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Environmental Impact Statement
Plan of Subdivision
124 Fourth Avenue
Arnprior
County of Renfrew

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Submitted to:

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Environmental Impact Statement
Plan of Subdivision
124 Fourth Avenue
Arnprior
County of Renfrew

September 7, 2021
Project: 101044.001

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EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by 2809981 Ontario Inc. to complete an Environmental Impact Statement (EIS) for the property located Part of Lot 3, Concession D, in the Geographic Township of McNab, municipally addressed as 124 Fourth Avenue, Arnrpior, Ontario. The proponent is seeking final approval for a plan of subdivision for the development of 115 lot residential subdivision on a vacant, approximately 5 ha urban site in the town of Arnprior. This EIS has been completed in support of the proposed development and was completed in accordance with all federal, provincial and municipal policies and guidelines, as applicable.

In support of this EIS a desktop review and a single field investigation were completed to identify the presence or absence of natural heritage features and species at risk (SAR) on-site. The field investigation was completed in July, 2021. The focus of the site investigation was to describe, in general, the natural and physical setting of the subject property with a focus on confirming the presence or absence of natural heritage features and potential SAR or their habitat as identified in the desktop review.

Following completion of the desktop review and site investigation the following natural heritage features were identified on-site or within the study area: a local wetland. The following SAR and their habitat were identified as having a potential to occur on-site: eastern small-foot myotis, little brown myotis, tri-colored bat, and chimney swift.

Potential impacts to the natural heritage features were primarily associated with the loss of forest habitat. Impacts to the local wetland are not anticipated considering the distance between the wetland and the subject property, as well as the residential properties situated between them. Direct impacts to the woodlands are associated with vegetation clearing and grading of land. The cumulative loss and impact to overall function of the woodlands was determined to be minimal.

Should any SAR be discovered throughout the course of the proposed works, operations should stop and the species at risk biologist with the local MECP district should be contacted immediately for further direction. Furthermore, to ensure compliance with all applicable legislation, all best management practices and adherence to vegetation clearing windows for birds and bats, as outlined in Section 7, should be followed to ensure no negative impacts occur to natural heritage features on-site.

The proposed project complies with the natural heritage policies of the Provincial Policy Statement and the County of Renfrew Official Plan. No negative impacts to identified natural heritage features or their ecological functions are anticipated as a result of the proposed development as long as all mitigation measures in Section 7 are enacted and best management practices followed.

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1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by 2809981 Ontario Inc. to carry out an Environmental Impact Statement (EIS) for the property located on Part of Lot 3, Concession D, in the Geographic Township of McNab, municipally addressed as 124 Fourth Avenue, Arnrpior, Ontario (hereafter referred to as “the subject property”). The general location of the subject property is illustrated on Figure A.1 in Appendix A.

1.1 Purpose

The proponent is seeking final approval for a plan of subdivision application for the approximately 5 ha vacant property located between Fourth Avenue and Seventh Avenue, in the town of Arnprior.

Based on Section D of the Town of Arnprior Official Plan (Arnprior, 2017) an EIS is required showing that the proposed project will not negatively impact any potential natural heritage features which may be present within the study area. The study area is defined as the property boundary and potential future lands assessed, and the adjacent lands encompassing an area of 120 m beyond the property boundary. The subject project and the extents of the study area are illustrated on Figure A.2.

1.2 Objective

The 2020 Provincial Policy Statement (MMAH, 2020) issued under Section 3 of the Planning Act states that “development and site alteration shall not be permitted in: habitats of species at risk, significant wetlands, significant woodlands and significant wildlife habitat unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.” Similarly, the 2020 Provincial Policy Statement dictates that ‘development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.”

The objective of the work presented herein is twofold; 1) to identify and evaluate the significance of any natural heritage features, as defined in the Provincial Policy Statement (MMAH, 2020), on the subject property and within the broader study area and; 2) to assess the potential impacts from the proposed plan of subdivision on any natural heritage features identified and to recommend appropriate and defensible mitigation measures to ensure the long-term protection of any natural heritage features identified.

To meet these objectives, the EIS presented herein has been completed in accordance with the following provincial and municipal regulations, policies and guidelines:

- Provincial Policy Statement (MMAH, 2020);
- Endangered Species Act (Ontario, 2007);
- Natural Heritage Reference Manual (OMNR, 2010); and

- Town of Arnprior Official Plan (Arnprior, 2017).

1.3 Physical Setting

The subject property is located on part of Lot 3, Concession D in the Geographic Township of McNab, County of Renfrew, and is comprised of mixed deciduous coniferous woodlands, deciduous thickets, parkland, open meadows and a vacant parking lot. The subject property is bound to the north by residential properties on Seventh Avenue, and to the south by residential properties on Fourth Avenue. To the east, the site is bound by a single industrial building and to the west by residential properties along Riverview Drive.

1.4 Land Use Context

The subject property is situated within a mostly residential area with the Town of Arnrprior. The existing land use designation from the Town of Arnprior Official Plan is low-medium density residential.

2.0 METHODOLOGY

2.1 Desktop Review

A desktop information gathering exercise was completed to aid in the scoping of the field investigation and to gather information relating to natural heritage features which may be present on the subject project or within 1 km of the subject property. An additional component of the desktop review was to assess the potential presence of SAR to occur on the subject property or within the study boundary based on a review of publicly accessible occurrence records, and review of SAR habitat requirements and range maps.

Information regarding the potential presence of natural heritage features and SAR within the vicinity of the site was obtained from the following sources:

- Make A Map: Natural Heritage Areas (OMNRF, 2014a);
- Land Information Ontario (OMNR, 2011b);
- County of Renfrew Official Plan (Renfrew, 2020);
- County of Renfew GeoPortal (undated);
- Town of Arnprior OP (2017);
- Ontario Geological Survey (OGS, 2019);
- Fisheries and Oceans Canada SAR Maps (DFO, 2019);
- Natural Heritage Information Centre Biodiversity Explorer (OMNRF, 2013);
- Breeding Bird Atlas of Ontario (Cadman et al., 2007);
- Ontario Herpetofaunal Atlas (Oldham and Weller, 2000);
- Wildlife Values Area (OMNRF, 2020a);
- Wildlife Values Site (OMNRF, 2020b); and
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019).

2.2 Field Investigations

A single field investigation was undertaken to describe in general, the natural and physical setting of the subject property with a focus on natural heritage features and to identify any potential SAR or their habitat that may exist at the subject property.

The field investigation completed in support of this EIS is outlined in Table 2.1 below. Photographs of site features taken during the field investigation is provided in Appendix B.

Table 2.1 Summary of Field Investigations

Date	Time	Weather	Purpose
July 8, 2021	11:00 – 14:30	15°C, overcast, Beaufort 3, with light intermittent rain	Ecological Land Classification

2.2.1 Previous Work

A field visit was undertaken on February 18, 2021, in support of an EIS for the eastern adjacent property. This field visit revealed the presence of numerous putative butternut trees, which are listed as an endangered SAR.

Following identification of putative butternut trees, a follow-up site investigation was undertaken on March 16, 2021, to gather genetic material from putative butternut trees for submission to Precision Biomonitoring Inc. for DNA extraction. DNA extraction was undertaken to determine if putative butternut trees are pure butternut (*Juglans cinerea*) or hybridizations between butternut and other species of the *Juglans* family (black walnut, japanesse walnut, etc.).

2.2.2 Ecological Land Classification

Vegetation communities on the subject property were delineated during the desktop review stage of this EIS using publicly available air photos and confirmed in the field on July 8, 2021, following the Ecological Land Classification System for Southern Ontario (Lee et al., 2008). Vegetation communities were confirmed in the field by employing the random meander methodology while documenting dominant vegetation species within the various vegetation community forms.

