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Environmental Impact Statement
Proposed Development Application
788 March Road
Ottawa, Ontario

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Environmental Impact Statement
Proposed Development Application
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Ottawa, Ontario

June 7, 2024
Project: 103027.001

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EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by SINA to complete an Environmental Impact Statement (EIS) for a proposed residential development application on the property located on Part of Lot 10, Concession 4, in the Geographic Township of March, Ottawa, Ontario, municipally addressed as 788 March Road, Ottawa, Ontario. This EIS has been completed in support of a proposed development application 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 single field investigation were completed in summer 2023 to identify the presence or absence of natural heritage features and species at risk (SAR) on-site. 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: fish habitat, *candidate* and special concern and rare wildlife habitat (eastern wood-pewee, wood thrush and snapping turtle). 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, Blanding's turtle, black ash, and butternut. Regulated Category 2 and 3 habitat was identified on-site for Blanding's turtle. No black ash or butternut trees were observed on-site during the field investigation.

Potential impacts to the natural heritage features were primarily associated with loss of meadow and forest habitat and indirect impacts to Shirley's Brook and its riparian area, fish habitat and associated significant wildlife habitat. Indirect impacts include potential alterations to water quality and quantity through increased nutrient and sediment loading and stormwater runoff.

Blanding's turtle habitat impacted by the proposed development includes the loss of approximately 0.065 ha of Category 2 habitat and 0.67 ha of Category 3 habitat on-site. The proposed grading and multi-use path, within the 30 m setback, has the potential to impact an additional 0.11 ha Category 2 habitat. Due to the presence of regulated habitat for Blanding's turtle on-site, an Information Gathering Form has been submitted to the MECP to determine whether the project meets the requirements under the *Endangered Species Act, 2007*.

Potential impacts to natural heritage features on-site are likely to be mitigated through the implementation of development setbacks from surface water features. A 30 m setback from Shirley's Brook is proposed. The setbacks are sufficient to provide protection for the majority of SWH on-site as well as providing protection to fish habitat.

To provide protection to potential SAR and their habitat on-site, reptile and amphibian exclusion fencing should be installed around all future construction areas prior to any development or site

alteration, to prevent the immigration of SAR turtles and other wildlife into the construction area. Should any SAR be discovered throughout the course of any development on-site, 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 reptiles, birds and bats, 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, the City of Ottawa Official Plan and Shirley's Brook and Watts Creek Subwatershed Study. No significant residual negative impacts to identified natural heritage features or their ecological functions are anticipated because 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 SINA to complete an Environmental Impact Statement (EIS) for the property located on Part of Lot 10, Concession 4, in the Geographic Township of March, Ottawa, Ontario. The property is municipally addressed as 788 March Road, Ottawa, Ontario, and is 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 to develop a an approximately 1.21 hectare (ha) property. Based on Section 5 of the City of Ottawa Official Plan (Ottawa, 2021) an EIS is required demonstrating that the proposed development will not negatively impact potential natural heritage features which may be present within the study area. The study area is defined as the property boundary 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 development 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);
- Conservation Authorities Act (Ontario, 1990);
- Natural Heritage Reference Manual (OMNR, 2010); and
- City of Ottawa Official Plan (Ottawa, 2021).

1.3 Physical Setting

The subject property is located at 788 March Road, Ottawa, Ontario, and is currently occupied by a vacant development site. Vegetation within the lot is comprised of a cleared development area, cultural meadow, deciduous forest, and a riparian area. The property is bound to the north by Klondike Road, to the east by 1078 Klondike Road, to the south by 762 March Road and to the west by March Road.

1.4 Land Use Context

The subject property is situated within a broader urban residential area. The existing land use designation for the development parcel from the Official Plan (Ottawa, 2021) is suburban and the zoning is general mixed use (GM). The City of Ottawa and the Mississippi Valley Conservation Authority (MVCA) have also identified flood plain on the subject property.

2.0 METHODOLOGY

2.1 Desktop Review

A desktop information gathering exercise was completed to aid in the scoping of field investigations 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 species at risk (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, 2022a);
- Land Information Ontario (OMNR, 2011);
- City of Ottawa Official Plan (Ottawa, 2021);
- Shirley's Brook and Watts Creek Subwatershed Study (Dillon, 1999)
- Ontario Geological Survey (OGS, 2019);
- Natural Heritage Information Centre Biodiversity Explorer (OMNRF, 2022b);
- Breeding Bird Atlas of Ontario (Cadman et al., 2007)
- Ontario Herpetofaunal Atlas (Oldham and Weller, 2000);
- Wildlife Values Area (OMNRF, 2023a);
- Wildlife Values Site (OMNRF, 2023b);
- Mississippi Valley Conservation Authority Geoportal (MVCA, undated);
- Geo Ottawa (Undated); 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 identifying natural heritage features and any potential SAR or their habitat that may exist at the subject property.

A single field investigation was conducted in support of this EIS on September 22, 2023 from 12:15 to 16:15. Conditions during the site investigation were as follows, 21°C, no cloud cover, Beaufort wind 2, noise 4, no precipitation. Photographs of site features taken during field investigations are provided in Appendix B. A summary of all wildlife observed during the field investigation is provided in Table C.1 of Appendix C.

2.2.1 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 September 22, 2023 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 and the dominant soil types within each community.

2.2.2 Tree Inventory

All trees greater than 10 cm in diameter were recorded and critical rootzone calculated to facilitate the retention of trees during development. A copy of the tree conservation report is provided in Appendix D of this report.

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 and an annual precipitation ranging between 759 mm to 1,087 mm (Crins et al., 2009).

The eastern portion of the Ecoregion, where 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 Sea 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 Study Area Land Use

Figure 1 below provides an illustration of the temporal changes in land use within the study area from 1976, 1999, 2008, and 2022 aerial imagery taken from GeoOttawa.

In 1976, the subject property and surrounding lands were primarily populated with agricultural fields, farmhouses, and fallow fields.

By 1999, significant development occurred along March Road and surrounding land, primarily for residential use. The land north of the property along Shirley's Brook had entered a regenerative state with trees colonizing historic agricultural fields.

By 2008, the western surrounding area had continued to intensify with more residential development.

