Initial Environmental Impact Study for 3930 and 3960 Riverside Drive, Ottawa, Ontario

Final Report

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Submitted To:

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EXECUTIVE SUMMARY

This initial Environmental Impact Study (EIS) was prepared by Kilgour & Associates Ltd. (KAL) on behalf of Taggart Realty Management in support of their application for a proposed development at 3930 and 3960 Riverside Drive, Ottawa, Ontario ("the Site"). In the City of Ottawa, an EIS is required when development or site alteration is proposed in or adjacent to natural heritage features. The purposes of this initial EIS are to identify 1) natural heritage features on or adjacent to the Site; 2) potential impacts of the proposed development on those features; and 3) mitigation measures to minimize or eliminate those impacts. The requirement of an EIS for the proposed development was triggered by 1) proximity of the proposed development to wetland and floodplain areas; 2) the encroachments into an Urban Natural Area (UNA); and 3) potential impacts to species at risk (SAR) and SAR habitat.

The proposed project will comprise development of a residential subdivision, comprising mixed residential dwellings (apartments, townhouses, and single detached homes) and supporting infrastructure, including parking areas and roadways. Road access would include one point of entry along Riverside Drive to the east. The proposed development would require considerable vegetation clearing within a mixed meadow and tree removal within a deciduous woodland. It would have minimal impacts to unevaluated swamps and avoid the floodplain.

Background information for the Site and surrounding area was obtained from online databases and geographic information system mapping applications to review relevant information. Field studies of the Site were conducted during the fall of 2021 and 2022 to confirm the findings of the background review. This included an initial site visit and delineation of vegetation communities. Additional field surveys are required to determine the impact of the development and appropriate mitigation measures. The surveys required in order to produce a final EIS are: breeding bird surveys, acoustic bat monitoring, tree studies, invasive species survey, and a headwater drainage feature assessment.

The proposed project has potential to interact with ten SAR listed as Endangered or Threatened in Ontario, including Blanding's Turtle, two species of trees, three species of birds, and four species of bats. It is recommended that breeding bird surveys and acoustic bat monitoring surveys are completed prior to the removal of trees within the mature forests. Once surveys are completed and the final EIS is produced appropriate vegetation-clearing windows will be followed to minimize impacts to birds and bats. Wildlife exclusion fencing will be installed around the project perimeter to prevent smaller wildlife species (e.g., turtles) from accessing the site during development.

This initial EIS provides a set of mitigation measures for employment in the design and construction of the proposed development, such as the use of standard erosion and sediment control (ESC) measures, and recommends further studies and mitigation measures to prevent impacts to SAR. The final EIS will provide additional, detailed mitigation measures.

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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 report is an initial Environmental Impact Study (EIS) prepared by Kilgour & Associates Ltd. (KAL; Appendix A) on behalf of Taggart Realty Management in support of the proposed development at 3930 and 3960 Riverside Drive, Ottawa, Ontario ("the Site"; Figure 1). The proposed residential subdivision would include a mix of housing from single detached to apartments. The tallest residences will be located at the southern end of the Site with building heights reducing further north. A multi-use pathway is also proposed to be associated with the Site. The final EIS will be drafted and completed for submission to the City of Ottawa once the surveys outlined in Section 4.2.4 are complete.

An EIS was previously prepared for the project (Muncaster Environmental Planning Inc., 2018) but requires updates to reflect current plans and site conditions as advised by the City of Ottawa in the project pre-consultation meeting (Appendix B). Also, KAL submitted a technical memorandum to Taggart Realty Management on December 7, 2021, addressing the potential environmental constraints associated with proposed slope modifications at 3930 Riverside Drive, Ottawa.

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

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

Figure 1 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 Statement, 2020

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

heritage features and areas in Ontario. This manual further addresses the width of adjacent lands to be considered when evaluating potential negative impacts, such as areas within 120 m of protected natural heritage features.

2.2 City of Ottawa Official Plan, 2021

The City of Ottawa Official Plan (2021) provides direction for future growth in the City and is a policy framework to guide physical development to 2031 in accordance with the PPS. The Official Plan was first approved in 2003 and is typically updated every five years. The Official Plan includes a Natural Heritage Features map (Schedule 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; 1994) and listed as Endangered, Threatened, or Extirpated under Schedule 1 of SARA are protected wherever they occur in Canada, regardless of land ownership.

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 performing 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, 1990b). The Act provides mechanisms to regulate works and site alterations that have potential to affect erosion, flooding, land conservation, and alterations to waterbodies within their jurisdiction. It is the obligation of all Conservation Authorities to implement Ontario Regulations 42/06 and 146/06 to 182/06 *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses* under Section 28 of the *Conservation Authorities Act* for relevant works.

3.0 PROPERTY IDENTIFICATION

The Site is approximately 8.15 hectares (ha) in size and is located at 3930 and 3960 Riverside Drive, Ottawa, Ontario (Lat: 45.336400°N and Long: -75.695265°W; Figure 1). It is located approximately directly east of the Rideau River. The Site is dominated by forested habitats on the western half and open meadow communities on the east. An unevaluated wetland (thicket swamp) is located along the northern site boundary and extends north of the Site. Prior to 1991, a stormwater management (SWM) pond was developed approximately 245 m north of the Site (City of Ottawa, 2022a). The northern end of the Site is divided by a trail and hydro line that runs northeast to the southwest; the trail continues southeast along the Rideau River. A pumphouse station exists along the Rideau River where the trail veers southeast.

A steep slope bisects the northern end of the Site from north to south, sloping down steeply to the west towards the Rideau River. The slope along the Rideau River is densely vegetated while the slope towards the northern portion of the study area is dominated by a sandy ridge with the substate exposed in several areas. The steepest part of the slope was observed along the sandy ridge on the western side of the trail towards the northern tip of the Site.

The Site is currently zoned GM1[1719] S251 H(137 A.S.L.), following a zoning amendment approval under By-Law 2019-93, supported by City Council on April 10, 2019 (Appendix B). The majority of the zoning of the property is GM1 (General Mixed-Use Zone), while the northwestern portion of the property is EP1 (Environmental Protection Zone). Within Environmental Protected Zones permitted uses are environmental preserve and education area, and forestry operation. Within the EP1 Subzone, utility installation is also permitted (City of Ottawa, 2022b). The Environmental Protection zone is associated with the City of Ottawa Urban Natural Area (UNA), Riverwood Park Woods (UNA #147), which extends to the north along the Rideau River (Figure 2). The Environmental Protection zone extends farther south along the Rideau River than UNA #147. It is anticipated that the edge of the Environmental Protection zone and therefore UNA #147 would be impacted by the proposed development. UNA #147 will be discussed in detail in Section 5.4.

The Site is bordered by:

- Unevaluated wetlands, forest, Quinterra SWM pond, and residential properties to the north;
- Riverside Drive and golf course to the east;
- Hunt Club Road, commercial properties, meadow, SWM pond, and airport landing strips to the south; and
- Rideau River, forest, residential properties, and commercial properties to the west.

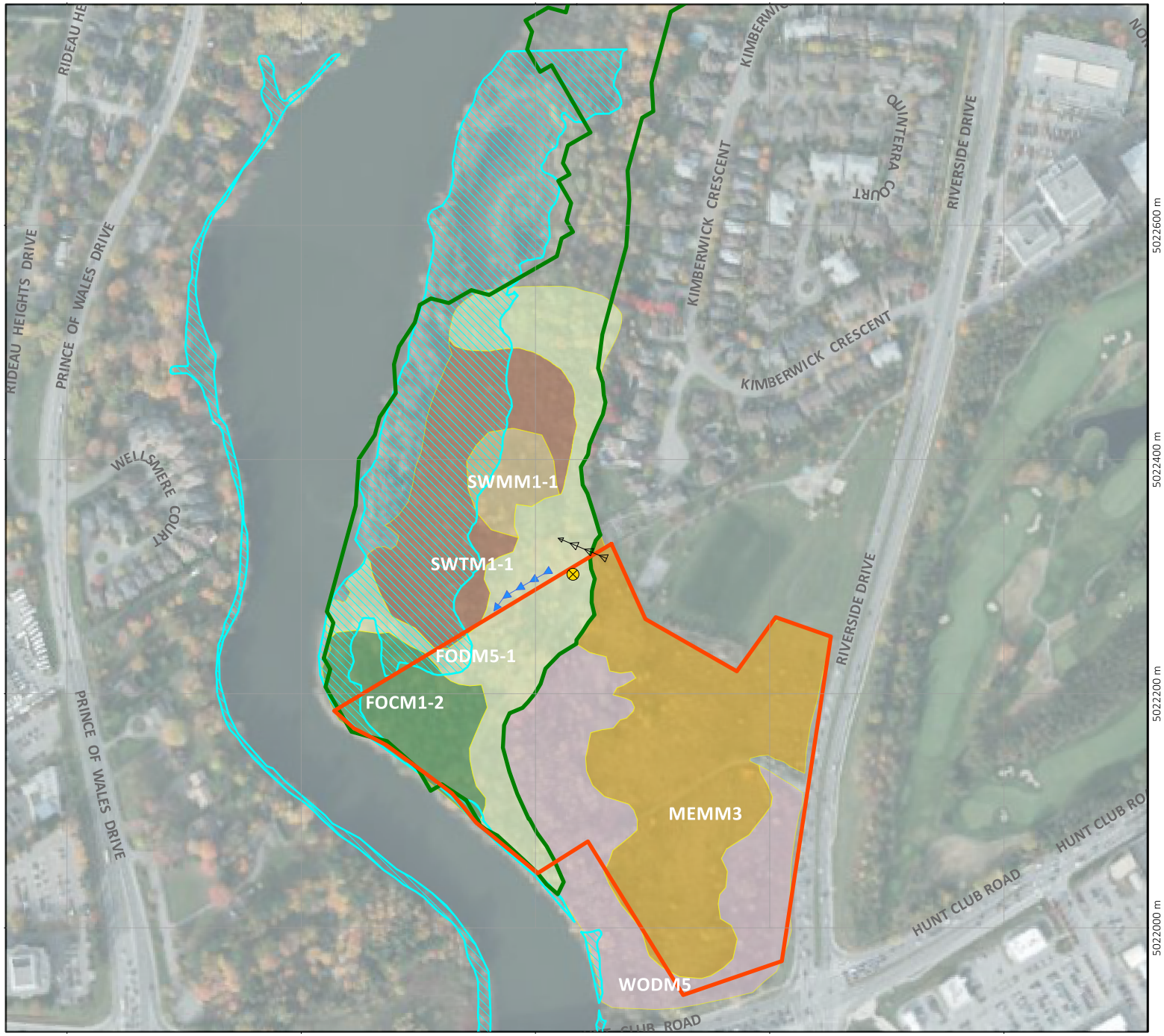

Figure 2 Existing natural environment features within the Site

Legend

- Site Boundary
- Floodplain
- UNA 147
- Drainage Channel
- Groundwater Seep
- Butternut

ELC Code

- FOCM1-2
- FODM5-1
- MEMM3
- SWMM1-1
- SWTM1-1
- WODM5

N

0 150 m

Project: TAGG 1299
Map File: TAGG 1299-2212b.map
MTM Zone 9
(NAD 83)
Printed on: 2022-12-12

KILGOUR & Associates

4.0 METHODOLOGY

4.1 Desktop and Background Data Review

4.1.1 Background Review

Background information was obtained from online databases and geographic information system mapping applications to review relevant information. Aerial imagery was used to identify existing features and confirm information found in the background review. Background information was obtained from available resources, which include:

- Species at Risk in Ontario (SARO; Ministry of Environment, Conservation, and Parks (MECP, 2022);
- Species at Risk Public Registry (Government of Canada, 2022);
- Natural Heritage Information Centre (NHIC; Ministry of Natural Resources, and Forestry (MNRF, 2022a);
- Land Information Ontario (MNRF, 2022b);
- Aquatic Species at Risk Map (DFO, 2022);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019);
- Ontario Breeding Birds Atlas (Birds Canada et al., 2009);
- Ontario Butterfly Atlas (Toronto Entomologists' Association, 2022);
- eBird (Cornell Lab of Ornithology, 2022a);
- iNaturalist (California Academy of Sciences and National Geographic Society, 2022);
- Bumble Bee Watch (Wildlife Preservation Canada et al., 2022);
- Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tri-colored Bat (*Perimyotis subflavus*) in Ontario (Humphrey and Fotherby, 2019);
- Recovery Strategy for the Eastern Small-footed Myotis (*Myotis leibii*) in Ontario (Humphrey, 2017);
- Fish ON-Line (MNRF, 2022c);
- Technical Memorandum: Potential environmental constraints associated with proposed slope modifications at 3930 Riverside Drive, Ottawa (KAL, 2021);
- 3860 and 3930 Riverside Drive: Tree Conservation Report and Environmental Impact Statement (Muncaster Environmental Planning Inc., 2018); and

- Ontario Geotechnical Boreholes (MNRF, 2022d).

4.1.2 Agency Consultation

The review of existing information included a preliminary SAR screening for species listed under the federal SARA and provincial ESA. The screening identified SAR having some potential to occur on or near the Site. The screening was completed following the *Draft Client's Guide to Preliminary Screening for Species at Risk* (MECP, 2019a). The results of the screening were sent to MECP on March 22, 2022, to confirm the information collected (Appendix C). A response had not yet been received at the time of writing this report, though it is considered unlikely that MECP would indicate potential for SAR beyond those already considered in this EIS.

The Site is located within the jurisdictions of the City Ottawa and Rideau Valley Conservation Authority (RVCA). A pre-consultation meeting was held with the City of Ottawa on September 1, 2021, to determine the scope of the EIS (Appendix B). Further, the Client engaged the City of Ottawa in a further pre-consultation meeting (with KAL present) to scope the EIS on February 9, 2022. Pre-consultation comments identified that the need for this EIS was triggered by 1) proximity of the proposed development to wetland and floodplain areas, with potential impacts to aquatic habitats; 2) UNA #147 encroachment; and 3) potential impacts to SAR and SAR habitat.

4.2 Field Surveys

KAL conducted an initial site visit on November 24, 2021, as part of a background review of slope modifications proposed to support a potential site plan (KAL, 2021). KAL revisited the Site on October 19, 2022, following the resumption of project planning for the proposed development to document existing ecological conditions on the Site and to confirm the results of the background review.

4.2.1 Water Features

Aerial imagery and public databases were reviewed to identify potential wetland areas and watercourses (MNRF, 2022a; City of Ottawa, 2022a). Observed wetlands were field-delineated and characterized as part of the Ecological Land Classification (ELC) exercise (see Section 4.2.3). The groundwater seep and drainage channel on-site were characterized during a site visit.

The Site is adjacent to the Rideau River. For this area, setback requirements to the river are assigned per Section 4.9.6 Paragraph 2) of the City of Ottawa (2021) Official Plan:

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

4.2.2 Landforms and Soils

Existing data on soils in the vicinity of the Site were obtained from the Ontario Geotechnical Boreholes Data collected in 2001 (MNRF, 2022d). This data was supplemented by soil cores taken in the field using a 120 cm soil auger at select locations within the Site.

4.2.3 Ecological Land Classification

Vegetation communities on the Site were identified and mapped in the field on October 19, 2022, using standard 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. This method results in a standardized description of each vegetation community to capture the natural diversity and variability of communities within a site and to provide insight into available habitat and the type of species that may be present. More specifically, the classifications from ELC provide a basis for determining whether potential habitat for a given SAR or other ecological value may be present.

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. 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. Soil samples were taken using a 120 centimetre (cm) long soil auger to characterize community substrates. Representative photos of each ELC unit on the Site were taken and are included with the community descriptions in this report.

4.2.4 2023 Field Surveys

In order to finalize this EIS, five additional field surveys are required and are to take place during the 2023 field season.

4.2.4.1 Breeding Bird Surveys

Breeding bird surveys must be performed to address uncertainties around the potential presence of various SAR birds discussed in Table 1 (Section 5.4).

Morning breeding bird surveys are performed using point counts following the Ontario Breeding Bird Atlas Guide for Participants (Birds Canada et al., 2001; Birds Canada et al., 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 the Ontario Breeding Bird Atlas, two rounds of surveys are to take place between sunrise and five hours after sunrise between May 24 and July 10, with a minimum of 15 days between survey dates.

[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.

4.2.4.2 Acoustic Bat Monitoring

Bat monitoring must be completed following acoustic surveys under the MNRF's *Survey Protocol for Species at Risk Bats within Treed Habitats* (2017). This is currently the recommended protocol for confirming the presence/absence of Little Brown Myotis, Northern Myotis, and Tri-coloured Bat, where it is determined that potentially suitable habitat for the establishment of maternity roosts is present. Acoustic surveys are to take place between June 1st and June 30th, commencing after dusk and continuing for five hours. Survey conditions include ambient temperature >10°C, light wind, and no precipitation.

The Site contains mature forests and a woodland, with treed swamps directly north of the Site. Many trees are potentially suitable for bat roosting, having diameters at breast height (DBH) >10 cm, crevices, and loose bark, and being in the early stages of decay (MNRF, 2015b; MNRF, 2017). Snags on-site will be captured though a combination of ELC and the Tree Conservation Report (TCR).

4.2.4.3 Tree Studies (TCR and BHA)

A tree survey will be performed for the Site following TCR guidelines set forth by the City of Ottawa Forestry Staff. As part of the survey process, Butternut (*Juglans cinerea*) and Black Ask (*Fraxinus nigra*) trees (Endangered under the ESA) will be reviewed and assessed as required. To-date, KAL is aware of one Butternut and one Black Ash on the Site. While general tree surveys can be completed at any time of year, Butternut health assessments (BHAs) following the MECP's Butternut assessment guidelines (MECP, 2021a) must be completed between May 15 and August 31. The assessment evaluates Butternut health for the purpose of compliance with the ESA.

During the tree survey to be complete in 2023, aggregate plantings comprising numerous individual trees will be more coarsely characterized, with data obtained on species, general size distributions, and approximate number of individuals. Significant trees within aggregate units will be identified, enumerated, mapped, and their DBH and general health/condition will be documented. "Wildlife" trees with DBH >25 cm will be 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, 2015a; MNRF, 2017). Finally, during the tree surveys stick nests used by birds of prey will be documented if observed.

4.2.4.4 Invasive Species Survey

Species will be identified as exotic, invasive, or noxious under the Ontario *Invasive Species Act* (2015) and as listed on the Ontario Ministry of Agriculture, Food, and Rural Affairs' Noxious Weed List (MAFRA, 2015) and the Ontario Invasive Plant Council's Invasive Plant List (Ontario Invasive Plant Council, 2021). Species considered exotic, invasive, or noxious as described above and observed on-site will be identified and photographed. Approximate distributions will be mapped; localized concentrations and widespread infestations will be documented. Where relevant, estimates of the number of individuals in an infestation will also be made.