2.3 Data Analysis

An evaluation of the significance of natural heritage features, the sensitivity of identified flora and fauna and the potential impacts posed by the proposed development was undertaken through an analysis of desktop and field investigation data using the approaches and criteria outlined in the following documents:

- Natural Heritage Reference Manual (OMNR, 2010);
- Significant Wildlife Habitat Technical Guide (OMNR, 2000);
- Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015); and
- Significant Wildlife Habitat Mitigation Support Tool (OMNRF, 2014b).

3.0 EXISTING ENVIRONMENT

3.1 Ecoregion

The site is situated in Ecoregion 6E-16 (Lake Simcoe-Rideau), which extends from Lake Huron in the west to the Ottawa River in the east. The climate of Ecoregion 6E is categorized as humid, high to moderate temperate ecoclimate with a mean annual temperature range between 4.9°C to 7.8°C with annual precipitation ranging between 759 mm to 1,087 mm (Crins et al., 2009).

The eastern portion of the Ecoregion, which the subject property is located, is underlain by glaciomarine deposits as a result of the brief post-glacial incursion of salt water from the Champlain Sean along the St. Lawrence Valley. This Ecoregion falls with Rowe's (1972) Great Lakes-St. Lawrence Forest Region, including its Huron-Ontario and Upper St. Lawrence sections, and a small part of the Middle Ottawa Forest section (Crins et al., 2009).

3.2 Landforms, Soils and Bedrock Geology

The topography of the site is relatively flat with a gentle slope from south to north. The site has a topographical high of 84 mASL in the southern side of the property and a topographical low of 82 mASL in the northern side of the subject property, gently sloping northwards towards the Ottawa River.

Two topographical landforms, as mapped by Chapman and Putman (1984) are described on site: shallow till and rock ridges in the northern half of the subject property and sand plains in the southern half of the subject property.

The Ontario Geological Survey (OGS, 2019) identifies a single surficial soil unit on the property: fine-textured glaciomarine deposits with silt and clay, minor sand and gravel, massive to well laminated.

Bedrock at the site, as mapped by the Ontario Geological Survey (OGS, 2019), is comprised of the Grenville Supergroup and Flinton Group, consisting of carbonate metasedimentary rocks marble, calc-silicate rocks, skarn, and tectonic breccias.

3.3 Surface Water, Groundwater and Fish Habitat

Surface water features on the subject property were limited to small, low-laying, sporadically located wet inclusion areas. These wet inclusion areas likely serve as a focal low drainage point for the immediate surrounding surface runoff during spring freshet and precipitation events. Water was not observed within the wet inclusion areas during the site investigation.

No wetlands, watercourses, drainages, or indication of water flow was observed anywhere on-site.

Groundwater investigations were not completed in support of this EIS.

As surface water is not present on-site, surface water, ground water and fish habitat are no longer discussed within this EIS.

3.4 Vegetation Communities

Vegetation communities on-site were confirmed by GEMTEC in 2021, following protocols utilized in the Southern Ontario Ecological Land Classification System (Lee et al., 2008). Vegetation at the site represents a mosaic of mixed deciduous coniferous woodlands, and densely vegetated thickets and understories. Table 3.1 below provides a summary of the various vegetation communities identified on-site while Figure A.3 in Appendix A provides an illustration of the various vegetation communities.

Table 3.1 Vegetation Communities On-site

ELC Type	Description	Size (ha)
Dry – Fresh Poplar Deciduous Forest Type (FODM3-1)	The treed vegetation community is found through the majority of the site and was dominated by successional young trembling aspen (*Populus tremuloides*). Others include white birch (*Betula papyrifera*), white pine (*Pinus strobus),* white ash (*Fraxinus americana),* black ash (*Fraxinus nigra),* sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), balsam poplar (*Populus balsamifera*), large tooth aspen (*Populus grandidentata*), Japanese walnut (*Juglans ailantifolia*) and black walnut (*Juglans nigra*). Mature specimens of trembling aspen and white pine were identified within the community. Some evidence of low wet inclusion areas were present, as evident by red maple, black ash, red osier dogwood (*Cornus sericea)*, and fern species (*Tracheophyta sp*.). Herbaceous growth consisted of wild grape (*Vitis vinifera*), Virginia creeper (*Parthenocissus quinquefolia*), poison ivy (*Toxicodendron radicans*), and brambles (*Rubus sp.*).	2.78
Dry - Fresh Deciduous Regeneration Thicket Ecosite (THDM4-1)	This community was present in the western half of the subject property, spanning from the near the southern extends to the northern extent. This thicket was dominated by trembling aspen, followed by staghorn sumac (*Rhus typhina*). Other species include red maple, silver maple (*Acer saccharinum*), amur maple (*Acer ginnala*), red oak (*Quercus rubra*), willow (*Salix sp.*), red osier dogwood, large tooth aspen, and European buckthorn (*Rhamnus cathartica*).	0.79

ELC Type	Description	Size (ha)
	Herbaceous growth consisted of goldenrod (*Solidago sp.*), Virginia creeper, wild grape, grasses (*Poaceae sp*.), vetch (*Vicia cracca*), sedges (*Cyperaceae sp*.) and thistles (*Cirsium sp.).*	
Parkland (CGL_2)	This community consisted solely of manicured lawns.	0.40
Dry - Fresh Mixed Meadow Ecosite (MEMM3)	This disturbed open area consisted mostly of grasses and goldenrod. Other herbaceous vegetation included species commonly associated with disturbed open area: milkweed (*Asclepias syriaca*), Queen Anne's Lace (*Daucus carota*), brambles (*Rubus sp.*), staghorn sumac, vetch, and clover (Trifolium pratense). Some tree samplings of American elm (*Ulnus americana*), white ash, and Manitoba maple (*Acer negundo*) were also present.	0.79
Transportation – Parking Lot (CVI_1)	This community consisted of exposed concrete, liking serving as an old parking area. Some vegetation was present, and consisted of species which are common of disturbed areas with shallow soils: ragweed *(Ambrosia artemisiifolia*), dandelion (*Taraxacum officinale*), clover, and some thin grasses.	0.40

3.5 Wildlife

Wildlife observed on-site and within the study area during field investigations completed in 2021 are summarized in Table C.1 in Appendix C.

4.0 NATURAL HERITAGE FEATURES

Natural heritage features are defined in the PPS as “features and area, including *significant wetlands, significant coastal wetlands, fish habitat, significant woodlands* south and east of the Canadian Shield, *significant valleylands* south and east of the Canadian shield, *habitats of endangered species and threatened species, significant wildlife habitat* and *significant areas of natural and scientific interest*, which are important for their environmental and social values as a legacy of the natural landscape of an area”.

4.1 Significant and Local Wetlands

As described in the Natural Heritage Reference Manual (OMNR, 2010), wetlands mean “lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface.” While *significant* in regards to wetlands means “an area identified as provincially significant by the Ontario Ministry of Natural Resources and Forestry using evaluation procedures established by the Province, as amended from time to time.”

No provincially significant wetlands were identified on-site; as such PSWs are not discussed or evaluated further in this EIS.

A single local unevaluated wetland has been identified within the study area, approximately 120 m north of the subject property. This wetland was not investigated during the field investigation. Aerial imagery shows the local wetland to surround by residential developments and park land, with a single roadway and two rows of residential homes between the wetland and the subject property. As such, impacts to the wetland are not anticipated as a result of this development.

As such wetlands are not discussed or evaluated further in this EIS.

4.2 Significant Woodlands

Significant woodlands are defined in the natural heritage reference manual (OMNR, 2010) as “an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history.”

At the local scale, significant woodlands are defined and designated by the local planning authority. Generally, most planning authorities have defined significant woodlands as any woodland that contains any of the four criteria listed in Section 7.2 of the natural heritage reference manual (OMNR, 2010), including: woodland size, ecological functions, uncommon characteristics and economic and social functional values.