By 2022, surrounding land use has not changed significantly. Further residential development had occurred north and east of the site. The remaining surrounding lands are in present day configuration.

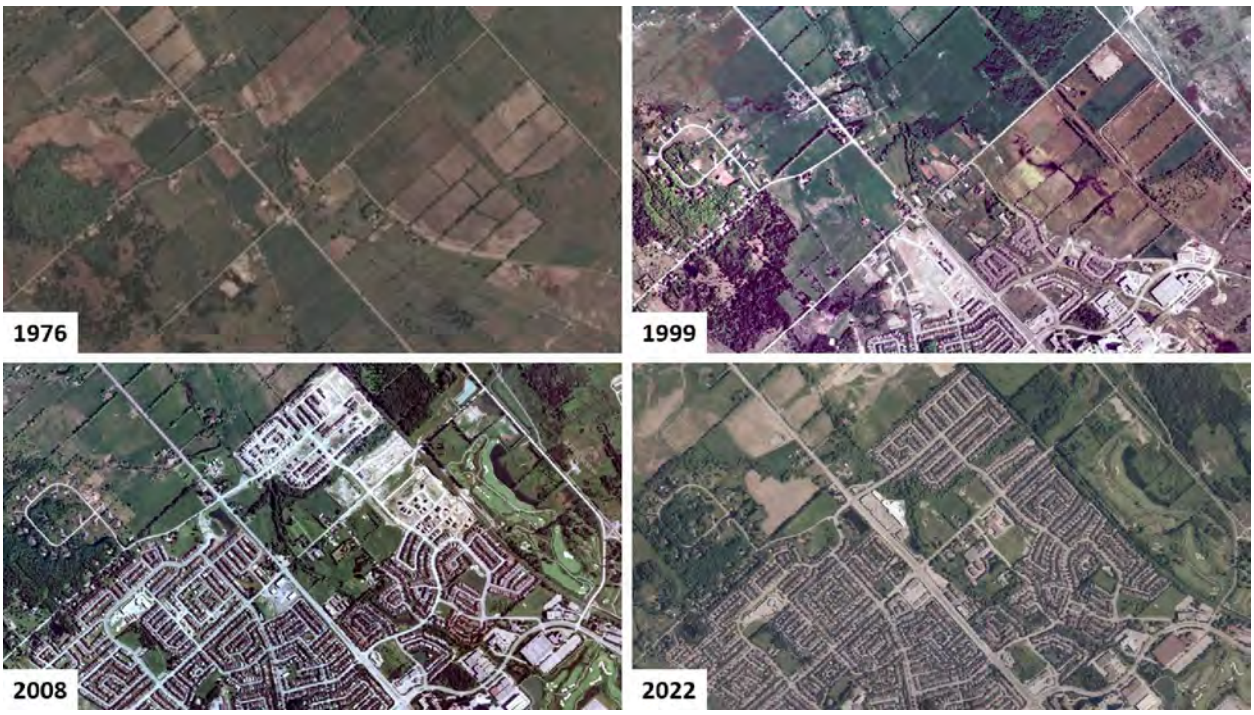

Figure 1 – Temporal Changes in Land Use within Study Area

3.2.1 Shirley's Brook and Watts Creek Subwatershed Study

The Shirley's Brook and Watts Creek Subwatershed Study (Dillon, 1999) was completed, in part, to provide initial guidance on approaches required to protect and restore environmental values within the Shirley's Brook and Watts Creek Subwatershed. The Shirley's Brook and Watts Creek Subwatershed Study encompasses an area of approximately 5,200 ha in West Ottawa, surrounding the former City of Kanata and City of Nepean. The Shirley's Brook and Watts Creek Subwatershed Study identifies opportunities and constraints for improvement of the Shirley's Brook and Watts Creek Subwatershed while providing a series of Best Management Practices (BMPs) that may be implemented to protect, enhance or restore the environment.

The subject site is identified in the Shirley's Brook and Watts Creek Subwatershed Study within the SB4 catchment area, which is described as a warmwater, tolerant system with no sensitive, threatened or endangered species (Dillon, 1999). The site is adjacent to reach 10, which has been identified as low quality type 2 habitat. As such, under the recommendations provided by the Shirley's Brook and Watts Creek Subwatershed Study for type 2 habitat, a minimum 15 m buffer is considered adequate for type 2 habitats.

3.2.2 Kanata North Environmental Management Plan

The Kanata North Environmental Management Plan (EMP) (CH2MHill Canada, 2001) was completed, as a recommendation of the Shirley's Brook/Watts Creek Subwatershed Study, for the area of development land collectively known as Kanata North. The study area was located

from Old Second Line Road to March Valley Road between Terry Fox Drive and Old Carp Road in the west and between Shirley's Brook Drive and Invention Boulevard in the east. The EMP was completed to provide a detailed report at a sub-catchment or tributary level to facilitate stormwater management plans for subdivision applications. The EMP provides specific environmental and stormwater management requirements for larger development areas in accordance with the recommendations of the subwatershed plan.

The EMP was approved by the former Region of Ottawa-Carleton and City of Kanata in 2001. Notably, the EMP establishes a required 20 m setback from top of bank of the watercourse for Shirley's Brook south of Klondike Road and east of March Road with recommended stream restoration works to address erosion, in-stream habitat, shading and bank stability (CH2MHill Canada, 2001).

3.3 Landforms, Soils and Bedrock Geology

Topography of the site is relatively flat, gently sloping from a topographical high of 144 mASL in the west, to a low of 138 mASL in the northeast corner of the property.

A single topographical landform, as mapped by Chapman and Putnam (1984) is described on-site, clay plains of the Ottawa Vally Clay Plains physiographic region.

The Ontario Geological Survey (OGS, 2019) identifies a single surficial soil unit on site, fine-textured glaciomarine deposits, comprised of silt and clay, minor sand and gravel being massive to well laminated with a meltwater channel bisecting the center of the property.

Bedrock at the site, as described by OGS (2019) consists of the Beekmantown Group, comprised of dolostone and sandstone.