4.2.4.5 Headwater Drainage Feature Assessment (HDFA)

A headwater drainage feature assessment (HDFA; per TRCA and CVC, 2014) will be completed to evaluate and classify headwater drainage features on the Site and to determine the appropriate management and mitigation actions. To support such an assessment, surveys should be conducted to classify the hydrological,

aquatic, and terrestrial functions of headwater drainage features. HDFA typically incorporates three site visits based on site conditions: one during the spring freshet (late March to mid-April), one in the spring (late April to May), and one in the summer (July to August).

5.0 RESULTS

5.1 Water Features

5.1.1 Headwater Drainage Features

A headwater drainage feature originates at a small culvert within a low-lying area at the northern tip of the site and is oriented westward down the slope of the sandy ridge and eventually to the Rideau River (Figure 2; Figure 3). The feature receives surface water run-off from the Riverside-Uplands Park (northeast of the Site), which is collected via a system of swales, catch basins, and storm sewers and is deposited at the head of the drainage feature at the north corner of the Site. Given its source, the steepness of the slope, and its apparent condition in the late summer, this feature is likely to have ephemeral hydrology, and is highly unlikely to be capable of supporting fish or amphibians. Regardless, as the feature is located within a forest, an HDFA (per TRCA and CVC, 2014) will likely generate management recommendations of either Mitigation or Conservation. In either case, the feature could still be relocated as required with appropriate mitigation measures in place. No other headwater drainage features were observed on-site.

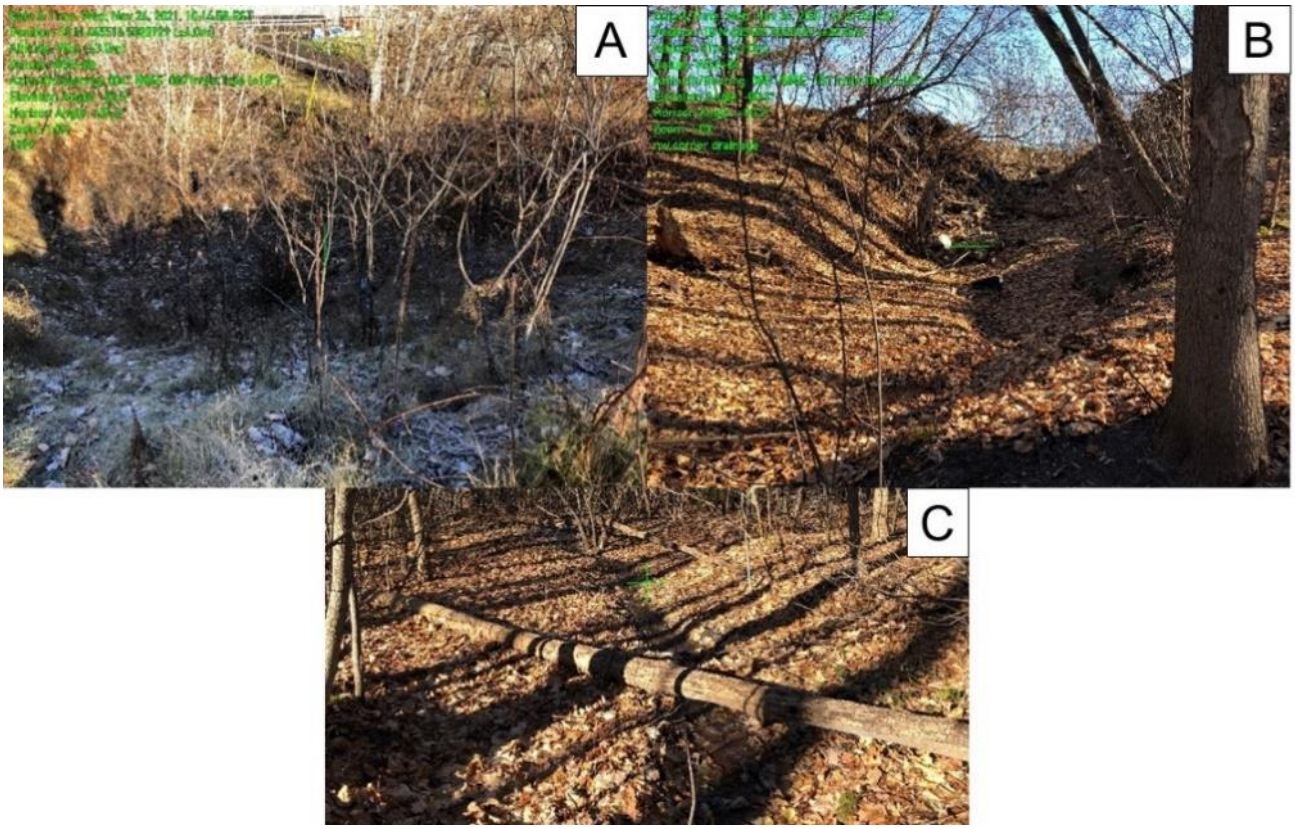

Figure 3 Photos showing the drainage channel near the northern tip of the site (A: upstream extent at culvert, B: channel along the slope, C: channel downstream of the slope) (Photo taken November 24, 2021)

5.1.2 Rideau River

The City of Ottawa typically requires alterations adjacent to watercourses to be setback 30 m from the normal high-water mark or 15 m from the top of bank, whichever is the greater. The potential area of impact is estimated to be more than 18 m from the bank of the Rideau River, and therefore the works would respect the typical watercourse setback.

5.1.3 Floodplain

The proposed development is located within the vicinity of the floodplain of the Rideau River (Figure 2). It is likely that this area of floodplain is also associated with wetland cover. Alterations adjacent to floodplains and wetlands would require formal approval from RVCA.

5.1.4 Groundwater

Evidence of a groundwater seep was observed along the slope of the sandy ridge towards the edge of the Site, but outside of the potential area of impact (Figure 4). However, a geotechnical expert should be

consulted to determine if there are any other potential sources of groundwater that may interact with the slope modifications.

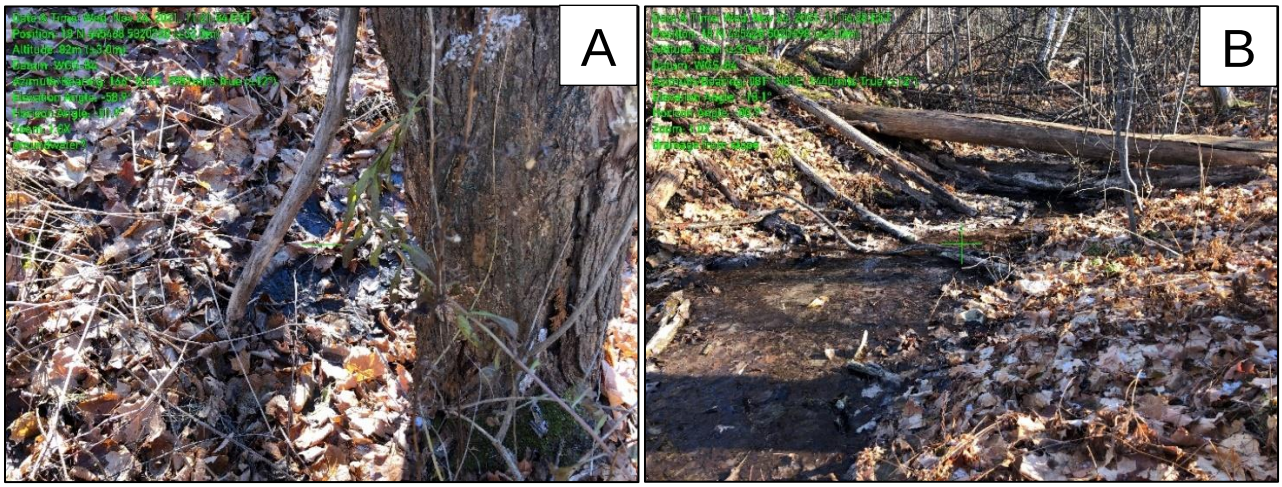

Figure 4 Photos showing (A) the estimated location of the top of the groundwater seep, and (B) flowing water downstream of the top of the seep (Photo taken November 24, 2021)

5.2 Landforms and Soils

The eastern half of the Site has a gradual slope west. A steep slope bisects the northern end of the Site from north to south, dropping abruptly to the west towards the Rideau River. Soils in the vicinity of the Site are typically characterized as clay and sandy silt overlaying fine to coarse-grained sand and gravel (MNRF, 2022d). During the ELC site visit, soil samples were taken using a 120 cm hand-held soil auger. The soil in the woodland (WODM5) was sand to depths of 25 cm, overlaying rock. The mixed meadow (MEMM3) had mineral organic soil to depths of 30 cm, overlaying rock. The soil in the mature Sugar Maple forest (FODM5-1) was composed of 5 cm of organic with a transition to dry, loose sand, silt, clay to a depth of 120 cm. A 120 cm soil core was taken in the White Cedar swamp (SWMM1-1) and indicated mineral sand and organic to 25 cm, transitioning to saturated sand, silt, clay with gleys to 70 cm, and transitioning to silt, clay with gleys.

5.3 Ecological Land Classification

Six distinct landcovers or ELC units were delineated on the Site (Figure 2). The portion of the Site east of the steep slope is dominated by regenerating woodland and meadow. The western portion is dominated by a mature White Pine (*Pinus strobus*) forest to the west and a mature Sugar Maple (*Acer saccharum*) forest to the east. Located north of the Site is a White Cedar (*Thuja occidentalis*) swamp and Speckled Alder (*Alnus incana*) thicket swamp.

5.3.1 Fresh – Moist Deciduous Woodland Ecosite (WODM5)

A Fresh – Moist Deciduous Woodland Ecosite (WODM5; Figure 5) is in the centre of the northern portion of the Site and runs along the southwestern edge along the Rideau River and extends east along Hunt Club Road and Riverside Drive. The woodland canopy is dominated by White Willow (*Salix alba*), with Trembling Aspen (*Populus tremuloides*) and Manitoba Maple (*Acer negundo*). The mid-layer comprised Staghorn Sumac (*Rhus*

typhina) and Glossy Buckthorn (*Rhamnus frangula*; invasive species). Canada Goldenrod (*Solidago canadensis*) was the dominant groundcover species, with Common Burdock (*Arctium minus*), Canada Bluejoint (*Calamagrostis canadensis*), Creeping Jenny (*Lysimachia nummularia*), Red Raspberry (*Rubus idaeus*), and Coltsfoot (*Tussilago farfara*). The northern and western edges of this ecosite abuts a steep slope.

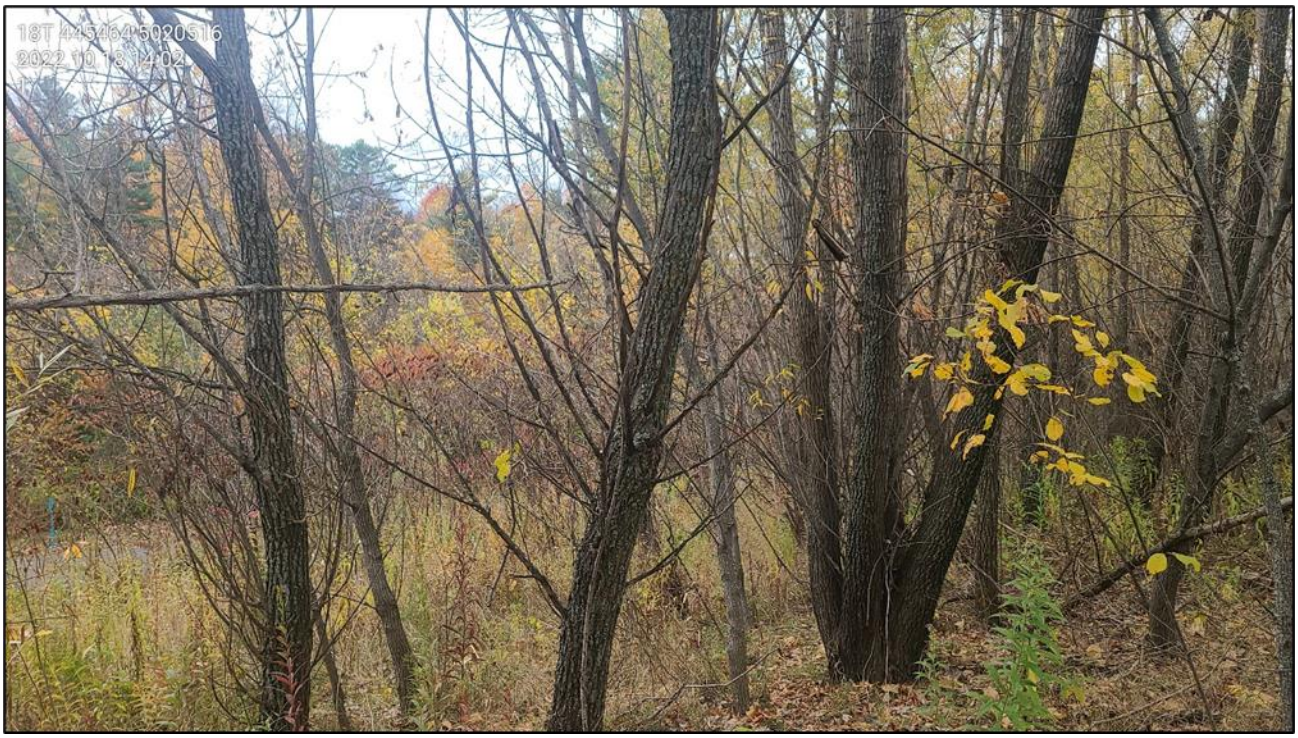

Figure 5 Fresh – Moist Deciduous Woodland Ecosite (WODM5) (Photo taken October 19, 2022)

5.3.2 Dry – Fresh Mixed Meadow Ecosite (MEMM3)

The eastern half of the Site is dominated by a Dry – Fresh Mixed Meadow Ecosite (MEMM3; Figure 6). The meadow is dominated by both grasses and forbs. The grasses include Perennial Ryegrass (*Lolium perenne*), Kentucky Bluegrass (*Poa pratensis*), and Reed Canary Grass (*Phalaris arundinacea*); while the forbs include Canada Goldenrod, Queen Anne's Lace (*Daucus carota*), Cow Vetch (*Vicia cracca*), Common Milkweed (*Asclepias syriaca*), Bull Thistle (*Cirsium vulgare*; invasive species), Bird's-foot Trefoil (*Lotus corniculatus*), and species of Aster. Trees and shrubs are scattered within the mixed meadow including Trembling Aspen, Manitoba Maple, Staghorn Sumac, and species of Willow (*Salix* spp.).

Figure 6 Dry – Fresh Mixed Meadow Ecosite (SWMM1-1) (Photo taken October 19, 2022)

5.3.3 Dry – Fresh Sugar Maple Deciduous Forest Type (FODM5-1)

A Dry – Fresh Sugar Maple Deciduous Forest Type (FODM5-1; Figure 7) is situated along the northern edge of the Site, west of the steep slope. The forest is dominated by mature Sugar Maple (*Acer saccharum*) and includes American Basswood (*Tilia americana*) with White Birch (*Betula papyrifera*) along the edges. A Butternut (*Juglans cinerea*; Endangered under the ESA) is located along the eastern edge of the forest. The understory is sparse but contains Dwarf Horsetail (*Equisetum scirpoides*) and species of grasses. Within the forest were drainage features running east to west.

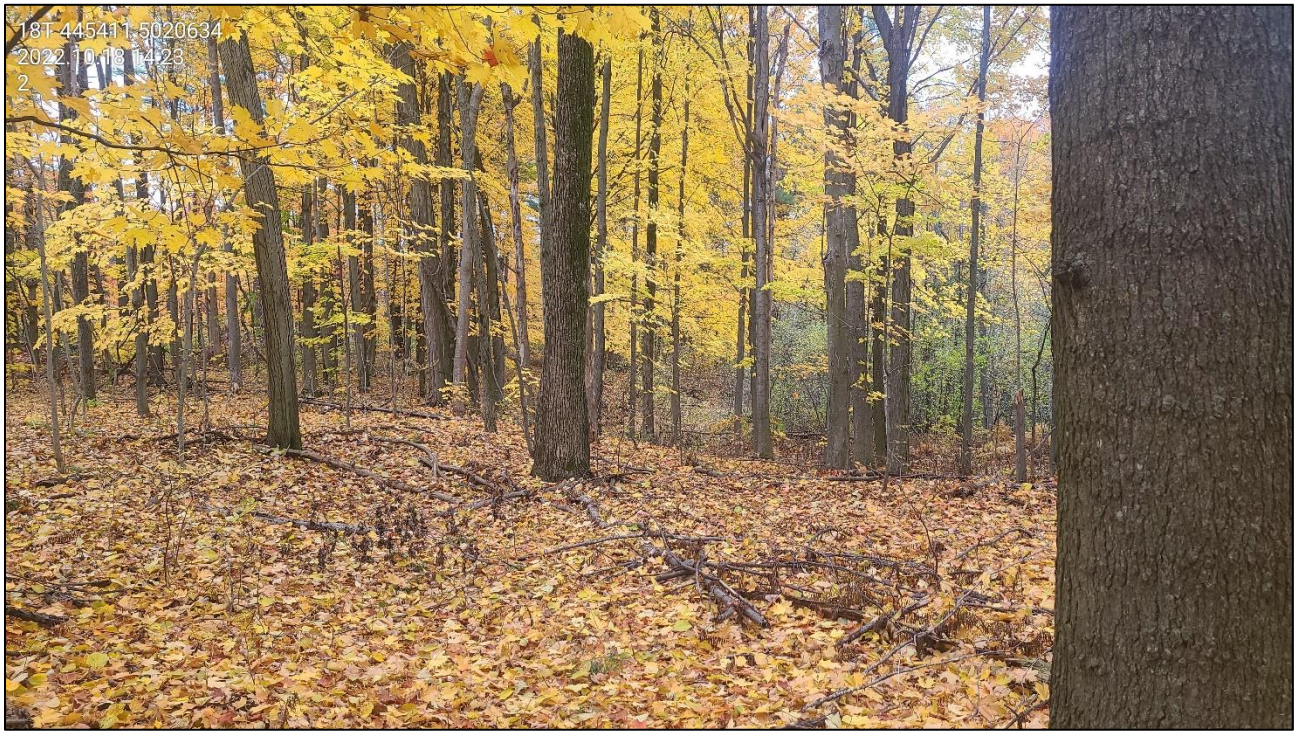

Figure 7 Dry – Fresh Sugar Maple Deciduous Forest Type (FODM5-1) (Photo taken October 19, 2022)

5.3.4 Dry – Fresh White Pine – Red Pine Coniferous Forest Type (FOCM1-2)

In the northwest corner of the Site is a Dry – Fresh White Pine – Red Pine Coniferous Forest Type (FOCM1-2; Figure 8). This ELC type is described as White Pine or Red Pine (*Pinus resinosa*) separately dominant or in variable mixtures. This forest is a mature White Pine forest. Although the canopy is dominated by White Pine the sub-canopy is made up of Sugar Maple and Green Ash (*Fraxinus pennsylvanica*). A Black Ash (*Fraxinus nigra*; Endangered under the ESA) is located at the edge of the forest near the Rideau River. The forest understory is relatively open with debris of fallen branches and contains Glossy Buckthorn and Sugar Maple saplings.