As discussed in Section 3.4 above, the site is mostly comprised of forested vegetation communities. However, a review of Table C.2 in Appendix C indicates that the on-site forest communities do not meet defining criteria and are therefore not considered significant.

As such significant woodlands are not discussed or evaluated further in this EIS.

4.3 Significant Valleylands

Valleylands are defined in the natural heritage reference manual (OMNR, 2010) as 'a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of time". The identification and evaluation of significant valleys lands in Ontario is based on the recommended criteria from the MNRF and is the responsibility of local planning authorities.

In Southern Ontario, conservation authorities have identified valleylands as part of their regulation mapping (i.e., floodplain mapping); however, where valleys lands have not been defined, their physical boundaries are generally determined as the 'top-of-bank' or 'top-of-slope' associated with a watercourse. For less well-defined valleys, the physical boundary may be defined by riparian vegetation, flooding hazard limits, ordinary high water marks or the width of the stream meander belt (OMNR, 2010).

As discussed in Section 3.2, no valleylands have been identified on-site, as such valleylands are not discussed or evaluated further in this EIS.

4.4 Significant Areas of Natural and Scientific Interest

The MNRF identifies two types of areas of natural and scientific interest (ANSI) in Ontario: life sciences ANSIs typically represent significant segments of Ontario's biodiversity and natural landscapes, while earth science ANSIs typically represent significant examples of bedrock, fossils or landforms in Ontario (OMNR, 2010).

No ANSI have been identified on-site or adjacent to the site during the desktop review or during site investigations. Therefore, ANSI are not discussed or evaluated further in this EIS.

4.5 Significant Wildlife Habitat

The natural heritage reference manual (OMNR, 2010), in combination with the significant wildlife habitat technical guide (OMNR, 2000) and the significant wildlife habitat ecoregion criterion schedules (OMNRF, 2015) were used to identify and evaluated potential significant wildlife habitat on-site. The significant wildlife habitat is broadly categorized as habitats of seasonal concentration areas of animals, rare vegetation communities, specialized habitats for wildlife, habitats of species of conservation concern and animal movement corridors. With the exception of rare vegetation communities, Tables C.3, C.4, C.5 and C.6 in Appendix C, provide the screening rationale for each category of significant wildlife habitat, respectively.

4.5.1 Habitats of Seasonal Concentrations of Animals

Seasonal concentration areas are habitats where large numbers of species congregate at one particular time of the year. The significant wildlife habitat technical guides (OMNR, 2000) and significant wildlife habitat ecoregion criterion schedules (OMNRF, 2015) identify 12 types of seasonal concentration habitats that may be considered significant wildlife habitat. These 12 types of seasonal habitat are presented in Table C.3 in Appendix C, including a brief description of the rationale as to why or why they are not assessed further in this EIS.

Following review of Table C.3 in Appendix C, no *candidate* habitats of seasonal concentration of animals are present within the study area. As such, habitats of seasonal concentration of animals are not discussed or evaluated further in this EIS.

4.5.2 Rare Vegetation Communities

Rare vegetation communities in the province are described generally as those with an S1 to S3 ranking by the NHIC, and typically include communities such as sand barrens, alvars, old growth forests, savannahs and tallgrass prairies.

The vegetation communities identified on-site and described in Section 3.4 of this report are not ranked by the NHIC as S1, S2 or S3 and are therefore not considered to be rare vegetation communities. As such, rare vegetation communities are not discussed or evaluated further in this EIS.

4.5.3 Specialized Habitats for Wildlife

Specialized wildlife habitats are microhabitats that provide a critical resource to some groups of wildlife. The significant wildlife habitat technical guide (OMNR, 2000), defines eight specialized habitats that may constitute significant wildlife habitat, these eight types of specialized wild habitat are evaluated in Table C.4 in Appendix C.

Following review of Table C.4 in Appendix C, no specialized habitats for wildlife are present within the broader study area. As such, specialized habitats for wildlife are not discussed or evaluated further in this EIS.

4.5.4 Habitats of Species of Conservation Concern

Provincial rankings are used by the Natural Heritage Information Centre to set protection priorities for rare species, similar to those described in Section 4.5.2 above for vegetation communities. Provincial rankings (S-ranks), are not legal designations such as those used to define the various protection statuses of species at risk, they are only intended to consider factors within the political boundaries of Ontario that might influence a particular species abundance, distribution or population trend.

Based on the guidance provided in the Significant Wildlife Habitat Ecoregion Criterion Schedules (MNRF, 2015), when a plant or animal element occurrence is recorded for any species with an S-

rank of S1 (extremely rare), S2 (very rare), S3 (rare to uncommon) or SH (historically present), the corresponding vegetation ecosite is considered to provide *candidate* habitat for species of conservation concern and further consideration within the EIS is warranted.

The Significant Wildlife Habitat Ecoregion Criterion Schedules (OMNRF, 2015), provides five general habitat types known to support a wide range of species of conservation concern in Ontario. The five general habitat types for Ecoregion 6E-11 are provided in Table C.5 in Appendix C, including a brief rationale as to why they are or are not considered further in this EIS. Following review of Table C.5 in Appendix C, no habitats of species of conservation concern have been identified on-site or broader study area. As such, habitats of species of conservation concern are not discussed or evaluated further in this EIS.

4.6 Animal Movement Corridors

Animal movement corridors are elongated areas used by wildlife to move from one habitat to another and allow for the seasonal migration of animals (OMNRF, 2015). The Significant Wildlife Habitat Ecoregion Criterion Schedules for Ecoregion 6E-11 (OMNRF, 2015), identifies two types of animal movement corridor: amphibian movement corridors and deer movement corridors. Following review of Table C.6 in Appendix C, no *candidate* animal movement corridor has been identified on-site.

As per guidance presented in the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (OMNRF, 2015), deer movement corridors should only be identified as significant wildlife habitat when a *confirmed or candidate* significant wildlife habitat has been identified by the MNRF district office or by the regional planning authority (UCPR Official Plan).

The MNRF has not identified any deer movement corridors on the publicly available data sets for wildlife values area (OMNRF, 2020a) or wildlife values site (OMNRF, 2020b). As such, deer movement corridors are not discussed or evaluated further in this EIS.

4.7 Species at Risk

The probability of occurrence for species at risk to occur on-site and within the broader study area was determined through the desktop review stage of this EIS, as described in Section 2.1, and through the site-specific surveys conducted as part of this EIS, outlined in Section 2.2.

Table C.7 in Appendix C, provides a summary of all species at risk which were determined to have the potential to occur on-site or within the broader study area, their protection status under the provincial Endangered Species Act (Ontario, 2007), their regional distribution, their probability of occurrence and a brief rationale of that probability. Impacts to endangered or threatened SAR determined to have a moderate or high potential to occur on-site or within the broader study area are discussed further in the Section 6.3.

4.7.1 Butternut Genetic Testing

As discussed in Section 2.2, genetic testing of putative butternut trees were conducted for the eastern adjacent property.

Based on observation of putative butternut trees on the eastern adjacent property during the February 18, 2021, site investigation, a follow-up site investigation was completed on March 16, 2021, to gather genetic material from putative butternut trees for submission to Precision Biomonitoring Inc. for DNA extraction. DNA extraction was undertaken to determine if putative butternut trees are pure butternut (*Juglans cinerea*) or hybridizations between butternut and other species of the *Juglans* family (black walnut, japanesse walnut, etc.).

A total of eight voucher samples from eight putative butternut trees on-site were collected and submitted for laboratory genetic analysis. All of the voucher samples showed signs of non-butternut genomic integration into a pure butternut genome. Accordingly, all non-butternut characteristic alleles fell under the expected variation observed in wild population of Japanese Walnut.