3.4 Surface Water, Groundwater, and Fish Habitat

Surface water on the subject property consists of a single watercourse known as Shirley's Brook. Shirley's Brook originates approximately 2.92 km southwest of the site and eventually confluences with the Ottawa River approximately 2.90 km northeast of site.

As identified by GeoOttawa mapping and the MVCA geoportal, portions of the 1: 100 year floodplain for Huntley Creek extend on-site.

A fisheries assessment was not completed as part of this EIS. However, fish were observed within Shirley's Brook during the field investigation and based on a review of the Shirley's Brook Summary Report (MVCA, 2016), Shirley's Brook, which is a tributary of the Ottawa River, is known to provide fish habitat for cool and warm water species. During the desktop review no SAR species or SAR habitat was identified within Shirley's Brook.

Groundwater investigations were not completed in support of this EIS.

3.5 Vegetation Communities

Vegetation communities on-site within the property boundary were confirmed by GEMTEC in 2023, following protocols utilized in the Southern Ontario Ecological Land Classification System (Lee et al., 2008). In accordance with ELC protocol, only polygons larger than 0.5 ha in size are considered their own vegetation community. Polygons less than 0.5 ha in size are considered inclusions within the larger surrounding ELC community. Vegetation at the site represents a vacant development site, with inclusions of a cultural meadow, treed area along Shirley's Brook, and riparian. Table 3.1 below provides a summary of the various vegetation communities identified on-site within the property boundary, while Figure A.3 in Appendix A provides an illustration of the various vegetation communities.

Table 3.1 Vegetation Communities On-Site

ELC Community Type	Description	Size (ha)
Constructed (CV)	Occurring throughout most of the property, is a vacant development area dominated by exposed dirt and dirt ridges. Much of this area was devoid of vegetation. In the western and southern portion of the property is a cultural meadow inclusion. The herbaceous layer contained a variety of forbs including new England aster (*Symphyotrichum novae-angliae*), queen Anne's lace (*Daucus carota*), red clover (*Trifolium pratense*), sow thistle (*Sonchus* sp.), thistle species (*Cirsium* sp.), common reed (*Phragmites australis*), goldenrod species (*Solidago* sp.) and grass species. Along the edge of the community is staghorn sumac (*Rhus typhina*).	0.83
Riparian Area	Located in the north and east portion of the vacant property is a treed deciduous area which was not large enough to constitute its own vegetation community on-site. Within the context of the study area the riparian area would be greater than 0.5 ha and be considered its own vegetation community. The riparian area was dominated by Manitoba maple (*Acer negundo*). Lesser constituents included red maple (*Acer rubrum*), bur oak (*Quercus macrocarpa*) and American elm (*Ulmus americana*). The shrub layer contained Manitoba maple, staghorn sumac, raspberry (*Rubus* sp.), green ash (*Fraxinus pennsylvanica*), bur oak, sugar maple (*Acer saccharum*), American elm, common buckthorn (*Rhamnus cathartica*), dogwood species (*Cornus* sp.), honeysuckle species (*Lonicera* sp.) and hawthorn (*Crataegus* sp.), The herbaceous layer contained poison parsnip (*Cicuta maculata*), goldenrod, new England aster, Virginia creeper (*Parthenocissus quinquefolia*), bur oak and thistle. Shirley's Brook, along the eastern property border contains cattails (*Typha* sp.), spotted joe-pye weed (*Eutrochium maculatum*), bittersweet nightshade (*Solanum dulcamara*),	0.38

ELC Community Type	Description	Size (ha)
	devil's beggarstick (*Bidens frondosa*) and rushes (*Juncaceae* sp.).	

3.6 Wildlife

Wildlife observed on-site and within the study area during the site investigation are provided 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 Wetlands

As described in the Natural Heritage Reference Manual (OMNR, 2010), wetlands “are 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 regard 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 (PSW) or local wetlands were identified on-site during the desktop review or field investigation however, a local wetland was identified north of Klondike Road within the study area during the desktop review. As no significant or local wetlands occur on-site, they 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. Furthermore, the City of Ottawa provides a supplementary document *Significant Woodland: Guidelines for Identification, Evaluation, and Impact Assessment* (Ottawa, 2020) to evaluate woodlands and ensure compliance with the city’s policies.

The subject site falls within the Ottawa urban planning area, as such woodlands are assessed based on age and size threshold criteria. To be considered significant in the urban boundary, woodlands must be greater than 60 years old with a minimum size of 0.8 ha.

Based on a review of aerial imagery from 1976 and 1965, available on GeoOttawa, treed areas on-site present 60 years ago do not meet the minimum size criteria of 0.8 ha. As such, significant woodlands are not present on-site and they 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). The City of Ottawa provides criteria within the *Environmental Impact Study Guidelines* (Ottawa, 2023) to evaluate valleylands.

To be considered significant within the Ottawa planning area, valleylands must have a slope greater than 15% for a length of more than 50 m, with water present for some period of the year.

Based on a review of topographical surveys completed for the subject property, and illustrated in the grading plan created by McIntosh Perry (2023), the valleylands on-site do not meet the minimum slope criteria of greater than 15% for a length of more than 50 m. As such, significant valleylands are not present on-site and they are not discussed or evaluated further in this EIS.

4.4 Flood Plain

While significant valleylands were not identified on-site during the desktop review or during the site investigation, portions of the 1:100 year flood plain for Shirley's Brook, as discussed in Section 1.4 and 3.4 above, have been identified on-site, as identified by MVCA and GeoOttawa mapping. In accordance with City of Ottawa and MVCA policies, no development is permitted within the 1:100 year flood plain.

Impacts to the 1:100 year flood plain are discussed in Section 6 below.

4.5 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 ANSIs have been identified on-site or adjacent to the site during the desktop review or during site investigations. Therefore, ANSIs are not discussed or evaluated further in this EIS.

4.6 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 evaluate potential significant wildlife habitat (SWH) on-site. SWH is broadly categorized as habitats of seasonal concentration of animals, rare vegetation communities, specialized habitats for wildlife, habitats of species of conservation concern and animal movement corridors. Tables C.2, C.3, C.4, and C.5 in Appendix C provide the screening rationale for each category of SWH, respectively.