Figure 8 Dry – Fresh White Pine – Red Pine Coniferous Forest Type (FOCM1-2) (Photo taken October 19, 2022)

5.3.5 Speckled Alder Mineral Deciduous Thicket Swamp Type (SWTM1-1)

A small portion of a Speckled Alder Mineral Deciduous Thicket Swamp (SWTM1-1; Figure 9) is in the north end of the Site and extends north of the Site. The swamp is dominated by Speckled Alder and contains scattered trees including White Birch, Eastern White Cedar (*Thuja occidentalis*), and a species of dead Ash (*Fraxinus spp.*). The groundcover is limited but contains Creeping Jenny, Sensitive Fern (*Onoclea sensibilis*), and species of horsetail (*Equisetum* spp.). There are also patches of Common Reed (*Phragmites australis*; invasive species) within the thicket swamp.

Figure 9 Speckled Alder Mineral Deciduous Thick Swamp Type (SWTM1-1) (Photo taken November 24, 2021)

5.3.6 White Cedar – Hardwood Mineral Mixed Swamp Type (SWMM1-1)

North of the Site, within the SWTM1-1 community is a White Cedar – Hardwood Mineral Mixed Swamp Type (SWMM1-1; Figure 10). The south side of the swamp boarders the mature Sugar Maple forest (FODM5-1). Dominant species include Eastern White Cedar, closely followed by Eastern Hemlock (*Tsuga canadensis*), White Birch, Red Maple (*Acer rubrum*), and American Beech (*Fagus grandifolia*). Speckled Alder dominates canopy openings, with groundcover of Bracken Fern (*Pteridium aquilinum*) and species of horsetail (*Equisetum* spp.).

Figure 10 White Cedar – Hardwood Mineral Mixed Swamp Type (SWMM1-1) (Photo taken October 19, 2022)

5.4 Species at Risk

An assessment of species listed under SARA and ESA was completed to identify species having some potential to occur on or near the Site, including Extirpated, Endangered, Threatened, and Special Concern species. Species listed as Extirpated, Endangered, and 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 SAR assessment evaluated whether the Site would or could provide suitable habitat for SAR and whether they have potential to interact with future development of the Site. An assessment of the potential for SAR and their potential habitat was completed based on the results of the field surveys, ELC (i.e., habitat availability), and a desktop review that considered known species ranges, historic observation records, and preferred habitat requirements of these species (Appendix D). A total of 38 SAR were identified with some potential (low/moderate/high) to occur on or within 120 metres (m) of the Site and/or interact with the project. Of those, 25 SAR had a moderate to high potential to occur on the Site and/or interact with the project (Table 1). Those with a moderate potential are known to occur within the region and suitable habitat for the species occurs on the Site. SAR with a high potential are those that are known to occur on or adjacent to the Site (i.e., were observed by KAL during field surveys), with suitable habitat for the species on the Site.

All other SAR with potential to occur in the region based on their documented ranges, occurrence records, and/or suitable habitat availability were assessed as having a low, negligible, or no potential to occur on the Site due to lack of occurrence records and/or suitable habitat (Appendix D).

Table 1 Species at risk with moderate or high potential to interact with the project

Common Name	Taxonomic Name	Status under Endangered Species Act	Status under Species at Risk Act (Schedule 1)	Potential to Interact with Development of the Site
Birds				
Bald Eagle	*Haliaeetus leucocephalus*	Special Concern	Not at Risk	Moderate
Barn Swallow	*Hirano rustica*	Threatened (Special Concern as of Jan 25, 2023)	Threatened	Moderate
Chimney Swift	*Chaetura pelagica*	Threatened	Threatened	Moderate
Common Nighthawk	*Chordeiles minor*	Special Concern	Threatened	Moderate
Eastern Wood-Pewee	*Contopus virens*	Special Concern	Special Concern	Moderate
Evening Grosbeak	*Coccothraustes vespertinus*	Special Concern	Special Concern	Moderate
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Endangered	Endangered	Moderate
Rusty Blackbird	*Euphagus carolinus*	Special Concern	Special Concern	Moderate
Wood Thrush	*Hylocichla mustelina*	Special Concern	Threatened	Moderate
Mammals				
Eastern Small-footed Myotis	*Myotis leibii*	Endangered	Not Listed	Moderate
Little Brown Myotis	*Myotis lucifugus*	Endangered	Endangered	Moderate
Northern Myotis	*Myotis septentrionalis*	Endangered	Endangered	Moderate
Tri-colored Bat	*Perimyotis subflavus*	Endangered	Endangered	Moderate
Amphibians				
Western Chorus Frog	*Pseudacris triseriata*	Not Listed	Threatened (Great Lakes-St. Lawrence population)	Moderate
Reptiles				
Blanding's Turtle	*Emydoidea blandingii*	Threatened	Endangered	Moderate
Eastern Milksnake	*Lampropeltis triangulum*	Not Listed	Special Concern	Moderate
Midland Painted Turtle	*Chrysemys picta marginata*	Not Listed	Special Concern	Moderate
Northern Map Turtle	*Graptemys geographica*	Special Concern	Special Concern	Moderate
Snapping Turtle	*Chelydra serpentina*	Special Concern	Special Concern	Moderate
Arthropods				

Common Name	Taxonomic Name	Status under Endangered Species Act	Status under Species at Risk Act (Schedule 1)	Potential to Interact with Development of the Site
American Bumble Bee	*Bombus pensylvanicus*	No Status (Special Concern as of Jan 25, 2023)	No Status	Moderate
Monarch	*Danaus plexippus*	Special Concern	Special Concern	Moderate
Suckley's Cuckoo Bumble Bee	*Bombus suckleyi*	No Status (Endangered as of Jan 25, 2023)	No Status	Moderate
Yellow-banded Bumble Bee	*Bombus terricola*	Special Concern	Special Concern	Moderate
Vascular Plants				
Black Ash	*Fraxinus nigra*	Endangered	No Status	High
Butternut	*Juglans cinerea*	Endangered	Endangered	High

[1] Rows highlighted in yellow indicate species ranked as Threatened or Endangered under the ESA that have a moderate to high likelihood of occurring on the Site.

SAR presented in Table 1 that are not listed or are listed as Special Concern under the ESA are not considered further as SAR in this report because they do not receive individual or habitat protection under the ESA (whereas Threatened and Endangered species do). However, individuals of these species are protected under other regulations addressing wildlife conservation generally, such as the FWCA, MBCA, and the PPS. In addition, species listed as Special Concern under the ESA may receive habitat protection if they are observed in habitats that meet the criteria for designation as SWH for Special Concern Species (MNRF, 2015a). Species of Special Concern will be discussed with SWH in Section 5.7. The remainder of this initial EIS focuses on species ranked as Threatened or Endangered under the ESA with a moderate to high likelihood of occurring on the Site (i.e., species highlighted in yellow in Table 1 above).

5.5 Urban Natural Area: Riverwood Park Woods

UNA #147, Riverwood Park Woods, is located in the northwestern portion of the Site and extends north of the Site within the Environmental Protection zone. UNA #147 is 10.4 ha and is owned by the City of Ottawa. It is characterized by extensive woodland along sloping riverbank by Rideau River, Hunt Club Woods (Appendix E). UNA #147 is rated overall as moderate. It scored above average for connectivity, size and shape, and representative flora criteria, while habitat maturity and wildlife habitat were rated as average. Regeneration, natural communities, disturbance, and significant flora and fauna were scored below average.

UNA #147 was originally approximated with rough polygon boundaries on aerial photographs (Muncaster Environmental Planning Inc. and Brunton Consulting Services, 2005). UNA #147 is described as a young upland mixed forest in moist, sandy substrate of upper slopes with sub-mature mixed swamp forest over dense buckthorn infestation in thin organic substrate (Appendix E). Based on this description, UNA #147 boundary is recognized to correspond with the edge of the Sugar Maple forest at the Site. Figure 2 displays the boundary as such.

Below are ecological comments from UNA #147 (Appendix E):

- Management: Maintenance of natural forest canopy required to suppress invasive plant development and maintain surface water quality contribution; and vegetated buffer between adjacent development and woodland areas required to minimize edge effect.

- Recommendations – Passive recreation opportunities: Potential for gravel footpath along rivershore from public access off Kimberwick Street with development of interpretation themes, including wildlife corridor functions, woodland contribution to river water quality.

5.6 Significant Natural Heritage Features

The Site contains significant woodlands and significant habitat of endangered and threatened species, and may contain SWH and significant wildlife corridors. Further, the Site contains areas that meet the definition of significant valleylands. The Site does not contain significant wetlands, significant coastal wetlands, ANSIs (life/earth science), or fish habitat.

Forested areas within UNA #147 that were 0.8 hectares or larger 60 years ago (based on aerial imagery) constitute Significant Woodland (City of Ottawa, 2015b; updated in 2019 but not yet publicly available). The City of Ottawa does not permit alteration in or adjacent to (i.e., within 120 m) Significant Woodlands unless it has been demonstrated through an EIS that there will be no negative impacts on the woodland or its ecological functions.

Confirmed and potential significant habitat of endangered and threatened species is discussed in detail in Section 5.3. Two endangered species were confirmed on-site while the Site provides suitable habitats for an additional seven endangered and threatened species.

The Site has the potential to contain the following four SWH: bat maternity colonies; bald eagle and osprey nesting, foraging, and perching habitat; turtle nesting areas; and special concern and rare wildlife species (MNRF, 2015a). They are discussed in detail in Section 5.7 (Table 2).

The Site may provide significant wildlife corridor habitat as it is situated directly north of the Greenbelt. The Site also connects other green spaces along the Rideau River. For example, open, lowland habitats (within the Sugar Maple forest), forest openings with vernal pools, and swamps on-site could provide suitable staging habitat and/or act as a corridor during seasonal movements for Blanding's Turtles.

Significant valleylands are natural areas that occur in a valley or other landform depressions that have water flowing through or standing for some period of the year. Based on the steep slope and areas of groundwater seepage the feature meets the criteria for significant valleylands (MNR, 2010).

5.7 Significant Wildlife Habitat

SWH was assessed based on the MNRF's guidelines and criteria for the identification of SWH in ecoregion 6E (MNRF, 2015a). SWH are identified based on the presence of certain habitat types (identified through ELC codes) and the presence and/or groupings of certain species (Appendix F).

Table 2 Summary of the types of Significant Wildlife Habitat associated with the Site

Type of Significant Wildlife Habitat (candidate/confirmed[1])	Rationale
Bat Maternity Colonies (candidate)	The habitat on the Site meets the SWH criteria for ecoregion 6E. Forest cover associated with UNA #147 contains mature (>60 years old) trees and there >10 large "wildlife" trees per ha that would provide suitable roosting habitat for bats. Wildlife trees are those with DBH >25 cm that are standing live or dead and have cracks, crevices, hollows, cavities, and/or loose or naturally exfoliating bark in early stages of decay (decay class 1-3; MNRF, 2015a; MNRF, 2017). Confirmed SWH for bat maternity colonies are treed communities with more than 10 Big Brown Bats (*Eptesicus fuscus*) and five adult female Silver-Haired Bats (*Lasionycteris noctivagans*; MNRF, 2015a). Both bat species have the potential to occur in UNA #147, and therefore this area has potential SWH for bat maternity colonies.
Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat (candidate)	The habitat on the Site meets the SWH criteria for ecoregion 6E. The Site contains ELC forest community series directly adjacent to a river. Nests are associated with rivers along forested shorelines. FODM5-1 and FOCM1-2 along the Rideau River may qualify as SWH. Note that during 2023 field surveys Bald Eagle and Osprey and their nests will be searched for.
Turtle Nesting Areas (candidate)	The sandy shoreline of the Rideau River may provide nesting habitat for four species of turtles (Blanding's, Midland Painted, Northern Map, and Snapping). The meadow (MEMM3) may also provide suitable nesting habitat.
Special Concern and Rare Wildlife Species (candidate)	The Site contains suitable habitat for ten species listed as Special Concern under the ESA (Table 1). The presence of any of these species in suitable habitat would indicate SWH for Special Concern and Rare Wildlife Species. The species include: Bald Eagle, Common Nighthawk, Eastern Wood-Pewee, Evening Grosbeak, Rusty Blackbird, Wood Thrush, Northern Map Turtle, Snapping Turtle, Monarch, and Yellow-banded Bumble Bee. Both mature forests (FODM5-1, FOCM1-2) have potential to provide habitat for Bald Eagle, Common Nighthawk, Evening Grosbeak, and Yellow-banded Bumble Bee. Additionally, the Sugar Maple forest (FODM5-1) has potential to provide habitat for Eastern Wood-Pewee and Wood Thrush. The open habitats (WODM5, MEMM3) have potential to provide habitat for Common Nighthawk, Monarch, and Yellow-banded Bumble Bee. The swamps (SWTM1-1, SWMM1-1) have potential to provide habitat for Rusty Blackbird and Snapping Turtle. While the sandy shoreline along the Rideau River has potential to provide habitat for Northern Map Turtle and Snapping Turtle. Further, the Site also contains suitable habitat for species listed under SARA, but not under the ESA. Western Chorus Frog, Eastern Milksnake, and Midland Painted Turtle may occur on the Site.

Type of Significant Wildlife Habitat (candidate/confirmed[1])	Rationale
	It is important to note that the Site contains suitable habitat for American Bumble Bee and Suckley's Cuckoo Bumble Bee. As of late January 2023, they will be uplisted as Special Concern and Endangered respectability under the ESA.

[1] MNRF identifies candidate SWH based on ELC ecosite codes and habitat criteria (MNRF, 2015a). Confirmed SWH is identified by MNRF as meeting defining criteria (e.g., obtained through specific studies). Note that protection of either candidate or confirmed SWH is the decision of the municipality.

5.8 Incidental Wildlife Observations

Incidental wildlife observations made during field surveys are summarized in Table 3.

Table 3 Summary of incidental wildlife observations

Species Name	Scientific Name	Year Detected
Birds		
American Crow	*Corvus brachyrhynchos*	2021-11-24, 2022-10-19
American Goldfinch	*Spinus tristis*	2021-11-24
Barred Owl	*Strix varia*	2022-10-19
Black-capped Chickadee	*Poecile atricapillus*	2021-11-24
Blue Jay	*Cyanocitta cristata*	2021-11-24
Canada Goose	*Branta canadensis*	2021-11-24
Common Merganser	*Mergus merganser*	2021-11-24
Mallard	*Anas platyrhynchos*	2021-11-24
Pileated Woodpecker	*Dryocopus pileatus*	2021-11-24
White-breasted Nuthatch	*Sitta carolinensis*	2021-11-24
Mammals		
Coyote	*Canus latrans*	2021-11-24
Eastern Gray Squirrel	*Sciurus carolinensis*	2021-11-24
White-tailed Deer	*Odocoileus virginianus*	2021-11-24

6.0 DESCRIPTION OF THE PROPOSED PROJECT

The proposed project (Figure 11) is a residential subdivision that would comprise a mix of housing including four apartment buildings, 52 townhouses, and 24 single detached homes that will be primarily located within the mixed meadow (MEMM3) and deciduous woodland (WODM5). The tallest residences (9 to 17-storeys) are to be located at the southern end of the Site with building heights reducing further north. A 3 m wide stonedust path is proposed for future development. It would run along the northwest side of the Site and extend north off-site, linking the new subdivision to an existing one. The pathway would edge into the mature Sugar Maple forest (FODM5-1) that constitutes the southeastern edge of UNA #147. It would continue off-site thought the thicket swamp (SWTM1-1) and White Cedar swamp (SWMM1-1). This path is to be laid on top of the underground stormwater pipe planned to connect the Site to the existing SWM pond at the north

end of UNA #147. All existing vegetation within the Site and directly under the pathway will be removed to accommodate site regrading, construction, and the installation of the SWM pipe.

The proposed pathway is situated at the top of the steep slope intersecting the Site (Figure 11). A 13 m wide strip along the west side of the proposed pathway (i.e., down the slope) will be stripped of vegetation during construction. This will coincide with the western edge of the deciduous woodland (WODM5) and the eastern edge of UNA #147 at the north edge of the Site. All vegetation will be removed from this strip to allow for slope stabilization works therein. Upon completion of the slope stabilization work, the strip will be re-naturalized with vegetation consistent with the Sugar Maple forest (FODM5-1).

The development will be approximately 47 m east of the Rideau River, while the multi-use pathway will be situated approximately 20 m from the river. The nearest point of disturbance from the proposed development will be approximately 18 m from the Rideau River. All portions of the proposed development are situated outside floodplain.

Figure 11 Proposed development plan

Legend

- Site Boundary
- Floodplain
- UNA 147
- Drainage Channel
- Groundwater Seep
- Butternut

ELC Code

- FOCM1-2
- FODM5-1
- MEMM3
- SWMM1-1
- SWTM1-1
- WODM5

- Site Plan
- Edge of Disturbance

N

0 150 m

Project: TAGG 1299
Map File: TAGG 1299-2212b.map
MTM Zone 9
(NAD 83)
Printed on: 2022-12-23

KILGOUR & Associates

7.0 IMPACT ASSESSMENT AND MITIGATION

The potential area of impact associated with the proposed development includes the edge of UNA #147 and Environmental Protection zone (Figure 11). This encroachment should not have significant ecological impacts to the function of UNA #147.

7.1 Surface Water

The proposed development of the Site is expected to have minimal impacts on surface water, groundwater, and fish habitat. The northwest Site boundary includes a portion of coniferous swamp which extends onto adjacent lands to the northwest. A setback of 30 m is proposed from the top-of-bank of the wetland and the Rideau River for the residential community; the proposed development envelope will encompass areas outside that setback. The community will also be fully constructed outside of the regulatory floodplain.

Work completed along the top of the valley slope will be accompanied by a slope stabilization project allowing the residential community to sit closer than 15 m from the top of the adjacent valley slope (See Section 7.4). The construction of a proposed storm sewer will collect the Riverside-Upland Park stormwater and drain it to the Quinterra SWM pond as part of the site servicing study. The installation of this storm sewer and a new pathway will require the removal of the ephemeral headwater drainage feature, but the associated area will be fully revegetated.

To protect the coniferous swamp and drainage features on-site, its associated habitats, and the broader catchment during future development of the severed parcel, an erosion and sediment control (ESC) plan will be required and must be developed to the satisfaction of RVCA. The ESC plan should 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 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 millimetre 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.

7.2 Vegetation

Two regionally uncommon plant species were identified in woodland habitat within UNA #147. However, only one of the species, *Carex utriculata*, was listed (Appendix E). *Carex utriculata* inhabits open, wet areas. As approximately only one eighth of UNA #147 is on the Site, the regionally uncommon plant species may occur off-site. One Butternut and one Black Ash was observed on the Site. Extensive vegetation clearing within the deciduous woodland and mixed meadow, including trees, will be required to accommodate development. The following general protection measures are recommended during site preparation and construction to limit impacts to trees:

- Tree removal on the Site should be limited to that which is necessary to accommodate construction.