The woodlands on the eastern adjacent property are continuous with the woodlands on the subject property, displaying similar vegetation communities, topography, and physical characteristics. Based on this, it is reasonable to assume that *Cinera sp.* trees identified on the subject property are also Japanese walnut.

No butternut (*Juglans cinerea*) have been identified on-site.

5.0 PROPOSED PROJECT

The proposed project assessed for potential impacts on the natural heritage features determined to be present within the broader study area is a proposal for the development of a vacant property for an approximately 5 ha urban residential infill project, on part of Lot 3, Concession D, in the Geographic Township of McNab, municipally addressed as 124 Fourth Avenue, Arnrpior, Ontario.

The proposed plan of subdivision includes the creation of 115 residential lots and publically accessible recreational parklands, with access from Fourth Avenue. The proposed project also includes a storm water management plan (SWMP), consisting of an underground detention area where it will then slowly released to the municipal storm infrastructure. This SWMP will provide quantity and quality control for up to the 1:100 year storm event.

Future components of the proposed project considered in the impact assessment presented in Section 6 include: vegetation grubbing, fill placement and elevation grading, excavation and pouring of foundations, construction of a recreational structures and general landscaping activities.

The timeline for the proposed project, from lot clearing of vegetation to completion of infill structures is currently unknown. For the purpose of assessing impacts to natural heritage features, it is assumed in this EIS that the project will be phased over multiple years.

6.0 IMPACT ASSESSMENT

Potential impacts to natural heritage features on-site and within the broader study area are assessed for direct, indirect and cumulative effects based on the proposed project outlined in Section 5. Natural heritage features identified in Section 5 of this report as present or likely to be present are discussed in the subsections below.

Potential effects to the natural environment from the proposed development outlined in Section 5 include: loss of woodland habitat, habitat fragmentation, disturbance of the natural soil mantle, increased noise generation, increased human disturbance, increase storm water generation and potentially increased nutrient loading to down gradient water features.

6.1 Species at Risk

As outlined in the Endangered Species Act (Ontario, 2007), only species listed as threatened or endangered and their general habitat receive automatic protection. When a species-specific recovery strategy is developed, a specific habitat regulation will be established, which eventually replaces the automatic habitat protection. Species of special concern and their habitat do not receive protection under the ESA.

Potential impacts associated with the proposed project to threatened or endangered species identified as having a moderate or high potential to occur on-site in Section 4.7, are discussed on a species-by-species basis in subsections below.

6.1.1 Eastern Small-footed Myotis

Eastern small-footed Myotis (*Myotis leibii*) is the smallest (typically 3-5 g), insectivorous bat found in Ontario. The fur of an eastern small-footed Myotis is golden-brown in colour, with a distinct black mask across the face. The eastern small-footed Myotis is very similar in appearance to the little brown Myotis, and is distinguishable by their small foot and keeled calcar (Fraser, MacKenzie & Davy, 2007).

The eastern small-footed Myotis is found throughout eastern North America. In Ontario the species has been observed in the areas sough of Lake Superior across to the Ontario-Quebec border (Humphrey, 2017).

Eastern small-footed Myotis overwinter primarily in caves and abandoned mines with low humidity and temperatures and stable microclimates (Humphrey, 2017). In comparison to other Ontario bat species, they are able to tolerate much colder temperatures, drier conditions and draftier locations for hibernating (Humphrey, 2017). During the spring and summer months, they utilize a variety of habitats for roosting, including under rocks or rock outcrops, in buildings, under bridges, or in caves, mines or hollow trees (Ontario, 2019b).

Although the forest habitat on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for eastern small-footed Myotis to occur on the property, primarily for foraging or non-maternal roosting. Impacts to eastern small-footed Myotis are primarily associated with habitat loss, encroachment and increased wildlife-human interaction. Mitigation measures intended to protect eastern small-footed Myotis from impacts of the proposed development are discussed in Section 7.

6.1.2 Little Brown Myotis

Little brown Myotis (*Myotis lucifugus*) is a small (typically 4-11 g), insectivorous bat. The fur of a little brown Myotis is bi-coloured; fur is a glossy brown with a darker coloured base. The tragus of the Little Brown Myotis is long and thin, with a rounded tip (Fraser, MacKenzie & Davy, 2007).

In Canada, little brown Myotis' occur throughout all of the provinces and territories (except Nunavut), with its range extending south through the majority of the United States as well. In Ontario, the little brown Myotis is widespread in southern Ontario and has been found as far north as Moose Factory and Favourable Lake (Ontario, 2019c).

Little brown Myotis overwinter in caves and abandoned mines, they require highly humid conditions and temperatures that remain above the freezing mark (Ontario, 2019c). During the summer months, maternity colonies are often located in buildings or large-diameter trees. Little brown Myotis roost in trees and buildings. Foraging occurs over water and along waterways, forest edges and in gaps in the forest. Open fields and clearcuts are not typically utilized for foraging (COSEWIC, 2013).

Although the forest habitat on-site does not meet the requirements to support bat maternity colonies, given the availability of habitat and buildings on-site and within the study area, there is a potential for little brown Myotis to occur on the property, primarily for foraging or non-maternal roosting. Impacts to little brown Myotis are primarily associated with habitat loss, encroachment and increased wildlife-human interaction.

Mitigation measures intended to protect little brown Myotis from impacts of the proposed development are discussed in Section 7.

6.1.3 Tri-Colored Bat

Tri-colored bat (*Perimyotis subflavos*) is a small (typically 5-7 g), insectivorous bat. The fur is uniformly coloured on the ventral and dorsal sides, however when parted fur shows three distinct colour bands. The base of the hair is blackish, with a blonde middle and brownish tip. The snout of the tri-coloured bat is also distinct, with swollen bulbous glands present (Fraser, MacKenzie & Davy, 2007).

In Canada, the tri-colored bat has only been recorded in southern parts of Nova Scotia, New Brunswick, Quebec and central Ontario. In Ontario it occurs primarily from the southern edge of Lake Superior across to the Ontario-Quebec border and south (COSEWIC, 2013).

Tri-colored bat overwinter in in caves or mines, and have very rigid habitat requirements; they typically roosting the deepest parts where temperatures are the least variable, and have the strongest correlation with humidity levels and warmer temperatures (COSEWIC, 2013). In the spring and summer, tri-colored bat utilize trees, rock crevices and buildings for maternity colonies. Foraging is mainly done over watercourses and streamside vegetation (COSEWIC, 2013).

Although the woodlands on-site do not meet minimum snag density requirements to support bat maternity colony habitat, given the availability of habitat on-site there is a potential for tri-colored bat to occur on the property, primarily for foraging or non-maternal roosting. Impacts to tri-colored bat are primarily associated with habitat loss, encroachment and increased wildlife-human interaction. Mitigation measures intended to protect tri-colored bat from impacts of the proposed development are discussed in Section 7.

6.1.4 Chimney Swift

Chimney swift (*Chaetura pelagica*) is a small-sized, insectivorous bird with a slender body, long, narrow, pointed wings, and short spiny tail. When folded the wings extend beyond the tail. Chimney swifts have a dark brown plumage, except for the throat, which is paler (COSEWIC, 2007).

In Ontario, breeding bird survey data from 1968 to 2005 has demonstrated a decline in chimney swift populations of 8.9%. The breeding range of the chimney swift is restricted to eastern North America. In Canada, it breeds in the Maritimes, southern Quebec, southern Ontario, southern Manitoba and east-central Saskatchewan. In Ontario, the highest densities occur near shorelines of the Great Lakes, including the Golden Horseshoe, the north shore of Lake Erie and near Sault Ste. Marie. Lower densities of chimney swift occur in the southern part of the Algonquin, Haliburton, and Madawaska Highlands, as well as in the Rainy River area (Cadman et al., 2007).