4.6.1 Habitats of Seasonal Concentration Areas 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 Guide (OMNR, 2000) and Significant Wildlife Habitat Ecoregion 6E Criterion Schedules (OMNRF, 2015) identify 11 types of seasonal concentration habitats that may be considered SWH. These 11 types of seasonal habitats are presented in Table C.2 in Appendix C, including a brief description of the rationale as to why or why they are not assessed further in this EIS.

Following a review of Table C.2 in Appendix C, no *candidate* habitat of seasonal concentration areas of animals are present on-site, accordingly, habitats of seasonal concentrations of animals is not discussed or evaluated further in this EIS.

4.6.2 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.

4.6.3 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 SWH, these eight types of specialized wildlife habitat are evaluated in Table C.3 in Appendix C.

Following a review of Table C.3 in Appendix C, no specialized habitat for wildlife are present on-site, accordingly, specialized habitat for wildlife is not discussed or evaluated further in this EIS.

4.6.4 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-16 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, one habitat of species of conservation concern has been identified on-site: habitat for special concern and rare wildlife species for barn swallow, common nighthawk, eastern wood-pewee, wood thrush and snapping turtle.

4.6.4.1 Special Concern and Rare Wildlife Species SWH

Based on observation data from the field investigation and occurrence data from the NHIC and Ontario Breeding Bird Atlas, five species of special concern have been identified on-site or within the broader study area: barn swallow, common nighthawk, eastern wood-pewee, wood thrush and snapping turtle. No other species of special concern or rare wildlife species were identified on-site or within the broader study area. Potential impacts to all *candidate* special concern from the proposed development are discussed in Section 6.

Barn Swallow

Barn swallow is a medium-sized songbird with an S-rank of S4B (breeding is uncommon but not rare) in Ontario; the most recent Ontario Breeding Bird Atlas indicated a significant decline of 60% between the start of the first atlas and the end of the second atlas with a steady significant annual decline of 3.5% in Ontario (Cadman et al, 2007). Barn swallow is often found in close association with humans, using man-made structures, such as barns, to supplement suitable nesting sites and foraging over open areas, such as grasslands and agricultural fields. Breeding bird surveys and targeted nest searches were not completed in support of this EIS, however the NHIC has

provided observations for barn swallow within 1 km of the subject property. During the site investigation barn swallow were not detected on-site. Given the mosaic of open habitat on-site, there is a moderate potential of barn swallow or suitable foraging habitat to occur on-site. No suitable nesting structures were observed on-site and no nests were observed on-site.

Common Nighthawk

The common nighthawk is a medium-sized bird with an S-rank of S4B (breeding is uncommon but not rare) in Ontario; the most recent Ontario Breeding Bird Atlas indicated a significant decline of probability of observation of 67% in the Southern Shield and 60% in the Lake Simcoe-Rideau regions. There has also been an 11% annual decline of common nighthawk in Ontario from 1981 to 2005 (Cadmen et al., 2007). Common nighthawk is a generalist species found in open habitats from rock outcrops, bogs, and agricultural fields to forests with openings and urban areas such as footpaths, railways and gravelled roofs. The NHIC has identified historic observations for the subject property and surrounding study area. While nocturnal surveys targeting common nighthawk were not completed as part of this EIS, the species was not flushed or observed during the site investigation. Given the availability of dirt clearings and sparse woodlands on-site, there is a moderate chance of common nighthawk or suitable habitat to occur on-site.

Eastern Wood-pewee

The eastern wood-pewee is a small flycatcher bird with an S-rank of S4B (breeding is uncommon but not rare) in Ontario; the most recent Ontario Breeding Bird Atlas indicated that the eastern wood-pewee has a probability of occurrence of over 80% (Cadman et al, 2007). Furthermore, the area extending from Ottawa to Lake Ontario is considered to have some of the highest density of wood-pewee in Ontario (Cadmen et al, 2007). Eastern wood-pewee is a woodland species that is often found near clearings and edges. While breeding bird surveys were not completed in support of this EIS, the NHIC has provided observations for eastern wood-pewee within 1 km of the subject property. During the site investigation eastern wood-pewee was not detected on-site. Given the availability of treed edge habitat on-site and within the study area, there is a moderate potential for eastern wood-pewee or suitable habitat to occur on-site.

Wood Thrush

The wood thrush is a medium-sized songbird with an S-rank of S4B (breeding is uncommon but not rare) in Ontario; the most recent Ontario Breeding Bird Atlas indicated that the wood thrush populations in Ontario have shown a significant annual increase of 4.4% between the first and second atlas (Cadman et al., 2007). While breeding bird surveys were not completed in support of this EIS, the NHIC has provided observations for wood thrush within 1 km of the subject property. During the site investigation wood thrush was not detected on-site. Wood thrush is a woodland species often found in moist, deciduous hardwood or mixed forests stands, with dense deciduous undergrowth and tall trees. Given the availability of forest habitat within the study area, there is a moderate chance of wood thrush or suitable habitat to occur on-site.

Snapping Turtle

The snapping turtle is a highly aquatic turtle species with an S-rank of S3 (rare to uncommon) and is listed as a species of special concern in Ontario. The NHIC identified snapping turtle as having occurred within 1 km of the site. Snapping turtles are aquatic generalists, found in a variety of wetlands, water bodies and watercourses. As a highly aquatic species, snapping turtles prefer wetlands and waterbodies to be permanently flooded. While Shirley's Brook is unlikely to support overwintering habitat, due to the hard pan soils and bedrock streambed, it may provide suitable general habitat for snapping turtle. Given the availability of potentially suitable aquatic habitat on-site there is a moderate potential for snapping turtle and its habitat to occur on-site.

4.6.5 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, 2015a). The Significant Wildlife Habitat Ecoregion Criterion Schedules for Ecoregion 6E-16 (OMNRF, 2015a) identifies two types of animal movement corridors: amphibian movement corridors and deer movement corridors. As per guidance presented in OMNRF, 2015a, animal movement corridors should only be identified as SWH when a *confirmed or candidate* SWH has been identified by the MNRF district office or by the regional planning authority.

Following a review of Table C.5 in Appendix C, no animal movement corridors have been identified on-site. As such, animal movement corridors are not discussed or evaluated further in this EIS.