- Areas on-site including Common Reed are to be excavated to a depth of at least 1 m, and out at least 3 m from the Common Reed patch(es). Excavated soils are to be stockpiled on-site more than 30 m from UNA #147, and tarped with black geotextile fabric. The piles must remain covered for a period of one year, at which point the soil can be reused or remove. If this process is not feasible, soils containing Common Reed must be transported in enclosed containers to a disposal site certified to manage invasive species.

- To minimize impacts to retained trees during development:

  - Erect a fence beyond the critical root zone (CRZ; i.e., 10x the diameter at breast height) of trees. The fence should be highly visible (orange construction fence) and paired with erosion control fencing. Pruning of branches is recommended in areas of potential conflict with construction equipment;
  - Do not place any material or equipment within the CRZ of trees;
  - Do not attach any signs, notices, or posters to any trees;
  - Do not raise or lower the existing grade within the CRZ of trees without approval;
  - Tunnel or bore when digging within the CRZ of a tree;
  - Do not damage the root system, trunk, or branches of any remaining trees; and
  - Ensure that exhaust fumes from all equipment are not directed toward any tree's canopy.

- Ensure equipment is clean prior to vegetation removal to avoid introducing invasive species to the Site, and clean equipment prior to leaving Site to avoid spreading invasives (e.g., Common Reed) elsewhere.

- Incorporate native plants into Site landscaping to the extent possible for the benefit of local wildlife and pollinators (e.g., milkweed for Monarch). It is recommended that plantings encompass a variety of native flowering species with different blooming periods to provide varied food sources for native pollinators. Further, the use of herbicides should be limited within and surrounding the planted habitat.

To help offset vegetation loss, native vegetation should be planted as part of the landscape plan for the Site. The following tree and shrub species are recommended for planting and should be used to direct the development of the landscape plan for the Site. The following species are appropriate given Site conditions and are native and non-invasive: Alternate-leaf Dogwood (*Cornus alternifolia*), American Beech (*Fagus grandifolia*), Balsam Fir (*Abies balsamea*), Balsam Poplar (*Populus balsamifera*), Basswood (*Tilia americana*), Bitternut Hickory (*Carya cordiformis*), Black Cherry (*Prunus serotina*), Black Walnut (*Juglans nigra*), Bur Oak (*Quercus macrocarpa*), Chokecherry (*Prunus virginiana*), Eastern Cottonwood (*Populus deltoides*), Eastern Hemlock (*Tsuga canadensis*), Hawthorns (*Crataegus* spp.), Honey Locust (*Gleditsia triacanthos*), Horse-chestnut (*Aesculus hippocastanum*), Ironwood (*Ostrya virginiana*), Largetooth Aspen (*Populus grandidentata*), Maple-leaf Viburnum (*Viburnum acerifolium*), Nannyberry (*Viburnum lentago*), Northern Bush-honeysuckle (*Diervilla lonicera*), Peachleaf Willow (*Salix amygdaloides*), Pin Cherry (*Prunus pensylvanica*), Red Maple (*Acer rubrum*), Red Oak (*Quercus rubra*), Red Pine (*Pinus resinosa*), Serviceberries (*Amelanchier* spp.), Silver Maple (*Acer saccharinum*), Sugar Maple (*Acer saccharum*), Tamarack (*Larix laricina*), Trembling Aspen (*Populus tremuloides*), White Birch (*Betula papyrifera*), White Cedar (*Thuja occidentalis*), Yellow Birch (*Betula alleghaniensis*), White Oak (*Quercus alba*), White Pine (*Pinus strobus*), and White Spruce (*Picea glauca*).

7.3 Species at Risk

Ten SAR ranked as Threatened or Endangered under the ESA have a moderate to high potential to interact with future development on the Site (i.e., may be present during development), based on previous observation records and the presence of potentially suitable habitat. The purpose of the site visits was to confirm the presence of potential habitat for SAR.

The general wildlife mitigation measures provided in Section 7.5, while not species-specific, are anticipated to protect the SAR that may potentially occur on the Site. Additional species-specific mitigation measures, however, are provided below.

7.3.1 Butternut

Butternut 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 and Ursic, 2013).

On November 24, 2021, a large and relatively healthy Butternut (approximately 45-55 cm DBH) was observed near the northern tip of the Site, west of the pathway (UTM coordinates: 18T 445487 5020716; Figure 11). This tree was marked with white flagging tape around the trunk (KAL, 2021). Butternut and their associated root harm prevent zone are regulated under the ESA (Government of Ontario, 2022b). Currently, the proposed development requires the removal of the Butternut identified on-site. As previously mentioned, a BHA has not been completed to date. Upon completion, appropriate permits and/or exemptions will be determined and sought.

7.3.2 Black Ash

Black Ash is a predominantly wetland species that occurs in swamps, floodplains, fens (COSEWIC, 2018b). On November 24, 2021, a Black Ash was observed along the Rideau River within the floodplain. The previous EIS for the project also noted the presence of Black Ash on the Site (Muncaster Environmental Planning Inc., 2018). Black Ash was listed as Endangered under the ESA on January 26, 2022; subsequently, however, the Minister of MECP ordered by regulation O.Reg. 23/22 that ESA protections for Black Ash be temporarily suspended for a two-year period following its listing (Government of Ontario, 2022a). The regulation allows activities that impact Black Ash and its habitat to proceed without the requirement for an ESA authorization or exemption during the two-year period (until January 26, 2024). A recovery strategy and associated policy will be developed during this time by the province. The project should not interact with the observed Black Ash given that this tree falls outside the development footprint and within the floodplain.

7.3.3 Barn Swallow

Barn Swallows nest in buildings (e.g., barns), bridges, and culverts near open areas that are used for foraging. Nests are typically constructed on a horizontal ledge or attached to a vertical wall near an overhang. Barn Swallows forage over open and semi-open areas that provide good sources of flying insects, such as wetlands, water bodies, riparian habitats, agricultural fields, grasslands, woodland edges, and residential areas (Heagy et al., 2014).

Barn Swallows are known to occur in the general area (e.g., Birds Canada et al., 2009; MNRF, 2022a; Cornell Lab of Ornithology, 2022). The overhanging roof of the pumphouse station on-site could provide nesting habitat for Barn Swallow, while the meadow, deciduous woodland, and Rideau River could provide foraging habitat. Additionally, buildings adjacent to the Site could provide nesting habitat. Barn Swallow nests and the surrounding 200 m are protected under the ESA (MECP, 2021b). The area between 5 m and 200 m of a Barn Swallow nest is protected as foraging habitat. As development is proposed to occur within 200 m of potential nesting habitat (i.e., the pumphouse on-site and adjacent buildings off-site) within suitable foraging habitat, the proponent should seek a Letter of Advice from the MECP to ensure that no mitigation or compensation measures are necessary. To reduce potential impacts to Barn Swallow, no clearing of vegetation (foraging habitat) should occur on-site between April 1 and August 31 (inclusive).

Barn Swallow is listed as Threatened under the ESA; however, it is anticipated to be down-listed to Special Concern in late January 2023. If this occurs, it would no longer be subject to protections under the ESA, but its habitat may receive protection as SWH for Special Concern Species. Individuals, eggs, and nests will still be protected under the MBCA.

7.3.4 Chimney Swift

Chimney Swifts are typically found in urban areas where there is a high concentration of traditional-style, uncapped chimneys. They primarily nest and roost in chimneys that have an opening > 28.5 cm in diameter, a rough interior surface, and are not capped or screened (COSEWIC, 2018a). Chimney Swifts can also nest and roost in hollow trees and tree cavities (COSEWIC, 2018a). The most common tree species in Ontario to host a Chimney Swift nest or roost are White Pine, Sycamore (*Platanus occidentalis*), Yellow Birch (*Betula alleghaniensis*), and Cypress (*Cupressus*) (MECP, 2021c).

Hollow trees (living or dead) within the mature forests on-site (particularly the White Pine forest) may provide nesting and/or roosting habitat. The Site also contains suitable foraging habitat. Additionally, buildings adjacent to the Site may provide suitable nesting and/or roosting habitat; however, it is unknown if they have traditional-style, uncapped chimneys. Chimney Swifts are known to occur in the general area (e.g., Birds Canada et al., 2009; MNRF, 2022a; Cornell Lab of Ornithology, 2022). Human-made nest/roost, or a natural nest/roost cavity and the area within 90 m of the natural cavity is protected under the ESA (MECP, 2021c). Nest/roost sites and the area within 90 m of a natural cavity are highly sensitive to alteration.

As there is potential for the mature forests on-site to contain Chimney Swift nests and/or roosts it is recommended that breeding bird surveys are completed prior to the removal of trees within the mature forests to remain in compliance with the ESA and MBCA.

7.3.5 Red-headed Woodpecker

Red-headed Woodpeckers nest and roost in decadent deciduous trees. They live in mature, open deciduous forests and sparsely treed habitats, with low canopy cover, open understories, and large, tall trees (particularly beech or oak). They can also be found in mixed forests, riparian woodlands, orchards, municipal parks, golf courses, river bottomlands, and agricultural landscapes (ECCC, 2019).

The deciduous woodland and mature Sugar Maple forest with snags on-site may provide suitable Red-headed Woodpecker habitat. As an Endangered species, Red-headed Woodpecker receive “general habitat

protection" under the ESA; no defined protection currently exists for the species. To reduce potential impacts and stay in compliance with the MBCA, no clearing of trees or vegetation should occur on-site between April 1 and August 31 (inclusive).

7.3.6 Species at Risk Bats

There are four at-risk bat species that occur in the region and roost in forests: Little Brown Myotis, Northern Myotis, Tri-colored Bat, and Eastern Small-footed Myotis. The Site contains suitable roosting and foraging habitat for all four bat species.

Tri-colored Bats roost in dead leaf clusters, dense clusters of live foliage, and arboreal lichens. Foraging occurs in forested riparian areas, over water, and within gaps in forest canopies (Humphrey and Fotherby, 2019). They specifically prefer to roost in oak trees with DBH ≥ 10 cm, maple trees with DBH ≥ 10 cm that have dead/dying leaf clusters, and maple trees with DBH ≥ 25 cm (MNRF, 2017). All of these tree characteristics were observed within the Sugar Maple forest on-site.

Little is known about the Eastern Small-footed Myotis' exact summer habitat use. They roost in a variety of habitats including snags, rocky habitats, buildings, and under bridges. Eastern Small-footed Myotis forage in forests, riparian forests, and over water bodies (Humphrey, 2017). The snags within the forests on-site may to provide suitable habitat.

Little Brown Myotis and Northern Myotis are more generalist with their roosting habitat and can roost in any standing live or dead tree with DBH ≥ 10 cm with cracks, crevices, hollows, cavities, and/or loose or naturally exfoliating bark (MNRF, 2017). Suitable roosting habitat for these two species was also observed within forested areas on site. The Sie also contains foraging habitat as they forage over water and riparian zones, open areas (such as meadows), open canopy forests, and forest edges (Humphrey and Fotherby, 2019).

The project is expected to interact with potential roosting habitat for these at-risk bat species. As Endangered species, Little Brown Myotis, Northern Myotis, Tri-colored Bat, and Eastern Small-footed Myotis receive "general habitat protection" under the ESA; no defined protection currently exists for these species. Generally, trees that these at-risk bats use for roosting cannot be significantly altered during the bat roosting season (April 1 through September 30 inclusive) without a qualified biologist first confirming the absence of bats (MNRF, 2015b; MECP (C. Hann) personal communication with KAL (K. Black), July 30, 2021). As such, to avoid interactions with bats tree clearing should be performed outside the bat roosting season between October 1 and March 31. Following this tree-clearing window would also avoid potential interactions with birds and bird nests protected under the MBCA.

7.3.7 Blanding's Turtle

Blanding's Turtles are semi-aquatic as they utilize both aquatic and terrestrial habitats. They breed and overwinter in wetlands (e.g., marshes, swamps, bogs, fens), slow flowing rivers, and lakes with shallow water, soft substrates, and abundant vegetation. They nest in open areas and use vernal pools as staging areas during the nesting season (ECCC, 2018).

The shoreline of the Rideau River adjacent to the Site is sandy and could provide nesting habitat for Blanding's Turtles. The Rideau River may also provide overwintering habitat for Blanding's Turtles. Blanding's Turtle

nests, overwintering sites, and the surrounding 30 m are protected as sensitive Category 1 habitat under the ESA (MECP, 2021d). Waterbodies and wetlands that extend up to 2 kilometres (km) from a Blanding's Turtle occurrence and the 30 m around those waterbodies are protected as Category 2 habitat. Category 2 habitat is important for a range of life processes including feeding, mating, thermoregulation, movement, and protection from predators (MECP, 2021d). Lastly, the area between 30 m and 250 m around Category 2 habitat is considered Category 3 habitat, which is protected for usage as a movement corridor (MECP, 2021d). Since the area expected to be impacted by the project is located more than 30 m from the Rideau River and its shoreline, the project is not expected to impact potential Category 1 or 2 habitats. However, the Site falls within 250 m of the Rideau River and therefore would interact with potential Category 3 habitat.

Further, the mixed meadow may also provide suitable nesting habitat for Blanding's Turtles, though nesting here is not currently anticipated. Turtle habitat mitigations and/or studies will be implemented per the direction of MECP.

Impacts to potential Blanding's Turtle habitat could be minimized or eliminated by implementing the following mitigation measures:

- Temporary exclusion fence should be installed prior to the turtle active season (April through October) (MNRF, 2015c) and should follow recommendations in Reptile and Amphibian Exclusion Fencing: Best Practices (MNR, 2013). Temporary exclusion fence (e.g., silt fence) may be paired with ESC measures and should be installed along the perimeter of the project area. Temporary exclusion measures should be inspected and repaired weekly by a qualified biologist during the turtle active season.

- If a turtle is encountered, the project biologist should be contacted for advice. If a turtle is in immediate harm's way, it should be safely and humanely relocated to appropriate habitat. Encounters with Threatened and Endangered species should be reported to the MECP within 24 hrs.

- Consult with the MECP to ensure their satisfaction with these proposed mitigation measures.

7.4 Significant Natural Heritage Features / Significant Wildlife Habitat

The proposed development will impact the significant valleyland; however, the steep slope will be re-naturalized post-development. Following proper ESC protocols (see Section 7.1) will be important to minimize long-term impacts to the significant valleylands. The proposed development plan includes mitigation measures that will reduce anticipated adverse impacts to the significant valleyland. The proposed planting of native grasses, shrubs, and trees will restore the slope and reduce future disturbances by stabilizing the slope. Further, the proposed stonedust path along the top of the slope is preferable to a paved path as it will allow water infiltration and reduce runoff to minimize impacts.

The edge (0.53 ha) of the signification woodland and UNA #147 (Sugar Maple forest) will be removed during construction and restored post-construction. A further 0.16 ha of deciduous woodland (WODM5) will be removed and restored as Sugar Maple forest (FODM5-1) post-construction.

The current mitigation measured for significant habitat of endangered and threatened species is to only remove trees from the mature forests once wildlife and tree surveys proposed for 2023 have been completed. Tailored mitigation measures will be provided in the final EIS.

As mentioned, there is potential for the Site to contain SWH (Table 2). Additional field surveys are required to confirm potential SWH on the Site (MNRF, 2015a). Although SWH is defined on a provincial level following provincial level (i.e., MNRF) guidelines, the protection of confirmed SWH is a municipal matter. As such, the City of Ottawa is responsible for designating an area as SWH and subsequently determining the appropriate protection, mitigation, and/or compensation.

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 (Government of Canada, 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).
- As there is potential for the mature forests on-site to contain Chimney Swift nests and/or roosts it is recommended that breeding bird surveys are completed prior to the removal of trees within the mature forests to remain in compliance with the ESA and MBCA.
- Temporary exclusion fence should be installed prior to the turtle active season (April through October) (MNRF, 2015c) and should follow recommendations in Reptile and Amphibian Exclusion Fencing: Best Practices (MNR, 2013). Temporary exclusion fence (e.g., silt fence) may be paired with ESC measures and should be installed along the perimeter of the project area. Temporary exclusion measures should be inspected and repaired weekly by a qualified biologist during the turtle active season.
- 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.

- Ensure that a qualified biologist develops a wildlife management plan for the construction process and delivers environmental compliance and biodiversity training to all site workers to implement the plan. The plan should include (but not be limited to) requirements to:

    - Utilize silt fence paired with sturdy construction fence along the project perimeter and around soil stockpiles to serve as a wildlife exclusion measure to prevent smaller animals from accessing/utilizing temporary habitats on the Site (e.g., prevent turtles from nesting in stockpiles on the Site).

    - Check the entire work site for wildlife prior to beginning work each day.

    - Do not harm, feed, or unnecessarily harass wildlife.

    - Manage waste to prevent attracting wildlife to the work site. Effective mitigation measures include litter prevention and keeping all trash secured in wildlife-proof containers and promptly removing it from the work site, especially during warm weather.

    - Enforce a speed limit of 20 km/h during the active season (April 1 to September 30) to reduce wildlife mortality.

    - Manage stockpiles and equipment at the work site to prevent wildlife from being attracted to artificial habitat. Cover and contain any piles of soil, fill, brush, rocks, and other loose materials and cap ends of pipes where necessary to keep wildlife out. Ensure that trailers, bins, boxes, and vacant buildings are secured at the end of each workday to prevent access by wildlife.

Once construction is complete and the residences are occupied, KAL recommends that new residents are encouraged through signage and public education to keep pets on leash during the bird breeding season (April 1 to August 31) and reptile active season (April 1 to October 31). It is recommended that landowners be provided with educational resources about keeping cats on a leash or indoors, as cats are one of the largest threats to bird populations (Blancher, 2013).

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 Taggart Realty Management and may be distributed only by Taggart Realty Management. Questions relating to the data and interpretation can be addressed to the undersigned.

Respectfully submitted,

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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

Sarantia Katsaras, BA

Sarantia is a biologist with a background in terrestrial ecology, specializing in species at risk wildlife. With nine years of fieldwork experience and five years of experience in environmental consulting, Sarantia has worked closely with a range of species at risk including: Chimney Swift, Common Nighthawk, Blanding's Turtle, Eastern Milksnake, Eastern Foxsnake, and Massasauga Rattlesnake. Sarantia has a diverse background and is skilled in breeding bird surveys, reptile mark-recapture, cover board surveys, visual encounter surveys, acoustic bat monitoring, anuran call surveys, wetland delineation, and vegetation inventories. Throughout her career, Sarantia has worked across Ontario in a variety of ecosystems including tallgrass prairie in Windsor-Essex, rock barrens and peatlands along eastern Georgian Bay, and boreal forest along the north shore of Lake Superior. Sarantia holds a BA (Hons) in Environmental Studies and has completed several certifications and professional courses including the Ontario Reptile and Amphibian Survey Methods Course. She also regularly volunteers as an assistant bander at the Hilliardton Marsh Research and Education Centre banding songbirds and owls. In addition to fieldwork, Sarantia provides office support through data management, background reviews, and writing Environmental Impact Studies.