Chimney swift nest and roost in chimneys, typically one pair nests per chimney. Chimney swift have also been documented to nest on walls, rafters, or gables of buildings (Cadman et al., 2007). Foraging usually occurs near water, where insects are abundant. In the northern breeding range, chimney swift look for sites with a relatively constant ambient temperature. (COSEWIC, 2007).

Chimney swift were not detected on-site nor within the broader study area during any of the site investigations. NHIC occurrence records indicates the presence of chimney swift within 1 km of the subject property. As the subject property does not possess suitable nesting or foraging habitat, historical occurrences are likely associated with the chimney stacks of the adjacent residential properties within the study area.

As the nature of the development is not anticipated to involve alterations to the residential properties, potential impacts to chimney swift are anticipated to be strictly indirect and minimal in nature. Impacts include: increased human-wildlife interaction, increased disturbances and noise levels during the clearing of vegetation and development processes.

Mitigation measures are provided in Section 7 for the protection of chimney swift.

6.2 Cumulative Impacts

Potential cumulative impacts associated with the proposed project include a minor increase in storm water generation and the potential loss of deciduous woodland habitat.

Cumulative impacts to the natural environment at the site due to increased human presence are expected to be negligible given the nature of the development; adjacent commercial building to the east, and residential properties surrounding the property in all other directions.

Cumulative impacts such as those listed above can be mitigated by implementing the proposed setbacks and recommended mitigation measures outlined in Section 7 below.

7.0 RECOMMENDED AVOIDANCE AND MITIGATION MEASURES

The following avoidance and mitigation measures have been recommended by GEMTEC in order to minimize or eliminate potential environmental impacts identified in Section 6. As such, the following avoidance and mitigation measures should be enforced throughout the development through application of Site Plan Controls.

7.1 Species at Risk

7.1.1 Eastern Small-footed Myotis, Little Brown Myotis, and Tri-Colored Bat

To protect roosting and foraging bats, tree removal where required should take place outside of the spring and summer active season (typically April 1 to September 30), when bats are more likely to be using forest habitat. If vegetation clearing must be conducted during the spring and summer timing window than a roost survey should be conducted be a qualified professional.

7.1.2 Chimney Swift

To limit chimney swift exposure to disturbances and elevated noise levels associated with the development, it is recommended that vegetation removal should occur outside the key breeding bird period (typically April 15 to August 15) as identified by Environment Canada for the protection of migratory birds and to avoid contravention of the Migratory Bird Convention Act.

7.2 Wildlife

The following avoidance and mitigation measures are provided in effort to minimize impacts to on-site and off-site wildlife:

- Vegetation removal should occur outside the key breeding bird period (typically April 15 to August 15) as identified by Environment Canada for the protection of migratory birds and to avoid contravention of the Migratory Bird Convention Act. If vegetation clearing activities must take place during the aforementioned timing window than a nest survey shall be conducted by a qualified professional.
- Installation of silt fence barriers around the entire construction envelope of each future residential dwelling to prohibit the emigration of wildlife into the construction area.
- Perform daily pre-work sweeps of the construction area to ensure no species at risk are present and to remove any wildlife from inside the construction area.
- Should any species at risk be discovered throughout the course of the proposed works, the species at risk biologist with the local MECP district should be contacted immediately and operations modified to avoid any negative impacts to species at risk or their habitat until further direction is provided by the MECP.

7.3 Best Practice Measures for Mitigation of Cumulative Impacts

The following best management practice measures are provided for the mitigation of cumulative impacts resulting from general construction and development activities;

- To protect trees identified to be retained during construction, the Critical Root Zone (CRZ) should be identified and fenced. The CRZ is defined as 10 cm from the base of the tree for every centimetre in diameter of the tree trunk measured at breast height.
- Consideration should be afforded to the retention of larger, mature tree specimens found on-site.
- Maintain as much permeable surface as possible in future development plans to minimize the generation of storm water runoff.
- Erosion and sediment control measures should be maintained until all disturbed ground has been permanently stabilized.
- In effort to offset the effect of vegetation clearing, consideration should be given to landscape planting with native tree species indicative of the Great Lakes – St. Lawrence Forest Region, such as white cedar, white spruce, red maple and red oak.

8.0 CONCLUSIONS

The proposed project supported by this EIS is a final approval for the development of a plan of subdivision including the creation of 115 residential lots on an existing 5 ha vacant property.

Based on the results of the impact analysis, impacts to the natural environment are anticipated to be minimal. Provided that mitigation measures recommended in Section 7 are implemented as proposed, no significant residual negative impacts are anticipated from the proposed future development.

Following review of the information pertaining to the natural heritage features of the site, the following general conclusions are provided by GEMTEC in regards to the Environmental Impact Statement.

- No negative impacts to natural heritage features identified on-site, including significant wetlands, significant woodlands, significant wildlife habitat, habitat of species at risk and local wetlands and fish habitat, from future infill development are anticipated.
- The proposed project complies with the natural heritage policies of the Provincial Policy Statement.
- The proposed development complies with the natural heritage polices of the Town of Arnprior Official Plan.

9.0 LIMITATION OF LIABILITY

This report and the work referred to within it have been undertaken by GEMTEC Consulting Engineers and Scientists Ltd (GEMTEC), and prepared for 2809981 Ontario Inc. and is intended for the exclusive use of 2809981 Ontario Inc.. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC and 2809981 Ontario Inc.. Nothing in this report is intended to provide a legal opinion.

The investigation undertaken by GEMTEC with respect to this report and any conclusions or recommendations made in this report reflect the best judgements of GEMTEC based on the site conditions observed during the investigations undertaken at the date(s) identified in the report and on the information available at the time the report was prepared.

This report has been prepared for the application noted and it is based, in part, on visual observations made at the site, all as described in the report. Unless otherwise stated, the findings contained in this report cannot be extrapolated or extended to previous or future site conditions, or portions of the site that were unavailable for direct investigation.

Should new information become available during future work, including excavations, borings or other studies, GEMTEC should be requested to review the information and, if necessary, re-assess the conclusions presented herein.

We trust this report provides sufficient information for your present purposes. If you have any questions concerning this report, please do not hesitate to contact our office.