4.7 Fish Habitat

The protection of fish and fish habitat is a federal responsibility and is administered by the Department of Fisheries and Oceans Canada (DFO). Fish habitat as defined in the Fisheries Act (Canada, 1985) means, "spawning grounds and nursery, rearing food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes."

When development is unable to avoid resulting in the harmful alteration, disturbance or destruction of fish habitat from typical project impacts such as temperature change, sedimentation, infilling, reduction of nutrient and food supply, etc., an authorization under the Fisheries Act is required for the project to proceed.

A fisheries assessment was not conducted as part of this EIS; however, as discussed in Section 3.3, Shirley's Brook is known to provide year-round fish.

Fish habitat is illustrated on Figure A.5 in relation to other site features. Impacts to fish habitat on-site are discussed in Section 6.

4.8 Species at Risk

The probability of occurrence for species at risk (SAR) 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.6 in Appendix C, provides a summary of all SAR that 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 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 Section 6.

5.0 PROPOSED PROJECT

The proposed project is an application for a residential development on an approximately 1.21 ha property. Figure A.4 in Appendix A provides an illustration of the proposed development.

It is understood by GEMTEC that the development will occur in two phases. Phase 1 will consist of a six-storey, apartment building with 95 units and a building area of 0.158 ha. Phase 2 will consist of a six-storey, apartment building with 101 units and a building area of 0.164 ha. Additional components of the proposed development includes the creation of a parking lot and underground parking area, sidewalks, an environmental setback and a multi-use path. The environmental setback, labelled as turtle exclusion barrier in the Site Plan prepared by NEUF Architects (2023), occurs in all locations where the retaining wall is < 0.6m high. Exclusion fencing has also been proposed, as illustrated in the Landscape Plan prepared by GJA Inc. (2023), located east of the multi-use path connecting to the exclusion fencing on 762 March Road and ending where Shirley's Brook intersects Klondike Road. The multi-use path will extend the pathway already present on 762 March Road to the south and connect to Klondike Road.

Stormwater servicing is proposed to be connected to and provided through existing municipal infrastructure. Based on the Site Servicing and Stormwater Management Report, prepared by McIntosh Perry (2023), a new 300mm storm service lateral will be installed and connected to the existing 675mm diameter storm sewer within March Road to service the proposed development. Stormwater will be collected by roof drainage and various drains around the site and will be stored either with rooftop storage or via an underground cistern before discharging to the March Road. The rooftop ponding and cistern storage will provide storage for 2-, 5- and 100-year storm events. Water quality control will be provided by the existing Shirlye's Brook SWM Pond facility located north of Klondike Road which will provide the required 70% TSS removal rate.

The limit of development, labelled as the approximate limits of grading within the Lot Grading, Drainage, Sediment and Erosion Control Plan as prepared by McIntosh Perry (2023), occurs east of the proposed multi-use path and within 30 m of Shirley's Brook. The grading within the 30 m setback will be required in order to ensure that the City requested stone-dust multiuse pathway provides adequate drainage from the building.

Future components of the development activities anticipated on the subject property considered in the impact assessment presented in Section 6 will include: tree clearing and vegetation grubbing, fill placement and elevation grading and general landscaping activities.

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 4 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: vegetation removal, disturbance of the natural soil mantle, increased noise generation, increased human disturbance, increased storm water generation, a potential increase in nutrient loading to adjacent surface water features, increase in impervious surface and short-term increases in sedimentation and/or erosion.

6.1 Flood Plain

As discussed in Section 4.4, the 1:100 year flood plain is present on-site as mapped by the MVCA and City of Ottawa.

In accordance with MVCA and City of Ottawa policies, no development is permitted within the 1:100 year flood plain. Figure A.5 illustrates the 1:100 year flood plain, demonstrating all new building development will occur outside of the 1:100 year floodplain. Minor grading will only occur within the 1:100 year flood plain where necessary to accommodate the city requested multiuse multi-use pathway, to ensure proper drainage from the building and pathway towards Shirley's Book. as illustrated on Figure A.6.

Minor development to accommodate the proposed multi-use path is proposed to occur within the 1:100 year flood plain. Potential direct impacts to the flood plain on-site are primarily associated with changes to water retention through increased impervious surface area, encroachment resulting in compaction of soils and vegetation loss.

Other potential impacts include short duration construction impacts, including heavy machinery encroachment, fill placement, compaction, and long-term human disturbance such as dumping of refuse and yard waste and trampling.

Avoidance and mitigation measures intended to protect the flood plain are provided in Section 7.

6.2 Significant Wildlife Habitat

The potential presence of significant wildlife habitat (SWH) on-site and within the study area was evaluated in Section 4.5. As a result of this assessment, one type of significant wildlife habitat were determined to be present on-site or within the study area: *candidate* habitats of special concern and rare wildlife species.

Potential impacts to each type of significant wildlife habitat are discussed in greater detail in the following subsections, while mitigation measures intended to prevent such impacts are presented in Section 7.

6.2.1 Significant Wildlife Habitat of Special Concern and Rare Wildlife Species

Barn Swallow

Barn swallows typically build their nests out of mud on ledges or walls on barns or other human made structures. Natural sites, including cliffs and caves are rarely used for nesting (Cadman et al., 2007). Foraging occurs fields and ponds. Barn swallows are less common in highly urban area and areas with higher forest cover (Cadman et al., 2007).

Breeding bird surveys and targeted nest searches were not completed in support of this EIS, however the NHIC has provided observations for barn swallow within 1 km of the subject property. The site investigation was completed outside of the study window for breeding birds barn swallow nests are re-used annually and the presence or absence of nests can be assessed at any time of year. During the site investigation, no barn swallow were not detected on-site, further no suitable nesting structures or barn swallow nests were observed on-site.

The constructed ecosite, in the western half the property, does not provide suitable foraging or nesting habitat for barn swallows. Furthermore, development is not proposed to occur within suitable barn swallow nesting habitat on-site or impact the off-site bridge within the study area which may provide barn swallow nesting habitat. Potential foraging functions of the riparian and creek corridor area will be maintained throughout the development.

As such no negative impacts are anticipated to occur to barn swallow as a result of the proposed development and no mitigation measures are provided in Section 7 for the protection of barn swallow and they are not discussed or evaluated further in this EIS.