Anthony Francis, PhD

Dr. Francis is a Senior Ecologist with 20 years' consulting experience to both government agencies and private industry. He has worked on a diversity of projects relating to species at risk (SAR), 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. Dr. Francis' academic background is in spatial ecology with a focus on tree species diversity. As a Senior Ecologist at KAL, he regularly completes TCRs, Environmental Impact Statements, and Integrated Environmental Reviews for land development projects throughout Ottawa and eastern Ontario. He is also a certified Butternut Health Assessor (BHA #104).

Kesia Miyashita, MSc

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

Appendix B Notes from City of Ottawa pre-consultation meeting

Pre-consultation Notes

Meeting: Wednesday September 1 @ 2pm

City Attendees:

Kelby Lodoen Unseth – Planning (File Lead)
Wally Dubyk – Transportation
Eric Harrold – Infrastructure
Jeannette Krabicka – Parks Planning
Mark Richardson – Forestry
Matthew Hayley – Environmental Planner
Randolph Wang – Urban Design

Location:

3930 & 3960 Riverside Drive

Property Overview and Discussion:

The Subject properties are located at 3930 & 3960 Riverside Drive, which is bordered by Riverside Drive to the east, Hunt Club Road to the south, Rideau River to the west, and Uplands-Riverside Park to the north. The site is currently zoned GM1[1719] S251 H(137 A.S.L.) following a zoning amendment approval under By-Law 2019-93, supported by City Council on April 10, 2019.

Discussion:

The proposal includes a mix of housing from single detached to apartments, with the height primarily directed toward the southern areas of the property. The concept identifies heights of 12-storeys with building heights reducing further north on the property.

Much of the discussion focused on the placement of the multi-use pathway crossing the site in a north to south direction. Additionally, discussion focused on the size and location of the park space and how to be connect this park space with the proposed development.

Access to the golf course pumping station along the Rideau River was a consideration with the previous application and I would anticipate similar considerations with this development.

The application proposal includes a subdivision application and zoning amendment to accommodate detached dwellings, townhouses, and apartment buildings. The zoning amendment would include the lifting of Schedule 251 which identifies an area of the property with residential development restrictions.

Pre-consultation Notes

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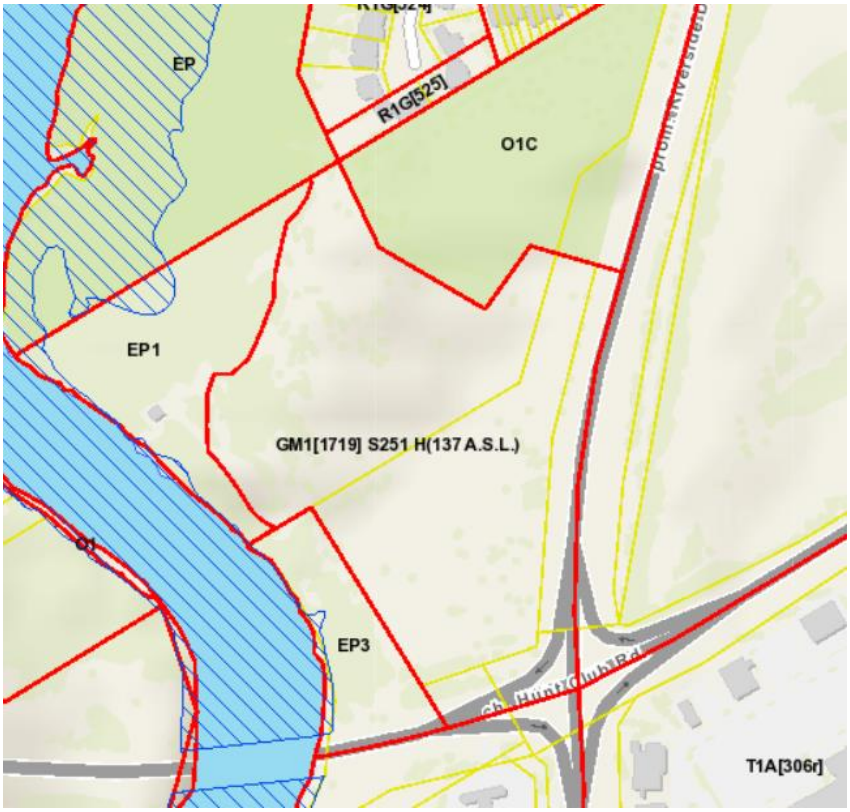
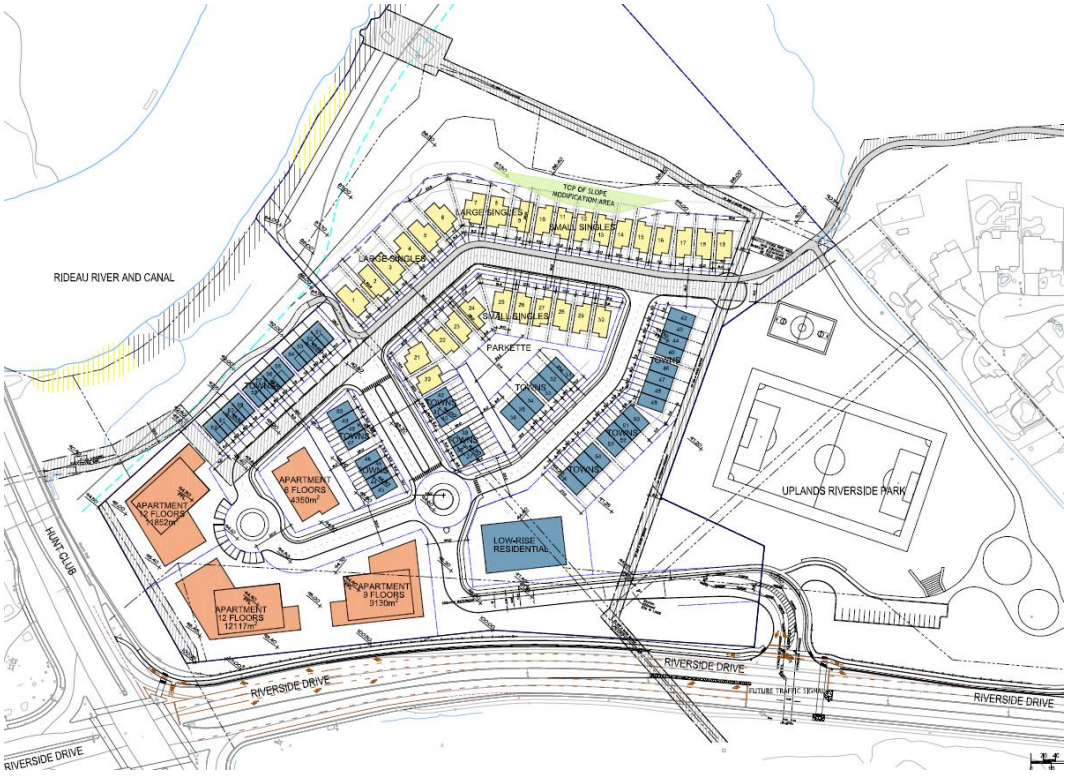
Property:



Site Plan Concept:



Pre-consultation Notes

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Transportation:

1) The TIA report to be revised and updated (traffic signals at the access still apply).

2) How will the MUP beneath the Hunt Club Road bridge be terminated.

3) The proposed MUP running across the Small Singles driveways is unsafe.
   - Option A: The ROW limits could be reduced to allow the MUP at the back of the Small Singles. Slope grade to be reviewed.
   - Option B: The MUP relocated through park area as discussed by Randall

4) Lighting along the MUP would be required.

Urban Design:

5) A Design Brief is required as part of the submission. The Terms of Reference is attached for convenience. Please note shadow and wind studies are required. Both studies should be focused on assessing the impacts of the proposed high-rise development.

6) The applicant's aspiration of the site, particularly those related to architecture design, is appreciated. However, it appears that the design and development of the site is heavily dependent on a better understanding of the grading situation and relevant regulations. The revised site plan can be very different from the one presented. The applicant is highly encouraged to explore a few site plan and massing options before determining the best strategy moving forward. A second preconsultation is beneficial when options are available for a discussion.

7) The site is quite isolated. It is important to make best efforts and use different place-making tools to ensure the new community will be connected, accessible, and welcoming, rather than a private enclave. Ideas such as an "arrival boulevard" are a great starting point. There are other opportunities such as the integration of the MUP and the expansion of the park.

8) The distribution of density and height on the site shown in the preliminary concept makes some sense. The mix of different building typologies is also appreciated. However, the new community appears to be not fully integrated and there is a lack of sense of place and community in the current design.

    a. High-rise and mid-rise buildings can be better organized to create public spaces, including streets, plazas, and parks.

    b. Mid-rise buildings can be designed to create publicly accessible court yards and other interesting spaces.

c. There may be opportunities to better integrate low-rise with mid-rise and high-rise buildings without having to worry too much about transition because it is a new community and the expectations of the future residents can be managed through master site plan. For example, urban towns may be located adjacent to a high-rise building that includes ground-oriented units in the podium.

d. Overall, a more progressive approach to design is highly encouraged.

9) The location of the MUP and the expansion of the park should be fully explored and carefully determined to make sure that they can contribute to the place-making strategy of the new community. Users of the MUP and park should feel safe, comfortable, and welcomed to use these public facilities. At the same time, residents of this new community should also feel comfortable to see these facilities being frequently used by people from outside of the neighbourhood. There should be an understanding of the hierarchy of "publicity" of the streets (even though they are by definition all public). The MUP, for example, should be aligned with the "more public" streets such as the proposed "arrival boulevard" rather than the streets of single detached houses.

Forestry:

TCR requirements:

10) a Tree Conservation Report (TCR) must be supplied for review along with the suite of other plans/reports required by the City
    a) an approved TCR is a requirement of Site Plan approval.

11) As of January 1 2021, any removal of privately-owned trees 10cm or larger in diameter, or publicly (City) owned trees of any diameter requires a tree permit issued under the Tree Protection Bylaw (Bylaw 2020 – 340); the permit will be based on an approved TCR and made available at or near plan approval.

12) The Planning Forester from Planning and Growth Management as well as foresters from Forestry Services will review the submitted TCR
    a) If tree removal is required, both municipal and privately-owned trees will be addressed in a single permit issued through the Planning Forester
    b) Compensation may be required for city owned trees – if so, it will need to be paid prior to the release of the tree permit

13) the TCR must list all trees on site by species, diameter and health condition

14) please identify trees by ownership – private onsite, private on adjoining site, city owned, co-owned (trees on a property line)

Pre-consultation Notes

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15) the TCR must list all trees on adjacent sites if they have a critical root zone that extends onto the development site

16) If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained

17) All retained trees must be shown and all retained trees within the area impacted by the development process must be protected as per City guidelines available at Tree Protection Specification or by searching Ottawa.ca
    a) the location of tree protection fencing must be shown on a plan
    b) show the critical root zone of the retained trees
    c) if excavation will occur within the critical root zone, please show the limits of excavation

18) the City encourages the retention of healthy trees; if possible, please seek opportunities for retention of trees that will contribute to the design/function of the site.

19) For more information on the process or help with tree retention options, contact Mark Richardson mark.richardson@ottawa.ca or on City of Ottawa

LP tree planting requirements:

For additional information on the following please contact tracy.smith@Ottawa.ca

20) Minimum Setbacks
    a) Maintain 1.5m from sidewalk or MUP/cycle track.
    b) Maintain 2.5m from curb
    c) Coniferous species require a minimum 4.5m setback from curb, sidewalk or MUP/cycle track/pathway.
    d) Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing.
    e) Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

21) Tree specifications
    a) Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.
    b) Maximize the use of large deciduous species wherever possible to maximize future canopy coverage
    c) Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and include watering and warranty as described in the specification (can be provided by Forestry Services).
    d) Plant native trees whenever possible
    e) No root barriers, dead-man anchor systems, or planters are permitted.

f) No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)

22) Hard surface planting
   a) Curb style planter is highly recommended
   b) No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.
   c) Trees are to be planted at grade

23) Soil Volume
   a) Please ensure adequate soil volumes are met:

Tree Type/Size	Single Tree Soil Volume (m3)	Multiple Tree Soil Volume (m3/tree)
Ornamental	15	9
Columnar	15	9
Small	20	12
Medium	25	15
Large	30	18
Conifer	25	15

Please note that these soil volumes are not applicable in cases with Sensitive Marine Clay.

24) Sensitive Marine Clay
   a) Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines

Environment:

25) The previous Environmental Impact Statement may be used, however please update it to address the new proposal. The Tree Conservation Report will address any butternut trees that may be present.

26) Future site plan applications will need to address bird-safe design, in particular the mid to high rise parts of the proposal will need to review and incorporate bird safe design elements. Some of the risk factors include glass and related design traps such as corner glass and fly-through conditions, ventilation grates and open pipes, landscaping, light pollution. More guidance and solutions are available in the guidelines which can be found here: https://ottawa.ca/en/planning-development-and-construction/developing-property/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans .

Pre-consultation Notes

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Rideau Valley Conservation Authority:

The RVCA has reviewed the documentation that was provided for in the pre-consultation as well as our notes on the previous file which were submitted by the same applicant. The RVCA offers the following comments for your consideration.

27) **Natural Hazards**

Conservation Authorities were delegated natural hazard responsibilities by the Minister of Natural Resources (now known as Ministry of Natural Resources and Forestry). This includes flood plain management, hazardous slopes, Great Lakes shorelines, unstable soils and erosion which are now encompassed by Section 3.1 "Natural Hazards" of the Provincial Policy Statement.

a) Floodplain

The subject site is adjacent the Rideau River. Very little of the property is within the 1:100 year floodplain due to the steep slope along the River. No development is being proposed within the floodplain.

b) Unstable Slopes

The slopes adjacent the Rideau River have been identified as Unstable Slopes in the City's Official Plan on Schedule K Environmental Constraints. The applicant had previously submitted a geotechnical report "Preliminary Geotechnical Assessment – Proposed Development, Hunt Club Road and Riverside Road, Ottawa, Ontario" dated March 2018, prepared by Golder Associates Ltd. The report had provided a slope stability analysis of the slope directly adjacent the river using the MNR Technical Guide for Natural Hazards. Based on the analysis, an 'Access Allowance' was not included. The Conservation Authority's position is that the 'Access Allowance" must be included in the limit of hazard lands. The report was also based on field observations completed in the year 2009. Given that the field observations were almost 10 years old, the RVCA will require that the slopes are investigated in the field by the consultant to ensure the conditions have not changed from those observations made in 2009.

We also note that the report did not delineate the location of the top of slope, stable slope allowance, erosion allowance, access allowance, 30 metres from the normal highwater mark and 15 metres from top of bank. Therefore, a plan that identifies all of the components of the limit of hazard lands and the setbacks required by the Official Plan will need to be provided.

The site is characterized by having two distinctive slopes. The first being the slope adjacent the river which was discussed above, the second being a sand ridge further from the river. The previous reports did not address the sand ridge

slope. Therefore, any report supporting the application for plan of subdivision will need to be amended to include the analysis of the sand ridge slope using the MNR Technical Guide for Natural Hazards and clearly delineate all of the required components (ie: limit of hazard lands, access allowance, erosion allowance, etc…).

Based on the concept plan provided, the proposed parcels look to be very close to the slope of the sand ridge. Please note that the RVCA will not support any parcels being created within the limit of hazard lands. As part of the proposed concept plan there is an area where the modifications to the slope are proposed to create more table land for development. The Conservation Authority typically does not support modifications to slopes to create more developable land. There has been some discussion with respect to the placement of pathways behind the residences along the upper most slope. All pathways will need to be located outside the limit of hazard lands.

Since 2018, the RVCA and the City of Ottawa have been studying landslides in the Ottawa area. In 2020, the RVCA and the City of Ottawa retained a third party expert (BGC Engineering Inc.) with expertise in landslide hazard and risk assessment to assist with the evaluation of Mosquito Creek in the City's south end. As part of the supporting documentation for this study, BGC Engineering Inc. prepared a background document regarding large landslides in sensitive marine clay in the Ottawa area. The work focused on large, rapid, retrogressive earth flows and spreads, which have the potential to occur suddenly, with little to no warning, and involve large areas (hundreds of metres or greater) of relatively flat terrain above slopes. While this study is still draft, there are some preliminary findings which can be observed from the report.

Based on the historical evidence within the Ottawa area, large landslides in creek valleys have generally been observed where the relief is 9 metres or greater, with the probability of a large landslide increasing as the relief increases. However, small landslides are abundant in creek valleys in the Ottawa area. These landslides can be characterized as being tens of metres but not more than 100 metres in width and length. These landslides are generally observed along slopes with a relief of 5 metres or higher. This site would meets some of the criteria which would normally trigger a landslide hazard or risk assessment. However, due to the original land use on site and the available records, the RVCA will be doing some additional screening before confirming whether a landslide hazard or risk assessment would be triggered.

28) **Natural Heritage**

a) <u>Environmental Impact Statement</u>

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The applicant had originally submitted the EIS "Tree Conservation Report and Environmental Impact Statement – 3860 and 3930 Riverside Drive" dated January 2nd, 2018. The RVCA reviewed the report within the context of setbacks from the Rideau River. The report has concluded that the highly disturbed tablelands proposed for development do not provide any significant support for the features or functions of the Rideau River and adjacent corridor. The report has provided mitigation measures for during and after construction. We note that the proposed lots being created through the plan of subdivision will exceed 30 metres from the river.

29) **Stormwater Management**

The applicant had originally submitted a servicing report "Design Brief – Riverside Park, 3930 and 3960 Riverside Drive" dated March 2018, prepared by IBI Group. The report noted that the site falls within the drainage area for the existing Riverwalk Stormwater Management Facility (also known as the Kimberwick Stormwater Management Facility) which was constructed in the early 90's. Stormwater runoff for this site was accounted for as part of the revised stormwater management plan dated 1996 by Novatech Engineering. The stormwater from this site is proposed to be treated for water quality using the Kimberwick Stormwater Management Facility. While the report did not provide much detail as to the level of water quality treatment, it is acknowledged that some decisions were made as part of previous applications where the City and MOE (now MOECC) made a commitment that the developers would only be required to remediate and operate the pond as intended under the original MOE Certificate. It is our understanding that the applicant wishes to pursue a similar stormwater management plan for this application. However, should the City accept this approach, then a better understanding as to how water quality is being dealt with by the existing pond will be required.

While the RVCA acknowledges the commitments made, the situation is not ideal as the existing pond most likely does not meet current standards. Therefore the Conservation Authority will be strongly encouraging the use of LID design measures given the sandy soils present on the site to further promote improved water quality treatment.