Adam Alaimo, B.Sc.
Biologist

Drew Paulusse, B.Sc.
Senior Biologist

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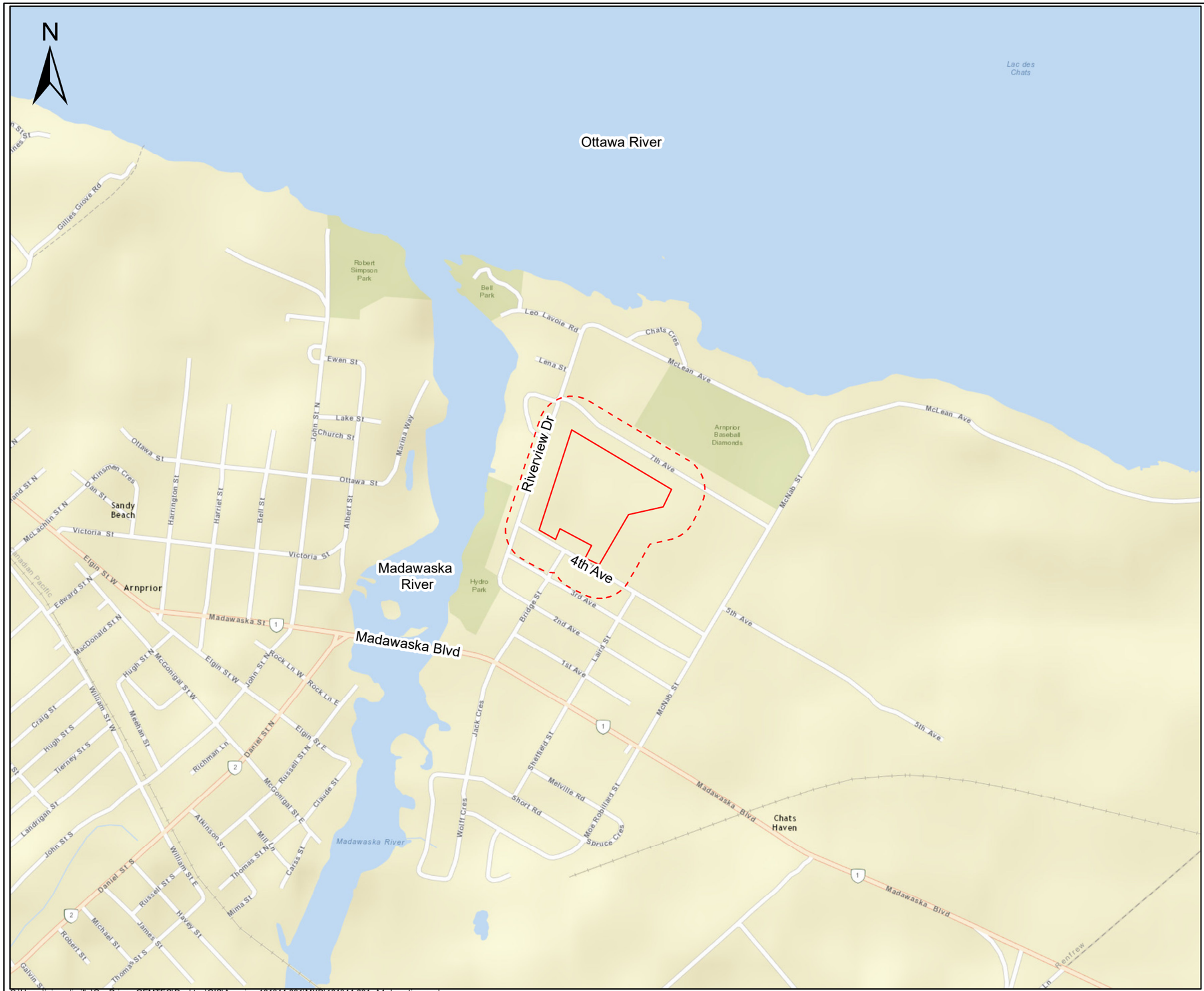
APPENDIX A

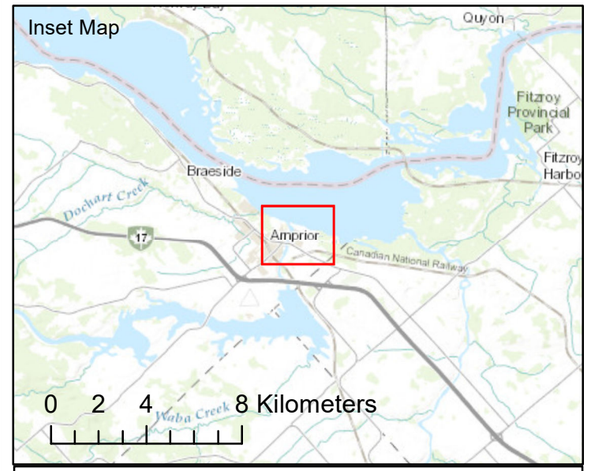
Report Figures

Figure A.1 – Site Location
Figure A.2 – Site Layout
Figure A.3 – Vegetation Communities
Figure A.4 – Natural Heritage Features



Legend

- Property Boundary
- Study Area



Scale
1:10,000
0 70 140 280 420 560 Meters

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Client:	Project:
2809981 Ontario Inc.	101044.001

Location
124 Fourth Avenue
Arnprior, Ontario

Drwn By:	Chkd By:	
JD	DP	Site Location

Date: September 2021	Rev.	
	0	Figure A.1

C:\Users\jaime.dimillo\OneDrive - GEMTEC\Desktop\GIS\Arnprior_101044.001\MXD\101044.001_A1_Location.mxd
Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Legend

- Property Boundary
- Study Area
- Local Wetland

Scale
1:2,500
0 15 30 60 90 120 Meters

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Location
124 Fourth Avenue,
Arnprior, Ontario

Drwn By:	Chkd By:	
JD	DP	Site Layout

Date: September 2021	Rev.	
	0	Figure A.2

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Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Property Boundary
- Study Area
- Vegetation Community

FODM3-1 = Dry - Fresh Poplar Deciduous Forest
THDM4-1 = Native Deciduous Regeneration Thicket
MEMM3 = Dry - Fresh Mixed Meadow
CGL_2 = Parkland
CVI_1 = Parking Lot

Scale
1:2,500
0 15 30 60 90 120 Meters

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Drwn By:	Chkd By:	
JD	DP	Vegetation Communities

Date: September 2021	Rev.	
	0	Figure A.3

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Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Property Boundary
- Study Area
- Local Wetland

Diameter at Breast Height (cm)

Large Trees

- 37-40 cm
- 41-45 cm
- 46-50 cm
- 51-55 cm
- 56+ cm

Scale 1:2,500

0 15 30 60 90 120 Meters

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Client:	Project:
2809981 Ontario Inc.	101044.001

Location: 124 Fourth Avenue, Arnprior, Ontario

Drwn By:	Chkd By:	
JD	DP	Natural Heritage Features

Date: September 2021

Rev. 0

Figure A.4

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Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

APPENDIX B

Site Photographs

Site Photograph 1 – Open maintained meadow area, looking at 4th Avenue.

Site Photograph 2 – Open vacant parking area.

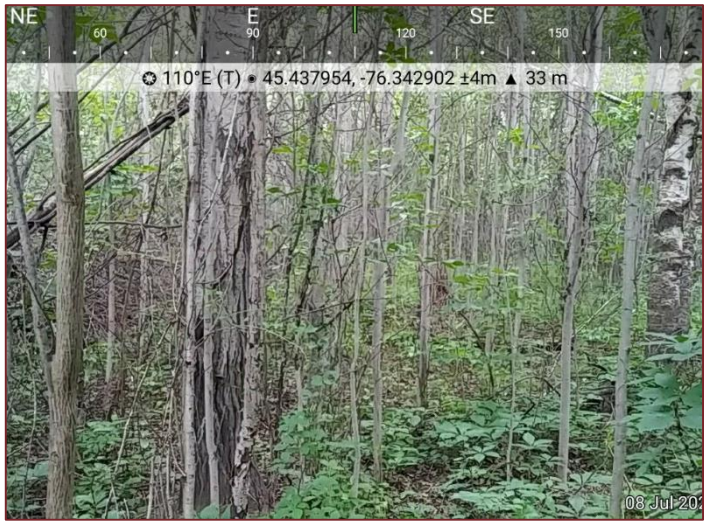
Site Photograph 3 – Meadow vegetation community, looking towards wooded area.

Site Photograph 4 – Dense, shrubby understory vegetation.

Site Photograph 5 – Deciduous thicket vegetation community.

Site Photograph 6 – Parkland.

Site Photograph 7 – Densely vegetated meadow community.



Site Photograph 8 – Example of trembling aspen wooded area found throughout the site.