Common Nighthawk

In Ontario, the common nighthawk breeding range occurs throughout the province except for the coastal regions of James Bay and Hudson Bay (Ontario, 2022a). The probability of observation of common nighthawk was 39% lower in the second atlas than in the first with the most precipitous declines occurring in the Southern Shield (67%) and Lake Simcoe-Rideau (60%) regions. Farther south, the nighthawk has virtually disappeared from forested habitats and now occurs primarily in cities, though even there numbers seem much reduced in recent decades. Across Canada the common nighthawk has seen a significant annual decline of 7.7% with an 11% decline in Ontario from 1981 to 2005 (Cadman et al., 2007). The common nighthawk is listed as a species of special concern in Ontario.

During the breeding season, the common nighthawk is found in open and partially open habitat, including logged areas and clearings in forests, bogs, fields, rocky or sandy natural habitats, as well as disturbed and settled areas. Due to the common nighthawk's generalist requirements any

location that meets its habitat needs, open areas for foraging and bare or short-cropped surfaces for nesting, may be used during the breeding season (COSEWIC, 2018).

Impacts to common nighthawk and their habitat on-site from the proposed development is limited to the wooded habitat and vacant development area on-site, which may provide nesting and foraging habitat.

While nocturnal surveys targeting common nighthawk were not completed as part of this EIS, the species was not flushed or observed during the site investigation.

Mitigation measures intended to prevent negative impacts to nesting and foraging common nighthawk are presented in Section 7.

Eastern Wood-Pewee

Threats to eastern wood-pewee are not well understood however, loss of suitable forest habitat does not appear to be a significant issue across their Canadian breeding range (COSEWIC, 2012a). Furthermore, research indicates that the species is not very sensitive to forest fragmentation effects or forest size (COSEWIC, 2012a). Eastern wood-pewee may be sensitive to human habitation, in Ontario they occur less frequently in woods with surrounding development than those without houses (COSEWIC, 2012a). Other threats to eastern wood-pewee may include changes in the availability of aerial insects, mortality during migration and/or wintering, nest predation and habitat changes due to white-tailed deer browsing (COSEWIC, 2012a).

While breeding bird surveys were not completed in support of this EIS, the NHIC has provided observations for eastern wood-pewee within 1 km of the subject property. During the site investigation eastern wood-pewee was not detected on-site.

Impacts to eastern wood-pewee and their habitat on-site from the proposed development is limited to the wooded habitat on-site, which may provide nesting and foraging habitat. Impacts to eastern wood-pewee habitat may include loss of forest habitat and increased human presence.

The proposed development will result in no loss of suitable forest habitat on-site. Impacts from increased human presence are anticipated to be negligible given the availability of suitable habitat on-site and within the greater study area.

Mitigation measures intended to prevent negative impacts to nesting and foraging eastern wood-pewee are presented in Section 7.

Wood Thrush

In Ontario, the wood thrush breeding range extends from southern Ontario north to northern Georgian Bay and eastern Lake Superior (COSEWIC, 2012b). While wood thrush populations have declined over most of its North American range, between 1981 and 2005, breeding bird data

indicates populations in Ontario have increased by 4%, likely due to increases in woodland cover south of the Canadian Shield (Cadman et al., 2007). The probability of occurrence in Ontario however, has decreased by 15% between the first and second breeding bird atlas (Cadman et al., 2007). The wood thrush is listed as a species of special concern in Ontario.

During the breeding season, the wood thrush is found in moist, deciduous hardwood or mixed forest stands, often in previously disturbed sites with dense, deciduous undergrowth and tall trees that are used as singing perches (COSEWIC, 2012b). For wood thrush, habitat selection is based more on the structure of the forest, preferring sites with lower elevations, trees taller than 16 m, closed canopy (>70%), with a high variety of deciduous species, moist soil and decaying leaf litter (COSEWIC, 2012b).

While breeding bird surveys were not completed in support of this EIS, the NHIC has provided observations for wood thrush within 1 km of the subject property. During the site investigation wood thrush was not detected on-site.

Impacts to wood thrush and their habitat on-site from the proposed development is limited to the wooded habitat on-site, which may provide nesting and foraging habitat. Impacts to wood thrush habitat may include loss of forest habitat and increased human presence.

The proposed development will result in no loss of suitable forest habitat on-site. Impacts from increased human presence are anticipated to be negligible given the availability of suitable habitat on-site and within the greater study area.

Mitigation measures intended to prevent negative impacts to nesting and foraging wood thrush are presented in Section 7.

Snapping Turtle

Threats to snapping turtle are primarily related to their life-history, their slow recruitment, late maturity, long lifespan and high adult survival make them extremely vulnerable to a variety of anthropogenic impacts (COSEWIC, 2008). Short, cool summers also reduce hatching success. In Canada, snapping turtles are most impacted by events that increase adult mortality, such as harvesting of adults, persecution and road mortality (COSEWIC, 2008). Other threats include loss of habitat, environmental contamination and nest predation (COSEWIC, 2008).

While basking turtle surveys were not completed in support of this EIS, the NHIC has provided observations for snapping turtle within 1 km of the subject property. During the site investigation snapping turtles were not detected on-site.

As no in-water work is proposed as part of the future development, impacts to snapping turtle are anticipated to be temporary and only associated with short duration construction impacts, including: heavy machinery encroachment, fill placement and long-term human disturbance such

as increased road mortality, human-wildlife conflict, noise generation, dumping of refuse and trampling.

Mitigation measures to protect snapping turtle and their habitat from the proposed development are presented in Section 7.

6.3 Fish Habitat

When activities are unable to avoid or mitigate harm to fish or fish habitat from typical project impacts such as temperature change, sedimentation, infilling, reduction of nutrient and food supply, etc., an authorization under Subsection 35 (2) of the Fisheries Act is required for the project to proceed without contravening the Act.

As no in-water work is proposed, direct impacts to fish habitat are not anticipated. However, considering the scope of the project and abundance of available habitat, impacts are anticipated to be minimal, mostly indirect and temporary in nature.