30) **Conservation Authority Regulations**

A Significant portion of the property is within the RVCA's Regulation limit. The regulation limit in this area is due to the potential for unstable slopes. The written permission of the RVCA under Ontario Regulation 174/06 (or as amended) "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation" made pursuant to Section 28 of the Conservation Authorities Act is required for the following:

- any development within the regulation limit

Pre-consultation Notes

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- Any alteration, straightening, changing, diverting or interfering in any way with any watercourse requires the prior written approval from the Conservation Authority (including watercourse crossings).

Planning:

25) The GM1 zoning designation includes apartment dwelling low rise, apartment dwelling mid rise, planned unit development, stacked dwelling, and townhouse dwelling as permitted residential uses. Single detached dwelling, semi detached dwelling, and apartment dwelling high rise are not specifically identified as permitted uses within this zoning district.

26) The pre-application consultation form identifies zoning amendment and plan of subdivision application. The addition of uses to a zoning district is considered a major zoning amendment.

27) Future site development may be subject to Site Plan Control applications.

28) Through the previous application review for this site, other considerations related to development of this site may include: installation and maintenance of the intersection signalization to access the site at Riverside Drive, location of the top of bank along Rideau River, multi-use pathway location, circulation of application with NCC due to proximity with Rideau River, over-sized services and location relative to Uplands-Riverside Park.

29) City of Ottawa Accessibility Design Standards: https://documents.ottawa.ca/sites/documents/files/documents/accessibility_design_standards_en.pdf

30) Please ensure that the Parking, Queuing and Loading Provisions are following and appropriate vehicle and bicycle parking is provided on-site (https://ottawa.ca/en/part-4-parking-queuing-and-loading-provisions-sections-100-114#bicycle-parking-space-rates-and-provisions-sec-111).

31) Please ensure that the Landscaping Provisions for Parking Lots are followed (https://ottawa.ca/en/part-4-parking-queuing-and-loading-provisions-sections-100-114#section-110-landscaping-provisions-parking-lots).

32) The Planning Rationale Terms of Reference may be found here.

33) For information on Applications, including fees, please visit: https://ottawa.ca/en/planning-development-and-construction/developing-property/development-application-review-process/development-application-submission/development-application-forms#site-plan-control

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34) The application processing timeline generally depends on the quality of the submission. For more information on standard processing timelines, please visit: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/development-application-forms#site-plan-control

Engineering:

35) Attached as separate document.

Parks:

36) Attached as separate document.

Attachments:

- Engineering comments
- Parks comments
- Plan and study list
- Design Brief Terms of Reference

For any questions, please feel free to contact me at the information below. Please provide all submission documents electronically as paper copies of plans and reports are not being requested at this time.

Best regards,

Kelby Lodoen Unseth MCIP, RPP
Planner II | Urbaniste II
Development Review (South Services) | Examen des projets d'aménagement (services sud)
Planning, Infrastructure and Economic Development | Services de planification, d'infrastructure et de développement économique

City of Ottawa | Ville d'Ottawa
☎ 613.580.2424 ext./poste 12852
ottawa.ca/planning / ottawa.ca/urbanisme

Enc.

Appendix C MECP Species at Risk Correspondence

March 22, 2022 **Our File: TAGG 1299.2**

Management Biologist
Permissions and Compliance Section
Ontario Ministry of Environment, Conservation and Parks
10-1 Campus Drive
Kemptville, ON
K0G 1J0

Reference: Species at risk information request for 3930 and 3960 Riverside Drive in Ottawa, Ontario

To Whom it May Concern:

1.0 INTRODUCTION

This letter is a request for information relating to the potential presence of species at risk (SAR) for the proposed residential development of 3930 and 3960 Riverside Drive in Ottawa, Ontario. This letter includes a desktop review of SAR occurrence records using the resources and guidelines outlined in the draft document, *Client's Guide to Preliminary Screening for Species at Risk* (Ministry of the Environment, Conservation and Parks (MECP), 2019). We (Kilgour & Associates Ltd.; KAL) are seeking confirmation from MECP regarding the list of SAR that may occur on or near the project site. Potential impacts to SAR will be assessed via an Environmental Impact Study (EIS) that we will be preparing for our client. If impacts to SAR are anticipated, we will recommend that our client notifies MECP and engages in consultation to further consider potential impacts, avoidance and/or mitigation measures, and whether the project may require authorization under the *Endangered Species Act* (ESA).

1.1 Site Overview

The project involves the proposed development of 3930 and 3960 Riverside Drive as a residential subdivision. The site is approximately 8.15 ha in size and is adjacent to the Rideau River (Figure 1). The project area is be dominated by natural forested areas and open meadow communities. Roads border the property to the south and east. Residential infrastructure borders the site to the northeast, and commercial infrastructure borders the site to the south. The western edge of the property borders the Rideau River.

The centroid coordinates of the subject project area are:

Latitude: 45.336166°, Longitude: -75.695038°

Figure 1 Map showing the project area (outlined in red)

2.0 SPECIES AT RISK RESOURCES REVIEW AND RESULTS

We reviewed the following online resources to determine SAR occurrences on and/or nearby the site:

- Aquatic Species at Risk Map (DFO, 2019)
- Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF)
    - Natural Heritage Information Centre (MNDMNRF, 2022a)
    - Land Information Ontario Provincially Tracked Species Grid Detail (MNDMNRF, 2022b)
    - *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)
- Species at Risk in Ontario (MECP, 2022)

- Species at Risk Public Registry (Government of Canada, 2022)
- Atlas of the Breeding Birds of Ontario 2001-2005 (Bird Studies Canada et al., 2009)
- Herp Atlas (Ontario Nature, 2019)
- iNaturalist (California Academy of Sciences and National Geographic Society, 2022)
- eBird (Cornell Lab of Ornithology, 2022)
- Bumble Bee Sightings Map (Bumble Bee Watch, 2022)

The results of the SAR desktop review are indicated in Table 1. Note that occurrence data in Table 1 from the Natural Heritage Information Centre (MNDMNRF, 2022a), Land Information Ontario (MNDMNRF, 2022b), eBird (Cornell Lab of Ornithology, 2022), and iNaturalist (California Academy of Sciences and National Geographic Society, 2022) are occurrences within ~5 km of the site. SAR occurrence data from the Atlas of the Breeding Birds of Ontario (Bird Studies Canada et al., 2009) and Herp Atlas (Ontario Nature, 2019) are based on the 10 x 10 km Atlas square that the site falls in (18VR42).

Table 1 List of species at risk with potential to occur on or near the project site based on desktop review

Species Name (*Latin name*)	Information Source
Birds	
Bald Eagle (*Haliaeetus leucocephalus*)	Cornell Lab of Ornithology, 2022, California Academy of Sciences and National Geographic Society, 2022
Bank Swallow (*Riparia riparia*)	Bird Studies Canada et al., 2009, Cornell Lab of Ornithology, 2022
Barn Swallow (*Hirundo rustica*)	Bird Studies Canada et al., 2009, Cornell Lab of Ornithology, 2022
Black Tern (*Chlidonias niger*)	Cornell Lab of Ornithology, 2022
Bobolink (*Dolichonyx oryzivorus*)	Bird Studies Canada et al., 2009, MNDMNRF, 2022a, MNDMNRF, 2022b, Cornell Lab of Ornithology, 2022
Canada Warbler (*Cardellina canadensis*)	Cornell Lab of Ornithology, 2022
Chimney Swift (*Chaetura pelagica*)	Bird Studies Canada et al., 2009, Cornell Lab of Ornithology, 2022
Common Nighthawk (*Chordeiles minor*)	Bird Studies Canada et al., 2009, Cornell Lab of Ornithology, 2022, California Academy of Sciences and National Geographic Society, 2022
Eastern Meadowlark (*Sturnella magna*)	Bird Studies Canada et al., 2009, MNDMNRF, 2022a, MNDMNRF, 2022b
Eastern Wood-Pewee (*Contopus virens*)	Bird Studies Canada et al., 2009, Cornell Lab of Ornithology, 2022
Horned Grebe (*Podiceps auritus*)	Cornell Lab of Ornithology, 2022, California Academy of Sciences and National Geographic Society, 2022
Hudsonian Godwit (*Limosa haemastica*)	Cornell Lab of Ornithology, 2022

Species Name (*Latin name*)	Information Source
Least Bittern (*Ixobrychus exilis*)	MNDMNRF, 2022a
Loggerhead Shrike (*Lanius ludovicianus)*	MNDMNRF, 2022b
Peregrine Falcon (*Falco peregrinus*)	Bird Studies Canada et al., 2009, Cornell Lab of Ornithology, 2022, California Academy of Sciences and National Geographic Society, 2022, MNDMNRF, 2022a, MNDMNRF, 2022b
Rusty Blackbird (*Euphagus carolinus*)	Cornell Lab of Ornithology, 2022, California Academy of Sciences and National Geographic Society, 2022
Wood Thrush (*Hylocichla mustelina*)	Bird Studies Canada et al., 2009, MNDMNRF, 2022a
Mammals	
Little Brown Myotis (*Myotis lucifugus*)	Humphrey & Fotherby, 2019
Arthropods	
Gypsy Cuckoo Bumble Bee (*Bombus bohemicus*)	MNDMNRF, 2022a, MNDMNRF, 2022b
Monarch (*Danaus plexippus*)	California Academy of Sciences and National Geographic Society, 2022
Nine-spotted Lady Beetle (*Coccinella novemnotata*)	MNDMNRF, 2022b
Yellow-banded Bumble Bee (*Bombus terricola*)	MNDMNRF, 2022a, MNDMNRF, 2022b
Reptiles	
Blanding's Turtle (*Emydoidea blandingii*)	Ontario Nature, 2019, California Academy of Sciences and National Geographic Society, 2022, MNDMNRF, 2022b
Eastern Musk Turtle (*Sternotherus odoratus*)	Ontario Nature, 2019, MNDMNRF, 2022b
Northern Map Turtle (*Graptemys geographica*)	Ontario Nature, 2019
Snapping Turtle (*Chelydra serpentina*)	Ontario Nature, 2019, California Academy of Sciences and National Geographic Society, 2022, MNDMNRF, 2022a, MNDMNRF, 2022b
Vascular Plants	
Butternut (*Juglans cinerea*)	KAL observations, 2021, MNDMNRF, 2022a, MNDMNRF, 2022b

We note that observation records on eBird (Cornell Lab of Ornithology, 2022) and iNaturalist (California Academy of Sciences and National Geographic Society, 2022) 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).

3.0 CLOSURE

Thank you for considering this SAR information request for 3930 and 3960 Riverside Drive in Ottawa, Ontario. We look forward to any comments you may have. Questions relating to the contents of this letter can be addressed to the undersigned.

Respectfully submitted,

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Appendix D Regional Screening for Species at Risk

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 on or Adjacent (within 120 m) to the Site	Potential for Protected Elements[1]		Assessed Potential for Overall Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
Birds								
American White Pelican (*Pelecanus erythrorhynchos*)	**Threatened**	**Not at Risk**	Cornell Lab of Ornithology (2022)	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 contain suitable habitat; however, the Rideau River adjacent to the Site may provide suitable migratory stopover habitat.	Negligible	Low Transient occurrence near the project area is possible.	Negligible
Bald Eagle (*Haliaeetus leucocephalus*)	**Special Concern**	**Not at Risk**	Cornell Lab of Ornithology (2022); California Academy of Sciences and National Geographic Society (2022)	Nest in mature forests near open water. In large trees such as pine and poplar.	Mature forests on-site (adjacent to the Rideau River) may provide suitable habitat during both the breeding and non-breeding season.	Moderate	Moderate	Moderate
Bank Swallow (*Riparia riparia*)	**Threatened**	**Threatened**	Birds Canada et al. (2009); Cornell Lab of Ornithology (2022)	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.	Although the Site contains a steep slope it does not have large areas of exposed sand.	Negligible	Moderate Transient occurrence should be anticipated.	Low The Site is unlikely to provide suitable habitat; however, as Bank Swallow occur in the area there is potential for them to occur on the Site.
Barn Swallow (*Hirundo rustica*)	**Threatened (Special Concern as of Jan 25, 2023)**	**Threatened**	Birds Canada et al. (2009); MNRF (2022a); Cornell Lab of Ornithology (2022)	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 overhanging roof of the pumphouse station on-site could provide nesting habitat, while the meadow, open woodland, and Rideau River could provide foraging habitat. The edge of the Rideau River and stormwater management pond (north of the Site) could provide additional foraging habitat. Further, buildings adjacent to the Site could provide suitable nesting habitat.	Moderate	Moderate	Moderate
Black Tern (*Chlidonias niger*)	**Special Concern**	**Not at Risk**	Cornell Lab of Ornithology (2022)	Build floating nests in loose colonies in shallow marshes with abundant emergent vegetation, especially in cattails.	The Site does not contain suitable habitat.	Negligible	Low Transient occurrence near the project area is possible.	Negligible
Bobolink (*Dolichonyx oryzivorus*)	**Threatened**	**Threatened**	Birds Canada et al. (2009); MNRF (2022a); MNRF (2022b); Cornell Lab of Ornithology (2022)	Breeds in hayfields, pastures, agricultural fields, and abandoned fields with tall grass that are ≥5 ha, and preferably >30 ha.	The meadow on-site may provide marginally suitable breeding habitat, as it is not grass dominated (it is a mix of grasses and forbs) and <2 ha.	Low	Moderate Transient occurrence should be anticipated.	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 on or Adjacent (within 120 m) to the Site	Potential for Protected Elements[1]		Assessed Potential for Overall Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
Canada Warbler (*Cardellina canadensis*)	**Special Concern**	**Threatened**	Cornell Lab of Ornithology (2022)	Prefers moist forests with dense shrub layers. Nests located on or near the ground on mossy logs or roots, along stream banks or on hummocks. Area-sensitive species that usually require a minimum of 30 ha of continuous forest for breeding habitat (OMNR, 2000).	The Site does not appear to contain suitable habitat.	Low	Low	Low
Cerulean Warbler (*Setophaga cerulea)*	**Threatened**	**Endangered**	n/a	Prefers mature deciduous forests. Area-sensitive species that require large forests (>100 ha) (OMNR, 2000).	The Site does not contain suitable habitat. The mature deciduous forest is not large enough to support breeding. The Site is also outside its main breeding range.	Negligible	Negligible	Negligible
Chimney Swift (*Chaetura pelagica*)	**Threatened**	**Threatened**	Birds Canada et al. (2009); MNRF (2022a); Cornell Lab of Ornithology (2022)	Nests in traditional-style open brick chimneys (and rarely in hollow trees). Tends to stay close to water.	Hollow trees (living or dead) within the mature forests on-site may provide nesting/roosting habitat. The Site also contains suitable foraging habitat. Additionally, buildings adjacent to the Site may provide suitable nesting/roosting habitat; however, it is unknown if they have traditional-style, uncapped chimneys.	Moderate	Moderate	Moderate
Common Nighthawk (*Chordeiles minor*)	**Special Concern**	**Threatened**	Birds Canada et al. (2009); Cornell Lab of Ornithology (2022); California Academy of Sciences and National Geographic Society (2022)	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 suitable nesting habitat including the meadow, mature Sugar Maple forests, and the trial/hydro corridor. Open areas, particularly the Rideau River, would provide suitable foraging habitat.	Moderate	Moderate	Moderate
Eastern Meadowlark (*Sturnella magna*)	**Threatened**	**Threatened**	Birds Canada et al. (2009); MNRF (2022a); MNRF (2022b); Cornell Lab of Ornithology (2022)	Breeds in hayfields, pastures, agricultural fields, and abandoned fields with tall grass that are ≥5 ha, and preferably >30 ha.	The meadow on-site may provide marginally suitable breeding habitat, as it is not grass dominated (it is a mix of grasses and forbs) and <2 ha.	Low	Moderate Transient occurrence should be anticipated.	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 on or Adjacent (within 120 m) to the Site	Potential for Protected Elements[1]		Assessed Potential for Overall Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
Eastern Whip-poor-will (*Antrostomus vociferus*)	**Threatened**	**Threatened**	Cornell Lab of Ornithology (2022)	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 ground. Home range size varies from 20 to 500 ha (mean 136 ha) (ECCC, 2018a).	Forest edges may provide suitable nesting habitat while the meadow, thicket swamp, and open woodland may provide suitable foraging habitat. However, due to the Site's size and fragmentation it would likely only provide marginally suitable habitat.	Negligible	Moderate Transient occurrence should be anticipated.	Low
Eastern Wood-Pewee (*Contopus virens*)	**Special Concern**	**Special Concern**	Birds Canada et al. (2009); Cornell Lab of Ornithology (2022)	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 mature Sugar Maple forest on-site may provide suitable habitat.	Moderate	Moderate	Moderate
Evening Grosbeak (*Coccothraustes vespertinus*)	**Special Concern**	**Special Concern**	Cornell Lab of Ornithology (2022)	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 mature coniferous forest on-site may provide suitable habitat during both the breeding and non-breeding season. The Sugar Maple forest and open woodland may also provide suitable habitat. Additionally, the golf course west of the Site may provide suitable habitat.	Moderate	Moderate	Moderate
Golden Eagle (*Aquila chrysaetos*)	**Endangered**	**Not at Risk**	n/a	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 open meadow adjacent to the Rideau River may provide marginally suitable migratory stopover habitat.	Low	Low	Low
Golden-winged Warbler (*Vermivora chrysoptera*)	**Special Concern**	**Threatened**	n/a	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).	Open, shrubby areas (woodland, hydro corridor) surrounded by mature forest on the Site may provide marginally (due to size) suitable habitat.	Low	Low	Low
Grasshopper Sparrow (*Ammodramus savannarum*)	**Special Concern**	**Special Concern**	MNRF (2022a); Cornell Lab of Ornithology (2022)	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	The meadow on-site may provide marginally suitable breeding habitat, as it is not grass dominated (it is a mix of grasses and forbs) and <2 ha.	Low	Moderate Transient occurrence should be anticipated.	Low

