements	Site Suitability	Potential for Protected Elements[1]		Assessed Potential for Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
				that they burrow into for winter hibernation.				
Northern Map Turtle (*Graptemys geographica*)	**Special Concern**	**Special Concern**	California Academy of Sciences and National Geographic Society (2023)	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 contain suitable habitat.	Negligible	Negligible	Negligible
Snapping Turtle (*Chelydra serpentina*)	**Special Concern**	**Special Concern**	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023a); MNRF (2023b); Ontario Nature (2019)	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 pond east of the Site may provide suitable habitat The Site may provide marginal nesting habitat. There is no suitable habitat on the Site.	Low	Low	Low
Spotted Turtle (*Clemmys guttata*)	**Endangered**	**Endangered**	Committee on the Status of Endangered Wildlife in Canada (2021) – in region	Semi-aquatic and prefers ponds, marshes, bogs, and even ditches with slow-moving, unpolluted water and an abundant supply of aquatic vegetation.	The Site does not contain suitable habitat.	None	Negligible Known to occur broadly in eastern Ontario.	None
Arthropods								
Monarch (*Danaus plexippus*)	**Special Concern**	**Special Concern**	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); Toronto Entomologists' Association (2023)	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.	No milkweed noted on the Site	Low	Low Transient occurrence near the project area is possible.	Low
Nine-spotted Lady Beetle (*Coccinella novemnotata*)	**Endangered**	**No Status**	MNRF (2023b)	Occurs within agricultural areas, suburban gardens, parks, coniferous forests, deciduous forests, prairie grasslands, meadows, riparian areas, and isolated natural areas.	There have been no records of this species in Ontario since the mid-1990s (MECP, 2019c).	None	None	None

Species Name (*Taxonomic Name*)	Status under *Endangered Species Act* (ESA)	Status under Schedule 1 of the *Species at Risk Act* (SARA)	Observation Record Sources (within 10 km of the Site)	General Habitat Requirements	Site Suitability	Potential for Protected Elements[1]		Assessed Potential for Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
Yellow-banded Bumble Bee (*Bombus terricola*)	**Special Concern**	**Special Concern**	ECCC (2022) – in region; MNRF (2023b)	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.	As a habitat generalist, most areas could be deemed suitable, though occurrence is rare.	Low	Low	Low
Fish								
Lake Sturgeon (*Acipenser fulvescens*)	**Endangered**	**No Status**	MNRF (2023b)	Only found in large lakes and rivers. Forages in cool water, 4-9 m deep over soft substrate; spawns in shallower, fast-flowing areas over rocks or gravel.	The Site does not contain suitable habitat.	None	None	None
Vascular Plants								
Black Ash (*Fraxinus nigra*)	**Endangered**	**No Status**	California Academy of Sciences and National Geographic Society (2023); MNRF (2023a)	Predominantly a wetland species found in swamps, floodplains, and fens.	The Site provides limited suitability as habitat.	Low	Low	Low
Butternut (*Juglans cinerea*)	**Endangered**	**Endangered**	California Academy of Sciences and National Geographic Society (2023); Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023a); MNRF (2023b)	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 contains suitable habitat (moist edge conditions) and some individuals were previously observed on the Site (in 2016). All observed individuals were small and in very poor condition at that time. Tree surveys in 2023 found no remaining individuals.	Moderate	Moderate	Moderate
Lichens								
Flooded Jellyskin (*Leptogium rivulare*)	**No Status**	**Special Concern**	Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023a)	Grows in seasonally flooded habitats, typically on the bark of deciduous trees, on rocks along the margins of seasonal ponds, and on rocks along shorelines and stream/riverbeds.	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)	Observation Record Sources (within 10 km of the Site)	General Habitat Requirements	Site Suitability	Potential for Protected Elements[1]		Assessed Potential for Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
Pale-bellied Frost Lichen (*Physconia subpallida*)	**Endangered**	**Endangered**	Committee on the Status of Endangered Wildlife in Canada (2021); MNRF (2023b)	Typically grows on the bark of hardwood trees such as White Ash, Black Walnut, and American Elm. Can also be found growing on fence posts and boulders.	There are no recent records of the species in the Ottawa area (MECP, 2019f).	None	None	None

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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.