APPENDIX C

Report Summary Tables

TABLE C.1
SUMMARY OF WILDLIFE OBSERVED ON-SITE AND ADJACENT TO SITE

Common Name	Scientific Name	S-Rank	Evidence
Avian Species			
American crow	*Corvus brachyrhynchos*	S5B	Heard calling
American goldfinch	*Spinus tristis*	S5B	Heard calling
American robin	*Turdus migratorius*	S5B	Heard calling, observed foraging
Black-throated green warbler	*Setophaga virens*	S5B	Heard calling
Cedar waxwing	*Bombycilla cedrorum*	S5B	Heard calling
Chipping sparrow	*Spizella passerina*	S5B	Heard calling
Common raven	*Corvus corax*	S5B	Heard calling
Gray catbird	*Dumetella carolinensis*	S4B	Heard calling
Northern cardinal	*Cardinalis cardinalis*	S5B	Heard calling
Red-eyed Vireo	*Vireo olivaceus*	S5B	Heard calling
Yellow-bellied sapsucker	*Sphyrapicus varius*	S5B	Heard calling
Yellow warbler	*Setophaga petechia*	S5B	Heard calling
Mammalian			
Gray squirrel	*Sciurus carolinensis*	S5	Observed foraging
Insect			
Monarch butterfly	*Danaus plexippus*	S4	Observed foraging

Notes:
Subnational Conservation Status Ranks:
S1 - Critically Imperilled, at very high risk of extirpation, very few populations or occurrences or very steep population decline
S2 - Imperiled, at high risk of extirpation, few populations or occurrences or steep population decline
S3 - Vulnerable, at moderate risk of extirpation, relatively few populations or occurrences, recent and widespread population decline
S4 - Apparently Secure, at a family low risk of extirpation, many populations or occurrences, some concern for local population decline
S5 - Secure, at very low or no risk of extirpation, abundant populations or occurrences, little to no concern for population decline
Qualifiers:
S#B - Conservation status refers to the breeding population of the species

S#N -Conservation status refers to the non-breeding population of the species

S#M - Migrant species, conservation status refers to the aggregating transient population of the species

TABLE C.2
SCREENING RATIONALE FOR SIGNIFICANT WOODLANDS

Woodland Criteria	Further Considered in EIS	Rationale
Woodland Size	No	Contiguous woodlands on-site do not meet the minimum size requirement for the planning area (> 4 ha).
Ecological Functions		
a) Woodland Interior	No	No interior woodlands are present on-site.
b) Proximity	No	Woodlands on-site are not proximal to fish habitat or other natural heritage features.
c) Linkages	No	Woodlands on-site do not provide linkages to other natural heritage features.
d) Water Protection	No	Woodlands on-site are not proximal to watercourses bearing fish habitat.
e) Diversity	No	Species composition within the on-site woodland is well represented on the landscape and no rare species communities were observed on-site.
Uncommon Characteristics	No	The woodlands on-site do not have a unique species composition, vegetation communities with a ranking of S1, S2 or S3, or a mature size structure.
Economical and Social Functional Values	No	The woodlands on-site do not contain high productivity in terms of economically valuable products, high social value such as recreational use, identified historical cultural or educational values.

TABLE C.3
SCREENING RATIONALE FOR HABITATS OF SEASONAL CONCENTRATION AREAS

Wildlife Habitat	Further Considered in EIS	Rationale
Winter Deer Yard	No	As outlined in the Significant Wildlife Habitat Criteria Schedules (OMNRF, 2015) winter deer yards and deer management are an MNRF responsibility. Based on review of publically available data from the OMNRF on Land Information Ontario Geo-hub, no Stratum I deer yards, Stratum II deer yards, or winter congregation areas have been identified on-site or within the broader study area. The closest deer yard to site is a single patch of Stratum II deer yard located approximately 300 m east. Furthermore, while the site may contain suitable foraging areas within the deciduous area, the site lacks suitable coniferous forest stands to offer winter deer yarding habitat.
Colonial Bird Nesting Habitat	No	No suitable habitat located on-site or within the study area to support colonial bird nesting.
Waterfowl Stopover and Staging Areas	No	No suitable habitat located on-site or within the study area to support waterfowl stopover and staging areas.
Shorebird Migratory Stopover Area	No	Shorebird stopover sites are typically well-known and have a long history of use. The site does not contain suitable shoreline habitat for shorebird foraging.
Raptor Wintering Area	No	Suitable forest habitat and open upland habitat on-site do not meet the minimum size criteria of greater than 20 ha.
Bat Hibernacula	No	Cave and crevice habitat is not present on-site or within the study area.
Bat Maternity Colonies	No	Woodlands on-site do not meet minimum snag density (>10 snags/hectare) requirement to be considered SWH for bat maternity colonies.
Turtle Wintering Area	No	Wetlands are absent from the site. Furthermore, no open water was identified on-site to provide sufficient SWH for overwintering turtles.
Reptile Hibernaculum	No	No structures such as large rock piles, bedrock outcrops, cervices or other karstic features have been identified on-site.
Migratory Butterfly Stopover Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.
Landbird Migratory Stopover Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.

TABLE C.4
SCREENING RATIONALE FOR SPECIALIZED WILDLIFE HABITATS

Specialized Wildlife Habitat	Further Considered in EIS	Rationale
Waterfowl Nesting Area	No	No suitable habitat on-site to provide habitat for waterfowl nesting area SWH.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	No	The site is located >120 m from any habitat which could support foraging bald eagles or osprey. Nesting sites for these species are uncommon in Ecoregion 6E (MNRF, 2012).
Woodland Nesting Raptor Habitat	No	Nesting may occur in any ecosite and species preference is towards mature forest stands >30 ha with >10 ha of interior habitat with a 200 m buffer. While woodlands of suitable ecosites are present, contiguous forest stands meeting the required size are not located on-site to provide woodland nesting raptor SWH.
Turtle Nesting Habitat	No	No suitable habitat (exposed mineral soil with minimal vegetation cover) is present within the site.
Seeps and Springs	No	No seep or springs were identified on-site to provide SWH.
Woodland Amphibian Breeding Habitat	No	Suitable wetland habitat within or adjacent to a woodland does not occur on-site to support woodland amphibian breeding SWH.
Wetland Amphibian Breeding Habitat	No	Suitable wetland does not occur on-site to support wetland amphibian breeding SWH.
Woodland Area-Sensitive Bird Breeding Habitat	No	Woodland area-sensitive birds require interior forest habitat located >200 m from the forest edge in large (>30 ha) forest stands. Woodlands on-site and adjacent to the site do not meet the defining criteria.

TABLE C.5
SCREENING RATIONALE FOR HABITAT FOR SPECIES OF CONSERVATION CONCERN

General Habitats of Species of Conservation Concern	Further Considered in EIS	Rationale
Marsh Breeding Bird Habitat	No	Suitable marsh habitat is not present on-site to support marsh breeding bird habitat.
Open Country Breeding Bird Habitat	No	No suitable meadow habitat on-site to support open country bird breeding due to recent (< 5 years) agricultural disturbances.
Shrub/Early Successional Breeding Bird Habitat	No	Candidate early successional breeding bird habitat typically includes fallow fields transitioning to early successional forest habitats that are > 10 ha but have not been actively used for farming.
Terrestrial Crayfish Habitat	No	Terrestrial crayfish are only found within southwestern Ontario (MNRF, 2012).
Special Concern and Rare Wildlife Species	No	No species of special concern were identified on-site during the site investigation, nor were species identified through historical occurrence records.

TABLE C.6
SCREENING RATIONALE FOR ANIMAL MOVEMENT CORRIDORS

General Habitats of Species of Conservation Concern	Further Considered in EIS	Rationale
Amphibian Movement Corridor	No	No *confirmed* wetland amphibian breeding habitat has been identified on-site.
Deer Movement Corridor	No	No winter deer yards have been identified on-site by the OMNRF.