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						Habitat	Individuals	
				areas that are sparsely vegetated, and its nests are well hidden in the field, woven from grasses in a small cup-like shape.				
Henslow's Sparrow (*Ammodramus henslowii*)	**Endangered**	**Endangered**	n/a	Prefers poorly drained grasslands with tall, dense grass where it can easily conceal its small ground nest. Tends to avoid fields that have been grazed or are crowded with trees and shrubs. Prefer ≥50 ha areas, but can inhabit ≥5 ha.	The Site does not contain suitable habitat and breeding was not reported in eastern Ontario during the second (most recent) OBBA from 2001 to 2005 (Birds Canada et al., 2009).	None	None	None
Horned Grebe (*Podiceps auritus*)	**Special Concern**	**Special Concern**	Cornell Lab of Ornithology (2022); California Academy of Sciences and National Geographic Society (2022)	Nest in small ponds, marshes, and shallow bays that contain areas of open water and emergent vegetation. Migrant only; no reported nests in Ottawa.	The Site does not contain suitable habitat; however, the Rideau River adjacent to the Site may provide suitable migratory stopover habitat.	Negligible	Low Transient occurrence near the project area is possible.	Negligible
Hudsonian Godwit (*Limosa haemastica*)	**Threatened**	**No Status**	Cornell Lab of Ornithology (2022)	They use a wide variety of habitats during migration, such as freshwater marshes, saline lakes, flooded fields, shallow ponds, coastal wetlands, and mudflats. Migrant only; breeds in far north.	The Site does not contain suitable habitat and the section of the Rideau River adjacent to Site does not appear to provide migratory stopover habitat.	Negligible	Negligible	Negligible
Least Bittern (*Ixobrychus exilis*)	**Threatened**	**Threatened**	MNRF (2022a); Cornell Lab of Ornithology (2022)	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 contain suitable habitat; however, marginally suitable habitat may occur in the vicinity such as vegetated areas along the Rideau River and the stormwater management pond north of the Site.	Negligible	Moderate Transient occurrence should be anticipated.	Low
Lesser Yellowlegs (*Tringa flavipes*)	**No Status (Threatened as of Jan 25, 2023)**	**No Status**	Cornell Lab of Ornithology (2022)	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 contain suitable habitat and the section of the Rideau River adjacent to Site does not appear to provide migratory stopover habitat.	Negligible	Negligible	Negligible
Loggerhead Shrike (*Lanius ludovicianus*)	**Endangered**	**Endangered**	MNRF (2022a); MNRF (2022b)	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	The Site does not appear to contain suitable habitat as the meadow does not contain hawthorns or barbed wire fences.	Negligible	Negligible	Negligible

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						Habitat	Individuals	
				makes it easier to spot prey.				
Louisiana Waterthrush (*Seiurus motacilla*)	**Threatened**	**Threatened**	n/a	Found in large tracts of mature deciduous or mixed forests in steep, forested ravines with running streams. Clear headwater streams and associated wetlands are preferred sites, but it will also inhabit wooded swamps (Environment Canada, 2011).	The Site does not contain suitable habitat as the mature deciduous forest does not contain a stream. The White Cedar swamp north of the Site could provide suitable habitat; however, it is isolated and is outside its main breeding range.	Negligible	Negligible	Negligible
Olive-sided Flycatcher (*Contopus cooperi*)	**Special Concern**	**Threatened**	Cornell Lab of Ornithology (2022)	Found along coniferous or mixed forest edges and openings often located near water or wetlands. Will use forests that have been logged or burned if there are ample tall snags and trees to use for foraging perches.	The edges of the mature White Pine forest may provide marginally (due to size) suitable habitat.	Low	Low	Low
Peregrine Falcon (*Falco peregrinus*)	**Special Concern**	**Special Concern**	Birds Canada et al. (2009); Cornell Lab of Ornithology (2022); MNRF (2022a); MNRF (2022b); California Academy of Sciences and National Geographic Society (2022)	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 contain suitable habitat.	Negligible	Low Transient occurrence near the project area is possible.	Negligible
Red Knot (*Calidris canutus rufa*)	**Endangered**	**Endangered**	n/a	Prefer open beaches, mudflats, and coastal lagoons where they feast on molluscs, crustaceans, and other invertebrates. Migrant only; nests in far north.	The Site does not contain suitable habitat and the section of the Rideau River adjacent to Site does not appear to provide migratory stopover habitat.	Negligible	Negligible	Negligible
Red-headed Woodpecker (*Melanerpes erythrocephalus*)	**Endangered**	**Endangered**	Cornell Lab of Ornithology (2022)	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 birds use for nesting and perching.	The open woodland and mature Sugar Maple forest with snags on-site may provide suitable habitat.	Moderate	Moderate	Moderate
Red-necked Phalarope (*Phalaropus lobatus*)	**Special Concern**	**Special Concern**	n/a	Lives in coastal and inland marshes where it feeds in shallow ponds and nests on the grassy edges. Always near water during migration. Migrant only; nests in far north.	The Site does not contain suitable habitat.	Negligible	Negligible	Negligible
Rusty Blackbird (*Euphagus*	**Special Concern**	**Special Concern**	Cornell Lab of Ornithology (2022);	Prefers wet wooded or shrubby areas. Nests at edges of boreal	Swamps and riparian areas on-site would provide suitable habitat;	Moderate	Moderate	Moderate

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						Habitat	Individuals	
carolinus)			California Academy of Sciences and National Geographic Society (2022)	wetlands and coniferous forests. These areas include bogs, marshes, and beaver ponds.	although, as the Site is outside its main breeding range it may serve as migratory stopover habitat.			
Short-eared Owl (*Asio flammeus*)	**Special Concern (Threatened as of Jan 25, 2023)**	**Special Concern**	MNRF (2022a); Cornell Lab of Ornithology (2022)	Prefer a mosaic of grasslands and wetlands. Lives in open native habitats such as grasslands, marshes, and tundra where it nests on the ground and hunts for small mammals (Environment Canada, 2016c).	Due to the lack of large open native habitats and wetlands the Site does not contain ideal breeding or non-breeding habitat.	Low	Moderate The species occurs in the vicinity and could actively use the Site.	Low
Wood Thrush (*Hylocichla mustelina*)	**Special Concern**	**Threatened**	Birds Canada et al. (2009); MNRF (2022a); Cornell Lab of Ornithology (2022)	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 mature Sugar Maple forest on-site may provide suitable habitat.	Moderate	Moderate	Moderate
Yellow Rail (*Coturnicops noveboracensis*)	**Special Concern**	**Special Concern**	n/a	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	Negligible	Negligible
Mammals								
Algonquin Wolf (*Canis* sp.)	**Threatened**	**Special Concern**	n/a	Not restricted to a specific habitat type but typically occurs in deciduous and mixed forest landscapes.	This species only occurs in Algonquin Provincial Park and surrounding townships, along with other areas in central Ontario including in and around Killarney Provincial Park, Kawartha Highlands Signature Site, and Queen Elizabeth II Wildlands (MECP, 2019a).	None	None	None
Eastern Cougar (*Puma concolor*)	**Endangered**	**No Status**	n/a	Lives in large, undisturbed forests or other natural areas where there is little human activity.	The Site does not contain suitable habitat.	None	Negligible	Negligible
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,	Forested habitats and the pumphouse on-site may provide suitable roosting habitat. While the buildings adjacent to the Site may provide additional roosting habitat.	Moderate	Moderate	Moderate

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						Habitat	Individuals	
				under bridges, or in caves, mines, or hollow trees. Overwinters in caves and abandoned mines.	Forests (including corridors) and meadows may provide suitable foraging habitat. The edge of the Rideau River and stormwater management pond could provide additional foraging habitat.			
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.	Forested habitats and the pumphouse on-site may provide suitable roosting habitat. While the buildings adjacent to the Site may provide additional roosting habitat. The meadow and forest openings on-site may provide suitable foraging habitat. The edge of the Rideau River and stormwater management pond could provide additional 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.	Forested habitats on-site may provide suitable roosting and foraging habitat. The meadow on-site may also provide suitable foraging habitat. The edge of the Rideau River and stormwater management pond could provide additional 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.	Forested habitats (particularly the mature Sugar Maple forest) on-site may provide suitable roosting habitat. The forested riparian areas and meadow on-site may provide suitable foraging habitat. The edge of the Rideau River and stormwater management pond could provide additional foraging habitat.	Moderate	Moderate	Moderate
Amphibians								
Western Chorus Frog (*Pseudacris triseriata*)	**Not Listed**	Great Lakes/ St. Lawrence population: **Threatened**	n/a	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.	Open, lowland habitats (in the Sugar Maple forest) and forest openings may contain vernal pools that that could provide suitable breeding habitat. Further, the swamps on-site may also provide suitable habitat.	Moderate	Moderate	Moderate
Reptiles								
Blanding's Turtle (*Emydoidea blandingii*)	**Threatened**	**Endangered**	Ontario Nature (2019); MNRF (2022a); MNRF (2022b); California Academy of	Quiet lakes, streams, and wetlands with abundant emergent vegetation. Also frequently occurs in adjacent	The sandy shoreline of the Rideau River and meadow (MEMM3) may provide nesting habitat, while the river itself may provide overwintering	Moderate	Moderate	Moderate

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						Habitat	Individuals	
			Sciences and National Geographic Society (2022)	upland forests.	habitat. Open, lowland habitats (in the Sugar Maple forest), forest openings with vernal pools, and swamps on-site could provide suitable staging habitat and/or act as a corridor during seasonal movements.			
Eastern Milksnake (*Lampropeltis triangulum*)	**Not Listed**	**Special Concern**	Ontario Nature (2019); MNRF (2022a)	Found in a variety of open and edge habitats, including meadows, rocky outcrops, and forest edges. They can also inhabit forests. Further, they are often associated with human-made structures such as barns (Environment Canada, 2015b).	The mosaic of habitats (meadow, thicket, forest) across the Site may provide suitable habitat to support all life stages.	Moderate	Moderate	Moderate
Eastern Musk Turtle / Stinkpot (*Sternotherus odoratus*)	**Special Concern**	**Special Concern**	Ontario Nature (2019); MNRF (2022b)	Found in lakes, ponds, marshes, and rivers that are generally slow-moving, have abundant emergent vegetation, and muddy bottoms that they burrow into for winter hibernation.	The edge of the Rideau River does not appear to have enough vegetation to support Eastern Musk Turtles.	Low	Low	Low
Eastern Ribbonsnake *(Thamnophis sauritus)*	**Special Concern**	**Special Concern**	n/a	The Eastern Ribbonsnake is semi-aquatic. It is most frequently found along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.	The Site does not appear to provide suitable habitat as it likely does not contain enough wetland habitat to support Eastern Ribbonsnake.	Negligible	Negligible	Negligible
Common Five-lined Skink (*Plestiodon fasciatus*)	Southern Shield population: **Special Concern**	Great Lakes/ St. Lawrence population: **Special Concern**	n/a	Common Five-lined Skinks can be found underneath rocks on open bedrock in forests.	The Site does not contain ideal habitat as there are no rocky outcrops in forests clearings (Seburn, 2010).	Negligible	None	None The Site is outside the species' range (Seburn, 2010).
Gray Ratsnake (*Pantherophis spiloides*)	Frontenac Axis population: **Threatened**	Great Lakes/ St. Lawrence population: **Threatened**	n/a	Requires a mosaic of habitat features and prefer deciduous forest and edge habitat. They lay eggs in rotten interior cavities of large deciduous trees and stumps or compost piles. This species overwinters underground in communal hibernacula.	The Sugar Maple forest and meadow could provide suitable habitat; however, it is limited. Further, the Site is lacking a mosaic of habitats including old field, rocky outcrops, and marshes (Kraus et al., 2010).	Negligible	None	None The Site is outside the species' range (Kraus et al., 2010).
Midland Painted Turtle	**Not Listed**	**Special Concern**	Ontario Nature (2019); MNRF (2022a);	Inhabits waterbodies, such as ponds, marshes, lakes, and	The sandy shoreline of the Rideau River may provide nesting 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 on or Adjacent (within 120 m) to the Site	Potential for Protected Elements[1]		Assessed Potential for Overall Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
(*Chrysemys picta marginata*)			California Academy of Sciences and National Geographic Society (2022)	slow-moving creeks that have a soft bottom and provide abundant basking sites and aquatic vegetation. Often bask on shorelines or on logs and rocks that protrude from the water.	while the river itself may provide overwintering habitat.			
Northern Map Turtle (*Graptemys geographica*)	**Special Concern**	**Special Concern**	Ontario Nature (2019); California Academy of Sciences and National Geographic Society (2022)	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 sandy shoreline of the Rideau River may provide nesting habitat, while the river itself may provide overwintering habitat.	Moderate	Moderate	Moderate
Snapping Turtle (*Chelydra serpentina*)	**Special Concern**	**Special Concern**	Ontario Nature (2019); MNRF (2022a); MNRF (2022b); California Academy of Sciences and National Geographic Society (2022)	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 sandy shoreline of the Rideau River and meadow (MEMM3) may provide nesting habitat, while the river itself may provide overwintering habitat. Swamps on-site could provide habitat as a corridor during seasonal movements.	Moderate	Moderate	Moderate
Spiny Softshell (*Apalone spinifera*)	**Endangered**	**Endangered**	n/a	Found primarily in rivers and lakes but also in creeks, ditches, and ponds near rivers. Habitat requirements are open sand or gravel nesting areas, shallow muddy or sandy areas to bury in, deep pools for hibernation, areas for basking, and suitable habitat for crayfish and other food species.	The Rideau River adjacent to the Site may provide suitable habitat; however, the species is believed to be extirpated from eastern Ontario.	None	None	None
Spotted Turtle (*Clemmys guttata*)	**Endangered**	**Endangered**	n/a	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
Wood Turtle (*Glyptemys insculpta*)	**Endangered**	**Threatened**	n/a	Prefers clear rivers, streams, or creeks with a slight current and sandy or gravelly bottom. Wooded areas are essential habitat, but they are found in other habitats such as wet meadows, swamps, and fields.	The Site does not contain suitable habitat.	None	Negligible Known to occur broadly in eastern Ontario.	None
Arthropods								

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						Habitat	Individuals	
American Bumble Bee (*Bombus pensylvanicus*)	**No Status (Special Concern as of Jan 25, 2023)**	**No Status**	MNRF (2022a)	Habitat generalist. Requires a variety of habitat throughout it's life stages. Often found in or adjacent to open fields and meadows, grasslands, farmlands, and other undisturbed open habitats (Government of Canada, 2019).	The open meadow on-site may provide suitable habitat.	Moderate	Moderate	Moderate
Bogbean Buckmoth (*Hemileuca* sp. 1)	**Endangered**	**Endangered**	n/a	Restricted to open, chalky, low shrub fens containing large amounts of bogbean, an emergent wetland flowering plant.	The Site does not contain suitable habitat as there are no fens on-site.	None	Negligible	None
Gypsy Cuckoo Bumble Bee (*Bombus bohemicus*)	**Endangered**	**Endangered**	MNRF (2022a); MNRF (2022b)	Live in diverse habitats including open meadows, mixed farmlands, urban areas, boreal forest, and montane meadows. Host nests occur in abandoned underground rodent burrows and rotten logs.	Currently only known to occur in Pinery Provincial Park (MECP, 2019b).	None	None	None
Monarch (*Danaus plexippus*)	**Special Concern**	**Special Concern**	California Academy of Sciences and National Geographic Society (2022); Toronto Entomologists' Association (2022)	Milkweeds are the sole food plant for Monarch caterpillars. These plants predominantly grow in open and periodically disturbed habitats such as roadsides, fields, wetlands, prairies, and open forests.	The meadow and trail edge supporting milkweeds may provide suitable habitat.	Moderate	Moderate	Moderate
Mottled Duskywing (*Erynnis martialis*)	**Endangered**	**No Status**	n/a	Requires host plants such as the New Jersey Tea and Prairie Redroot. These plants grow in dry, well-drained soils or alvar habitat within oak woodland, pine woodland, roadsides, riverbanks, shady hillsides, and tall grass prairies.	The Site does not contain suitable habitat, and host plants were not detected on-site	Negligible	Negligible	Negligible
Nine-spotted Lady Beetle (*Coccinella novemnotata*)	**Endangered**	**No Status**	MNRF (2022a); MNRF (2022b)	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
Rapids Clubtail *(Gomphus quadricolor)*	**Endangered**	**Endangered**	n/a	Inhabits a wide variety of riverine habitats ranging in size from the St. Lawrence River to small creeks. Larvae are typically found in microhabitats with slow to moderate flow and fine sand or silt substrates	The forests may provide suitable habitat for adults, while the Rideau River adjacent to the Site may provide suitable breeding habitat. However, there are no records of this species in Ottawa (MECP, 2019d).	None	None	None

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						Habitat	Individuals	
				where they burrow into the stream bed. Adults disperse from the river after emerging and feed in the forest canopy and other riparian vegetation.				
Skillet Clubtail (*Gomphurus ventricosus*)	**No Status**	**Endangered**	MNRF (2022a); MNRF (2022b)	Requires clear or naturally turbid unpolluted running waters. Eggs are deposited on the surface of running waters and larvae likely burrow shallowly in the bottom of rivers in substrates of fine sand, silt, and/or clay. Historical records exist for the Ottawa and Rideau Rivers in Ontario from 1924 (ECCC, 2021).	The Site does not contain suitable habitat. The Rideau River adjacent to the Site may provide suitable breeding habitat; however, there are only historic records in the Ottawa area.	Negligible	Negligible	Negligible
Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*)	**No Status (Endangered as of Jan 25, 2023)**	**No Status**	COSEWIC (2019) – in region	Habitat generalist. Host nests occur in meadows, old fields, farmlands, croplands, urban areas, and woodlands (COSEWIC, 2019).	The mosaic of forests and meadow on the Site may provide suitable habitat.	Moderate	Moderate	Moderate
West Virginia White butterfly (*Pieris virginiensis*)	**Special Concern**	**No Status**	n/a	Lives in moist, deciduous woodlots. Requires a supply of toothwort, a small, spring-blooming plant that is a member of the mustard family, since it is the only food source for larvae.	Toothwort was not identified on-site; however, as it is a small plant that can go undetected it may occur on-site. Therefore, the moist deciduous woodland and lowlands within the Sugar Maple forest may provide suitable habitat.	Low	Low	Low
Yellow-banded Bumble Bee (*Bombus terricola*)	**Special Concern**	**Special Concern**	MNRF (2022a); MNRF (2022b)	This species is a forage and habitat generalist, able to use a variety of nectaring plants and environmental conditions. Can be found in mixed woodlands, particularly for nesting and overwintering, as well as a variety of open habitat such as native grasslands, farmlands, and urban areas.	The mosaic of forests and meadow on the Site may provide suitable habitat.	Moderate	Moderate	Moderate
Fish								
American Eel (*Anguilla rostrata*)	**Endangered**	**No Status**	n/a	Primarily nocturnal, hiding in soft substrate or submerged vegetation during the day.	The Site does not contain suitable habitat. The Rideau River adjacent to the Site may provide suitable habitat.	Negligible	Negligible	Negligible
Bridle Shiner (*Notropis bifrenatus*)	**Special Concern**	**Special Concern**	n/a	Prefers clear water with abundant vegetation over silty or sandy substrate.	The Site does not contain suitable habitat.	Negligible	Negligible	Negligible
Channel Darter (*Percina*	**Special Concern**	**Special Concern**	n/a	Prefers clean streams and lakes with moderate current over	The Site does not contain suitable habitat. The Rideau River adjacent to	None	None	None