Potential indirect impacts to surface water features resulting from construction activities and from increased runoff following construction may include alterations to water quality, increased storm water runoff, overland flow and concomitant sediment transport caused by an increase in impervious surface area and vegetation loss, as well as increased nutrient loading through both overland and subsurface pathways, and landscaping practices. However, impacts are anticipated to be negligible when considering the scope of the project, surrounding existing land use, and abundance of habitat available up and downstream of site.

Other potential impacts include short duration construction impacts, including: heavy machinery encroachment, fill placement and long term human disturbance such as noise generation, dumping or refuse and yard waste and trampling.

Mitigation measures, intended to protect fish habitat on-site are presented in Section 7.

6.4 Species at Risk

As outlined in the Endangered Species Act (ESA) (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 4.6 are discussed on a species-by-species basis in the subsections below.

6.4.1 Eastern Small-footed Myotis

The eastern small-footed myotis is found throughout eastern North America. In Ontario, the species has been observed in the areas south 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, 2021a).

While the on-site treed area is unlikely to support bat maternity colonies, given the availability of suitable habitat and potentially suitable anthropogenic buildings within the study area, there is a potential for eastern small-footed Myotis to occur on the property, for foraging and non-maternal roosting. Impacts to eastern small-footed Myotis are primarily associated with 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.

6.4.2 Little Brown Myotis

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, 2021b).

Little brown myotis overwinter in caves and abandoned mines, they require highly humid conditions and temperatures that remain above the freezing mark (Ontario, 2021b). 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 clear-cuts are not typically utilized for foraging (COSEWIC, 2013).

While the on-site treed area is unlikely to support bat maternity colonies, given the availability of suitable habitat and potentially suitable anthropogenic buildings within the study area, there is a potential for eastern little brown Myotis to occur on the property, for foraging and non-maternal roosting. Impacts to little brown Myotis are primarily associated with 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.

6.4.3 Tri-colored Bat

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 caves or mines and have very rigid habitat requirements; they typically roost in 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 utilizes trees, rock crevices and buildings for maternity colonies. Foraging is mainly done over watercourses and streamside vegetation (COSEWIC, 2013).

While the on-site treed area is unlikely to support bat maternity colonies, given the availability of suitable habitat and potentially suitable anthropogenic buildings within the study area, there is a potential for eastern tri-colored bat to occur on the property, for foraging and non-maternal roosting. Impacts to tri-colored bat are primarily associated with 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.

6.4.4 Blanding's Turtle

In Canada, Blanding's turtles are found throughout southern and south-central Ontario from south of Manitoulin Island to western Quebec. In Ontario, Blanding's turtles are often observed utilizing eutrophic habitats with clear water (COSEWIC, 2016). This turtle species occurs primarily in shallow water; adults are generally found in open or partially vegetated sites, where as juveniles prefer areas that contain thick aquatic vegetation. Blanding's turtles are known to make large overland journeys between connected lakes, rivers, streams, marshes or ponds, upwards of 6 km in a single active season. Overwintering occurs in permanent pools that average about one metre in depth, or slow flowing streams (COSEWIC, 2016).

While targeted basking turtle surveys were not completed in support of this EIS, the site is located within a greater area of known Blanding's turtle occurrences. During the site investigation Blanding's turtles were not detected on-site.

As outlined in the MNRF general habitat description for Blanding's turtle, Category 1 habitat is defined as "the nest and the area within 30 m of the nest or overwintering sites and the area within 30 m of the site", Category 2 habitat is defined as "the wetland complex (i.e. all suitable wetlands or waterbodies within 500 m of each other) that extends up to 2 km from an occurrence and the area within 30 m around those suitable wetlands or waterbodies" and Category 3 habitat is defined as "the area between 30 m and 250 m around suitable wetlands and waterbodies identified as Category 2, within 2 km of an occurrence." The MNRF general habitat description for Blanding's turtle is provided in Appendix E.

While Shirley's Brook is unlikely to support Category 1 overwintering habitat, due to the hard pan soils and bedrock streambed, it is likely to provide suitable aquatic habitat for Category 2. As regulated Blanding's turtle habitat extends up to 2 km from on observation, based conservatively on the NHIC observation data, Shirley's Brook is assumed to provide at a minimum Category 2 and Category 3 habitat.

As no in-water work will occur within Shirley's Brook, potential indirect are primarily associated with changes to the surface water and groundwater water balance through increased storm water runoff resulting from an increase in the impervious surface area and encroachment resulting in compaction of soils. Other potential impacts include short duration construction impacts, including: heavy machinery encroachment, fill placement and long term human disturbance such as noise generation, dumping or refuse and yard waste and trampling and increased road mortality, particularly during nesting season, when turtles are more transient.

Potential direct impacts to Blanding's turtles are anticipated to be associated with the potential loss of Category 2 and Category 3 habitat and increased interactions with transient Blanding's turtles. The proposed residential development has the potential to impact 0.35ha of Category 2 habitat and 0.67 ha of Category 3 habitat on-site. Impacts to transient Blanding's turtles will be more likely during migratory and nesting periods. Migration and dispersal take place after the start of the active season, following ice-off, and in September when turtles return to their overwintering habitat. Nesting typically take place between late May to early July.

Avoidance and mitigation measures intended to prevent harm to Blanding's turtles who have the potential to occur on-site are present in Section 7.

6.4.5 Black Ash

The Canadian range for black ash extends from western Newfoundland to southeastern Manitoba (Ontario, 2023a). It is a shade-intolerant species that that is typically found on moist to wet sites, including swamps, bogs and riparian areas.

Black ash was not observed on-site or within the study area.

As no black ash was documented on-site, no mitigation measures are provided in Section 7 in relation to black ash and they are not discussed or evaluated further in this EIS.

6.4.6 Butternut

The Canadian range for Butternut extends through southern Ontario into southern Quebec, and New Brunswick (COSEWIC, 2003). Butternut is a shade intolerant tree that is commonly found in riparian habitats, and sites in a regenerative state. Butternut can also be found on rich, moist, well-drained gravels, favouring those of limestone origin. Common associates of Butternut trees include: basswood, black cherry, beech, black walnut, elm, hickory, oak, red maple, sugar maple, yellow poplar, white ash and yellow birch.