TABLE C.7
SCREENING RATIONALE FOR POTENTIAL SPECIES AT RISK ON-SITE OR WITHIN STUDY AREA

Species	ESA Status	Habitat Use	Probability of Occurrence On-Site or Within Study Area	Rationale
Avian				
Barn Swallow	Threatened	Nests in barns and other semi-open structures. Forages over open fields and meadows.	Low	Site lacks suitable nesting habitat for species. Species was not observed during field investigation.
Black Tern	Special Concern	Breeds in loose colonies in shallow marshes, particularly cattails.	Low	Suitable habitat not present on-site.
Bobolink	Threatened	Nests in dense tall grass fields and meadows, low tolerance for woody vegetation.	Low	Suitable grassland habitat not present in study area. Species was not observed on-site. NHIC shows species within 1km of site.
Cerulean Warbler	Threatened	Prefers mature, deciduous forests	Low	Woodlands on-site do not provide preferred habitat.
Chimney Swift	Threatened	Nests in traditional-style open brick chimneys.	Moderate	Suitable nesting structures within the study area may be present, limited to older residential developments. Site lacks suitable habitat for species. Species not observed during investigation. NHIC indicates species within 1 km of site.
Eastern Meadowlark	Threatened	Nests and forages in dense tall grass fields and meadows, higher tolerance to woody vegetation.	Low	Suitable grassland habitat not present in study area. Species was not observed on-site. NHIC shows species within 1km of site.
Eastern Whip-poor-will	Threatened	Nests on the ground in open deciduous or mixed woodlands with little underbrush, and bedrock outcrops.	Low	Suitable habitat not present on-site.
Eastern Wood-pewee	Special Concern	Woodland species, often found near clearings and edges.	Low	Suitable habitat may present on-site, and in general area. Eastern wood-pewee was not observed on-site during site investigations. No historical occurrence records for species on-site or within study area.
Henslow's Sparrow	Endangered	Prefers open, moist tallgrass fields.	Low	No suitable grassland habitat to support Henslow's sparrow nesting on-site.
Loggerhead Shrike	Endangered	Prefers pasture or other grasslands with scattered low trees and shrubs.	Low	Suitable habitat not present on-site.
Red-headed Woodpecker	Special Concern	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 bird uses for nesting and perching.	Low	No suitable habitat on-site.
Wood Thrush	Special Concern	Prefers deciduous or mixed woodlands	Low	Suitable habitat may be present on-site to support species. Species observed during investigations.
Mammalian				
Eastern Small-footed Myotis	Endangered	Roosts in rock crevices, barns and sheds. Overwinters in abandoned mines. Summer habitats are poorly understood in Ontario, elsewhere prefers to roost in open, sunny rocky habitat and occasionally in buildings (Humphrey, 2017).	Moderate	Potentially suitable anthropogenic structures adjacent to site. Available habitat on-site does not meet bat maternity colony requirements however the site and surrounding area may provide foraging and non-maternal roost habitat.
Little Brown Myotis	Endangered	Maternal colonies known to use buildings, may also roost in trees during summer. Affinity towards anthropogenic structures for summer roosting habitat and exhibit high site fidelity (Environment Canada, 2015).	Moderate	Potentially suitable anthropogenic structures adjacent to site. Available habitat on-site does not meet bat maternity colony requirements however the site and surrounding area may provide foraging and non-maternal roost habitat.
Northern myotis (Northern Long-eared Bat)	Endangered	Occurs throughout eastern North America in associated with Boreal forests. Roosts mainly in trees, occasionally anthropogenic structures during summer (Environment Canada, 2015). Overwinters in caves and abandoned mines.	Low	Species affinity is for Boreal forests and rarely roosts in anthropogenic structures.
Tri-colored Bat	Endangered	Roosts in trees, rock crevices and occasionally buildings during summer. Overwinters in caves and mines.	Moderate	Potentially suitable anthropogenic structures adjacent to site. Available habitat on-site does not meet bat maternity colony requirements however the site and surrounding area may provide foraging and non-maternal roost habitat.
Reptilian				
Blanding's Turtle	Threatened	Inhabits quiet lakes, streams and wetlands with abundant emergent vegetation. Frequently occurs in adjacent upland forests.	Low	Suitable aquatic habitat not present on-site to support species. Species not observed on-site. Ontario Reptile and Herp atlas indicates species within 10km2 grid, likely associated with Ottawa River.
Eastern Musk Turtle	Special Concern	Permanent ponds, lakes, marshes and rivers.	Low	Suitable aquatic habitat not present on-site to support species. Species not observed on-site. Ontario Reptile and Herp atlas indicates species within 10km2 grid, likely associated with Ottawa River.
Gray Ratsnake	Threatened	On the Frontenac Axis, preference to a mosaic of forest and open habitats (fields; bedrock outcrops) with a high amount of edge habitat. In summer, seeks shelter in standing snags, hollow logs, and rock crevices. Nesting occurs inside standing snags, logs, stumps, compost piles. Overwinters in below ground hibernacula.	Low	Suitable habitat for gray ratsnake is not present on-site. Species not observed during field investigation. Based on present day occurrence data (post-1996), the current range maps for gray ratsnake does not include the subject property (COSEWIC, 2018).
Northern Map Turtle	Special Concern	Inhabits rivers and lakeshores. In winter, the turtles hibernate on the bottom of deep, slow-moving sections of river.	Low	Suitable aquatic habitat not present on-site to support species. Species not observed on-site. NHIC indicates species within 1km of site, likely associated with Ottawa River.
Snapping Turtle	Special Concern	Highly aquatic species, found in a wide variety of permanent ponds, lakes, marshes and rivers.	Low	Suitable aquatic habitat not present on-site to support species. Species not observed on-site. Ontario Reptile and Herp atlas indicates species within 10km2 grid, likely associated with Ottawa River.
Plants				
American Ginseng	Endangered	Grows in rich, moist but well-drained and relatively mature, deciduous woodlands dominated by sugar maple, white ash and American basswood.	Low	Woodlands on-site are mixed and are unlikely to support habitat requirements for American ginseng growth.
Butternut	Endangered	Inhabits a wide range of habitats including upland and lowland deciduous and mixed forests.	Low	Species was not observed on-site during the site investigations. NHIC shows species within 1km of site. Site investigations revealed numerous trees of *Cinera* family on-site. DNA testing indicated that they were not pure butternut trees, but rather hybrids with Japanese walnut.
Insects				
Bogbean Buckmoth	Endangered	Preferred food plant is bog bean, present in a variety of wetlands including bogs, swamps and fens.	Low	Preferred wetland habitat is not present on-site.

TABLE C.7
SCREENING RATIONALE FOR POTENTIAL SPECIES AT RISK ON-SITE OR WITHIN STUDY AREA

Gypsy Cuckoo Bumble Bee	Endangered	Inhabits a wide range of habitats: open meadows, agricultural and urban areas, boreal forests and woodlands.	Low	Currently the only known Ontario population occurs in Pinery Provincial Park.
Monarch Butterfly	Special Concern	Caterpillars required milkweed plants that are confined to meadows and open areas. Adult butterflies use more diverse habitats with a variety of wildflowers.	High	Potentially suitable foraging vegetation available for Monarch on-site. Single occurrence of species observed on-site.
Mottled Duskywing	Endangered	Larval food plant, New Jersey Tea, is found in sandy areas and alvars.	Low	Preferred habitat of sandy areas and alvars not present in the study area.
Nine-spotted Lady Beetle	Endangered	Habitat generalist	Low	No recent occurrence reports in the area, thought to be locally extirpated.
Rusty-patched Bumble Bee	Endangered	Habitat generalist	Low	Currently the only known Ontario population occurs in Pinery Provincial Park.
Traverse Lady Beetle	Endangered	Habitat generalist	Low	No new records in Ontario, species thought to be absent in former habitats.
West Virginia White Butterfly	Special Concern	Requires mature moist, deciduous woods, with larval host plant, toothwort.	Low	Necessary vegetation and toothwort plant are not present on-site or within study area.
Yellow-banded Bumble Bee	Special Concern	Habitat generalist: mixed woodlands, variety of open habitat.	Moderate	Potentially suitable foraging habitat available for yellow-banded bumble bee on-site.

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