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						Habitat	Individuals	
copelandi)				sandy or rocky substrate.	the Site may provide suitable habitat; however, the species does not occur in the Ottawa area (MECP, 2021a).			
Cutlip Minnow (*Exoglossum maxillingua)*	**Threatened**	**Special Concern**	n/a	Lives in warmer rivers and creeks with clear, slow-moving water, and a rocky or gravel bottom.	The Site does not contain suitable habitat and the species does not occur in the Ottawa area (MECP, 2021b).	None	None	None
Lake Sturgeon (*Acipenser fulvescens*)	**Endangered**	**No Status**	n/a	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.	Negligible	Negligible	Negligible
Northern Brook Lamprey (*Ichthyomyzon fossor*)	**Special Concern**	**Special Concern**	n/a	Inhabits clear, coolwater streams. The larval stage requires soft substrates such as silt and sand for burrowing which are often found in the slow-moving portions of a stream. Adults are found in areas associated with spawning, including fast flowing riffles comprised of rock or gravel.	The Site does not contain suitable habitat.	Negligible	Negligible	Negligible
Northern Sunfish (*Lepomis peltastes*)	**Special Concern**	**Special Concern**	n/a	Lives in shallow vegetated areas of quiet, slow flowing rivers and streams, as well as warm lakes and ponds with sandy banks or rocky bottoms.	The Site does not contain suitable habitat.	Negligible	Negligible	Negligible
River Redhorse (*Moxostoma carinatum*)	**Special Concern**	**Special Concern**	MNRF (2022a)	Prefers fast-flowing, clear rivers over rocky substrate.	The Site does not contain suitable habitat.	Negligible	Negligible	Negligible
Silver Lamprey (*Ichthyomyzon unicuspis*)	**Special Concern**	**Special Concern**	n/a	Requires clear water where they can find fish hosts, relatively clean stream beds of sand and organic debris for larvae to live in, and unrestricted migration routes for spawning. Larvae live 4-7 years in burrows (prefer soft substrates); filter-feed on plankton.	The Site does not contain suitable habitat. The Rideau River adjacent to the Site may provide suitable habitat.	Negligible	Negligible	Negligible
Molluscs								
Hickorynut (*Obovaria olivaria*)	**Endangered**	**Endangered**	n/a	Live on the sandy beds in large, wide, deep rivers – usually more than two or three metres deep – with a moderate to strong current. Ottawa River.	The Site does not contain suitable habitat. The Rideau River adjacent to the Site may provide suitable habitat.	Negligible	Negligible	Negligible
Vascular Plants								

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 on or Adjacent (within 120 m) to the Site	Potential for Protected Elements[1]		Assessed Potential for Overall Negative Interactions with Protected Elements[2]
						Habitat	Individuals	
American Chestnut (*Castanea dentata*)	**Endangered**	**Endangered**	n/a	Typical habitat is upland deciduous forests on sandy acidic soils. Occurs with Red Oak, Black Cherry, Sugar Maple, and beech. In Ontario, it is only found in the Carolinian Zone between Lake Erie and Lake Huron.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
American Ginseng (*Panax quinquefolius*)	**Endangered**	**Endangered**	n/a	Grows in rich, moist, but well-drained, and relatively mature, deciduous woods dominated by Sugar Maple, White Ash, and American Basswood.	The mature Sugar Maple forest may provide suitable habitat. However, as the bedrock is shallow the soil is not nutrient-rich or moist enough to support the species. Additionally, it was not detected during ELC.	Negligible	Negligible	Negligible
Black Ash (*Fraxinus nigra*)	**Endangered**	**No Status**	KAL (2021)	Predominantly a wetland species found in swamps, floodplains, and fens.	The Site contains suitable habitat. KAL biologists identified Black Ash on the edge of the mature White Pine forest close to the Rideau River.	High	High	High
Butternut (*Juglans cinerea*)	**Endangered**	**Endangered**	MNRF (2022a); MNRF (2022b); California Academy of Sciences and National Geographic Society (2022); KAL (2022)	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. KAL biologists identified Butternut on the edge of the mature Sugar Maple forest on-site.	High	High	High
Eastern Prairie Fringed-orchid (*Platanthera leucophaea*)	**Endangered**	**Endangered**	n/a	Populations are found in three main habitat types: fens, tallgrass prairie, and moist old fields.	The Site does not appear to contain suitable habitat.	Negligible	Negligible	Negligible
Lichens								
Black-foam Lichen (*Anzia colpodes*)	**No Status**	**Threatened**	MNRF (2022b)	Grows on the trunks of mature deciduous trees growing on level or sloped land where high humidity is supplied by nearby wetlands, lakes, or streams. The most common host is Red Maple but it also occurs on White Ash, Sugar Maple, Red Oak, and very occasionally on other species.	Assumed to no longer occur in Ontario (COSEWIC, 2015).	None	None	None

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						Habitat	Individuals	
Flooded Jellyskin (*Leptogium rivulare*)	**No Status**	**Special Concern**	n/a	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
Pale-bellied Frost Lichen (*Physconia subpallida*)	**Endangered**	**Endangered**	n/a	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.

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Appendix E Urban Natural Area #147, Riverwood Park Woods

UNA 147: Riverwood Park Woods

DESCRIPTION:

- extensive woodland along sloping river bank by Rideau River, Hunt Club Woods, Ottawa.

SITE DETAILS

a) **Size**:
10.4 ha.

b) **Ownership**:
- City

EVALUATION SUMMARY

Area Evaluation Summary Urban Natural Area 147: Riverwood Park Woods					
Criteria	**Rating Assigned**				
	1	**2**	**3**	**4**	**5**
Connectivity				X	
Regeneration		X			
Disturbance	X				
Size and Shape				X	
Habitat Maturity			X		
Natural Communities		X			
Representative Flora				X	
Significant Flora and Fauna	X				
Wildlife Habitat			X		
Overall Rating for Site	**Moderate**				

ECOLOGICAL FUNCTIONS :

a) **Connectivity:**
- on Rideau River.

b) **Interior habitat:**
None

c) **Disturbance and condition:**
- Moderate to High native flora Co-efficient of Conservation rating (4.17), with fifteen (15) high-rated Coefficient of Conservation species;
- all of site within edge effect influence;
- forest cover fragmented by canopy cutting throughout;
- formal pathway crosses site at mid section (to stormwater ponds).

d) **Adjacent land use:**
- residential area development adjacent to natural area on east; stormwater management ponds constructed along western edge.

e) **Invasive plants:**
- Eight (8) species with severe impact:

Glossy Buckthorn (*Rhamnus frangula*) (5)
Manitoba Maple (*Acer negundo*) (3)
Tartarian Honeysuckle (*Lonicera tatarica*) (2)
European Highbush-cranberry (*Viburnum opulus* (*s. str.*)) (1)
Purple Loosestrife (*Lythrum salicaria*) (2) - along river edge
Lily-of-the-Valley (*Convallaria majalis*) (1)
Dame's Rocket (*Hesperis matronalis*) (1)
Moneywort (*Lysimachia nummularia*) (1)

NATIVE BIODIVERSITY:

a) Habitats (type and dominants):
- young Upland Mixed Forest (White Cedar, Green Ash, Sugar Maple, White Elm, with Trembling Aspen, White Birch) in moist, sandy substrate of upper slopes;
- submature Mixed Swamp Forest (White Cedar, Black Ash, Yellow Birch) over dense buckthorn infestation in thin organic substrate.

b) Representative flora/ fauna:
- Moderate native biodiversity (132 native plant species observed);
- see ***Appendix*** for list of native flora and fauna observed.

c) Significant features and species:
- Two Regionally Uncommon plant species in woodland habitat; [Regionally Rare *Carex urticulata* reported without comment in NOSS 2801 and unsubstantiated by vouchers; not included in present evaluation];
- component of Rideau River wildlife corridor;
- provides local stormwater control and enhanced Rideau River water quality.

ECOLOGICAL COMMENTS:

a) Management:
- maintenance of natural forest canopy required to suppress invasive plant development and maintain surface water quality contribution;
- vegetated buffer between adjacent development and woodland areas required to minimize edge effect.

b) Recommendations:

Research:
- n/a

Passive recreation opportunities:
- potential for gravel footpath along rivershore from public access off Kimberwick Street with development of interpretation themes, including wildlife corridor functions, woodland contribution to river water quality.

SITE INVESTIGATION DETAILS:

Date(s) and conditions: 18 November 2003 (clear and cold; tree leaves fallen); examined for Condition Only with other data from references cited.

Investigator(s): Daniel F. Brunton

OTHER COMMENTS: (field conditions, photographs taken, etc.)

- severely disturbed, scrubby riparian woodland offering limited intrinsic natural environment values but providing potentially ecological function contributions to Rideau River.

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UNA Site 147 *Appendix:* Native biodiversity

a) Vascular flora observed:

(data from NOSS 2801, Environmental Management Branch (1998); on-site reconnaissance, 18 November 2003;)

Species	Sites/ status in Ottawa	Co-efficient of Conservation
Abies balsamea (L.) Mill.	Common	5
Acer pensylvanicum L.	Common (local)	7
Acer rubrum L.	Common	4
Acer saccharinum L.	Common	5
Acer saccharum Marsh.	Common	4
Acer spicatum Lam.	Common (local)	6
Achillea millefolium L.	Common	0
Acorus americanus Raf.	Uncommon	8
Actaea rubra (Ait.) Willd.	Common	5
Ageratina altissima (L.) King & Robins. (*Eupatorium rugosum* Houtt.)	Common	5
Alisma triviale Pursh	Common	3
Alnus incana (L.) Moench ssp. *rugosa* (Duroi) Clausen (*A. rugosa* (Du Roi) Spreng.)	Common	6
Anemone canadensis L.	Common	3
Apios americana Medic.	Uncommon [14]	6
Aralia nudicaulis L.	Common	4
Aralia racemosa L.	Uncommon	7
Arisaema triphyllum (L.) Schott	Common	5
Asclepias syriaca L.	Common	0
Aster lanceolatus Willd. (*s.str.*) (*A. simplex* Willd.; *Symphyotrichum lanceolatum* (Willd.) Nesom.)	Common	3
Aster lateriflorus (L.) Britt. (*Symphyotrichum lateriflorum* (L.) A. & D. Love)	Common	3
Aster novae-angliae L.. (*Virgulus novae-angliae* (L.) Rev. & Keen)	Common	2
Aster puniceus L.	Common	6
Athyrium filix-femina (L.) Roth var. *angustum* (Willd.) Lawson	Common	4
Betula alleghaniensis Britt.	Common	6
Betula papyrifera Marsh.	Common	2
Betula populifolia Marsh.	Common (local)	5

Bidens cernuus L.	Common	2
Bidens frondosus L.	Common	3
Carex blanda Dew.	Common	3
Carex communis Bailey	Common	6
Carex deweyana Schw.	Common	6
Carex hystericina Willd.	Common	4
Carex scabrata Schw.	Uncommon	8
Carex stipata Willd.	Common	3
Caulophyllum giganteum (Farw.) Loc. & Black. (*C. thalictroides var. giganteum* Farw.)	Common	6
Chelone glabra L.	Uncommon	7
Circaea lutetiana L. ssp. *canadensis* (L.) Asch. & Magnus	Common	3
Clematis virginiana L.	Common	5
Clintonia borealis (Ait.) Raf.	Common	7
Conyza canadensis (L.) Cronq.	Common	0
Cornus alternifolia L.f.	Common	6
Cornus rugosa Lam.	Common	6
Cornus sericea L. (*C. stolonifera* Michx.)	Common	2
Corylus cornuta Marsh.	Common	5
Cystopteris bulbifera (L.) Bernh.	Common	5
Doellingeria umbellata (Mill) Nees (= *Aster umbellatus* Mill.)	Common	6
Dryopteris carthusiana (Vill.) Fuchs (*D. spinulosa* (Muell.) Watt)	Common	5
Dryopteris cristata (L.) A. Gray	Uncommon	7
Dryopteris intermedia (Muhl.) A. Gray	Common	5
Elymus virginicus L.	Common	5
Epilobium ciliatum Raf. (*s.str.*) (*E. adenocaulon* Haussk.; *E. glandulosum*, auct.)	Common	3
Equisetum arvense L.	Common	0
Equisetum scirpoides Michx.	Common	7
Erigeron annuus (L.) Pers.	Common	0
Eupatorium maculatum L.	Common	3
Euthamia graminifolia (L.) Nutt. (*Solidago graminifolia* (L.) Salisb.)	Common	2
Fagus grandifolia Ehrh.	Common	6

Fragaria virginiana Duchesne	Common	2
Fraxinus nigra Marsh.	Common	7
Fraxinus pennsylvanica Marsh.	Common	3
Galium tinctorium L.	Uncommon [11]	5
Galium trifidum L.	Uncommon	5
Glyceria grandis S. Wats.	Common	5
Glyceria striata (Lam.) A. Hitchc.	Common	3
Gymnocarpium dryopteris (L.) Newm.	Common	7
Impatiens capensis Meerb.	Common	4
Juncus effusus L. (*s.str.*)	Common	4
Leersia oryzoides (L.) Sw.	Common	3
Lemna minor L.	Common	2
Lilium philadephicum L.	Uncommon	8
Lonicera canadensis Bart. ex Marsh.	Common	6
Ludwigia palustris (L.) Ell.	Common	5
Lysimachia ciliata L.	Common	4
Maianthemum racemosum (L.) Link (*Smilacina racemosa* (L.) Desf.)	Common	4
Matteuccia struthiopteris (L.) Todaro	Common	5
Mitella diphylla L.	Common	5
Muhlenbergia mexicana (L.) Trin.	Common	1
Oenothera biennis L.	Common ? [taxonomic problem]	0
Onoclea sensibilis L.	Common	4
Osmunda cinnamomea L.	Common	7
Osmunda regalis L.	Common	7
Oxalis stricta L. (*O. europea* Jord.; *O. fontana* Bunge)	Common	0
Parthenocissus vitacea (Knerr) Hitchc.	Common	3
Phegopteris connectilis (Michx.) Watt	Common (local)	8
Phryma leptostachya L.	Uncommon	6
Physalis heterophylla Nees	Common	3
Picea glauca (Moench) Voss	Common	6
Pinus strobus L.	Common	4
Poa palustris L.	Common	5

Polygonatum pubescens (Willd.) Pursh	Common	5
Populus balsamifera L.	Common	4
Populus deltoides Marsh.	Common	4
Populus tremuloides Michx.	Common	2
Prunus pensylvanica L.f.	Common	3
Prunus serotina Ehrh.	Common	3
Pteridium aquilinum (L.) Kuhn var. *latiusculum* (Desv.) Underw.	Common	2
Pyrola elliptica Nutt.	Common	5
Quercus macrocarpa Michx.	Common	5
Quercus rubra L.	Common	6
Ranunculus abortivus L.	Common	2
Ranunculus pensylvanicus L.f.	Uncommon	3
Rhus hirta (L.) Sudworth (*R. typhina* L.)	Common	1
Ribes americanum Mill.	Common	4
Ribes hirtellum Michx.	Uncommon	6
Rubus allegheniensis Porter	Common	2
Rubus odoratus L.	Common	3
Rubus pubescens Raf.	Common	4
Rubus strigosus Michx. (*R. idaeus* L. var. *strigosus* (Michx.) Max.)	Common	0
Sagittaria latifolia Willd.	Common	4
Salix bebbiana Sarg.	Common	4
Salix discolor L.	Common	3
Salix nigra Marsh.	Uncommon	6
Salix petiolaris Sm.	Common	3
Sambucus racemosa L. ssp. *pubens* (Michx.) House (*S. pubens* Michx.)	Common	5
Solidago canadensis L.	Common	1
Solidago rugosa Mill.	Common	4
Taxus canadensis Marsh.	Common	7
Thelypteris palustris (Salisb.) Schott	Common	5
Thuja occidentalis L.	Common	4
Tiarella cordifolia L.	Common	6

Tilia americana L.	Common	4
Toxicodendron rydbergii (Rydb.) Greene (*Rhus radicans* L. var. *rydbergii* (Sm.) McNeill)	Common	0
Trientalis borealis Raf.	Common	6
Trillium erectum L.	Common	6
Tsuga canadensis L.	Common	7
Typha latifolia L.	Common	3
Ulmus americana L.	Common	3
Urtica dioica L. ssp. *gracilis* (Ait.) Selander	Common	2
Viola pubescens Ait. (incl. *V. eriocarpa* Schwein.)	Common	5
Viola sororia Willd. (*s.str.*) (= *V. septentionalis*, auct.)	Common	4
Vitis riparia Michx.	Common	0
Waldsteinia fragarioides (Michx.) Tratt.	Common	5
	CC Aggregate:	552

Total Species	Regionally Significant (incl. Regionally uncommon)	High CC (>6)	Co-efficient of Conservation (average)	EI rating
132	2	15	4.17	High

b) Fauna observed:

n/a

Appendix F Summary of SWH presence on and within 120 m of the Site and residual impact of development

Significant Wildlife Habitat	Presence on the Site	Presence within 120 m of the Site	Residual Impact
Waterfowl Stopover and Staging Areas (Terrestrial)	X	X	-
Waterfowl Stopover and Staging Areas (Aquatic)	X	**P**	-
Shorebird Migratory Stopover Area	X	X	-
Raptor Wintering Area	X	X	-
Bat Hibernacula	X	X	-
Bat Maternity Colonies	**P**	**P**	A portion of the mature Sugar Maple forest will be removed outside of the bat roosting season. This will result in a loss of habitat.
Turtle Wintering Areas	X	**P**	-
Reptile Hibernaculum	X	X	-
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)	X	X	-
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	X	X	-
Colonially - Nesting Bird Breeding Habitat (Ground)	X	X	-
Migratory Butterfly Stopover Areas	X	X	-
Landbird Migratory Stopover Areas	X	X	-
Deer Yarding Areas	X	X	-
Deer Winter Congregation Areas	X	X	-
Cliffs and Talus Slopes	X	X	-
Sand Barren	X	X	-
Alvar	X	X	-
Old Growth Forest	X	X	-
Savannah	X	X	-
Tallgrass Prairie	X	X	-
Other Rare Vegetation Communities	X	X	-
Waterfowl Nesting Area	X	X	-
Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat	**P**	**P**	If the Site contains Bald Eagle and/or Osprey nests they would likely be located close to the Rideau River, and therefore would be undisturbed. During the 2023 field surveys Bald Eagle and Osprey nests will be searched for. Trees should not be removed prior to surveys.

Significant Wildlife Habitat	Presence on the Site	Presence within 120 m of the Site	Residual Impact
Woodland Raptor Nesting Habitat	X	X	-
Turtle Nesting Areas	**P**	**P**	None, with mitigation
Seeps and Springs	X	X	-
Amphibian Breeding Habitat (Woodland)	X	X	-
Amphibian Breeding Habitat (Wetlands)	X	X	-
Woodland Area-Sensitive Bird Breeding Habitat	X	X	-
Marsh Breeding Bird Habitat	X	X	-
Open Country Bird Breeding Habitat	X	X	-
Shrub/Early Successional Bird Breeding Habitat	X	X	-
Terrestrial Crayfish	X	X	-
Special Concern and Rare Wildlife Species	**P**	**P**	Proposed vegetation clearing is anticipated to alter potential habitat on-site; however, suitable habitat also exists elsewhere within the vicinity of the Site.
Amphibian Movement Corridors	X	X	-
Deer Movement Corridors	X	X	-

X = Suitable SAR habitat is not present.
P = Suitable habitat is potentially present.
C = Suitable SAR habitat is present (confirmed).