Butternut observation records were provided by the NHIC within 1 km grid square of the site however, no butternut trees were observed on-site during the field investigation. As no butternuts were documented on-site, no mitigation measures are provided in Section 7 in relation to butternut and they are not discussed or evaluated further in this EIS.

6.5 Cumulative Impacts

Potential cumulative impacts associated with the proposed project include an increase in storm water generation, increase in nutrient loading to adjacent aquatic features and the loss of meadow habitat, primarily for avian species.

Cumulative impacts to the natural environment at the site due to increased human presence, increased wildlife and human interaction and increased noise and light generation, are expected to be negligible given the existing residential development within the surrounding project area.

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 to minimize or eliminate potential environmental impacts identified in Section 6.

For this report, a setback is defined as the minimum required distance between any structure, development or disturbance and a specified line. A buffer, for the purpose of this report, is defined as the area located between a natural heritage feature and the prescribed setback. For the following subsections, buffers should be located between NHFs and lands subject to development or alteration, be permanently vegetated by native or non-invasive, self-sustaining vegetation and protect the natural heritage feature against the impact of the adjacent land use.

Vegetated buffers, particularly buffers that are vegetated with a mix of grassy herbaceous vegetation and shrubby or woody vegetation are most effective in mitigating impacts associated with anthropogenic activities in adjacent lands (Beacon, 2012). Buffers recommended in the following subsections and illustrated on Figure A.6. In the subsections below, where possible, literature references for studies used as the basis of the recommended buffer widths are provided.

7.1 Flood Plain

The proposed building development on-site is to occur outside of the 1:100 year flood plain. Figure A.6 in Appendix A illustrates a 30 m setback from the top of bank of Shirley's Brook, which is sufficient to prevent all building and infrastructure development within the flood plain.

Only grading required to accommodate the city requested multi-use path and ensure proper drainage from the building and pathway towards Shirley's Brook will occur within the 1:100 year flood plain.

The MVCA has identified that the proposed development falls within the MVCA regulation limit, as such a permit under Ontario Regulation 153/06 will be required for development authorization.

7.2 Fish Habitat

No negative impacts on Shirley's Brook and integrity of the fish habitat are anticipated because of the proposed development if all mitigation measures recommended below are enacted and best management practices followed. Shirley's Brook and associated fish habitat on-site can be protected against potential impacts of the proposed development through the implementation of a construction setback.

Beacon Environmental Review of Ecological Buffers (2012) provides a range for buffer widths to protect various natural heritage features based on the current science. The buffers are presented in a way that determines the risk of not achieving the desired buffer function (i.e. high, moderate, and low). The functions analysed include water quantity, water quality, screening of human disturbance/changes in land use, hazard mitigation zone and core habitat protection. Impacts to

the fish habitat on-site were identified to include potential impacts to water quality, human disturbance, and core habitat protection (for breeding woodland amphibians). Watercourse buffer widths have a moderate risk of not providing adequate mitigation for water quality impacts and for human disturbance/land use change impacts at widths between 11 m and 30 m and low risk at widths of 31 m to 60 m. Watercourse buffer widths have a moderate risk of not providing adequate mitigation for core habitat protection at widths between 21 m and 60 m. A minimum 30 m setback is recommended from the top of bank of the watercourse associated with fish habitat on-site.

The City of Ottawa Official Plan (2022) Section 4.9.3 also outlines policies for determining the setback from a surface water feature within the Ottawa planning area. The Ottawa OP states that the minimum setback from a surface water feature shall be the development limits as established by a council-approved watershed, subwatershed, or environmental management plan. The subject site has both a council-approved subwatershed study (Shirley's Brook and Watts Creek Subwatershed Study, Dillon, 1999), and an EMP (KNEMP EMP, CH2Mill Canada, 2001) The Shirley's Brook and Watts Creek subwatershed study provided a minimum setback distance of 15 m, whereas the KNEMP provided a minimum 20 m setback from top of bank. In the context of this site, the minimum setback distance of 20 m from top of bank from the EMP overrides the 15 m minimum setback distance from the Shirley's Brook and Watts Creek subwatershed study. Therefore, the minimum setback distance for the subject property is 20 m from top of bank.

In consideration of Shirley's Brook, the nature of the proposed development, and the potential for species at risk (Blanding's turtle) to occur on-site, a minimum 30 m setback from the top of bank of the watercourse is recommended. The recommended 30 m setback from top of bank provides sufficient protection for mitigating water quality impacts and human disturbances and is sufficient to protect core habitat within the watercourse.

The 30 m setback complies with the minimum setbacks established through the Shirley's Brook and Watts Creek Subwatershed Study (Dillon, 1999) and the KNEMP (CH2Mill Canada, 2001). The 30 m setback is illustrated on Figure A.6 in Appendix A.

Based on the proposed development plan all proposed buildings and infrastructure will occur outside of the recommended 30 m setback. However, to accommodate the cities multiuse pathway, grading has been requested by the City within the 30 m setback to support the stone dust pathway. Even with a 20 m setback from top of bank, grading would still occur within the setback area. Figure A.6 illustrates both the 20 m setback and the recommended 30 m setback. Post construction and grading more of the disturbed area within a 30 m setback would need to be re-stabilized and vegetated resulting in a reduction of the overall cumulative impacts on the 1:100 year flood plain and Blanding's turtle and fish habitat within Shirley's Brook.

No negative impacts on the ecological function of Shirley's Brook associated with the fish habitat are anticipated as a result of this project if the setback proposed above and all mitigation measures and best management practices recommended below are adhered to.

As discussed above, no building or infrastructure development will occur within the 1:100 year flood plain. Only limited grading, to accommodate the cities multiuse pathway, will occur within the flood plain with restoration proposed for the disturbed areas. A permit under Ontario Regulation 153/06 will be required for development authorization. The recommended 30 m buffer is sufficient to protect the flood plain from building development.

General mitigation measures recommended for the protection of water quality and watercourse habitat include:

- Buffers should be comprised of a mixture of native, self-sustaining trees, shrubs and tall grasses.
- All future development and construction activities within the study area, including ditching, culvert installation, erosion and sediment control and storm water management should be completed in accordance with Ontario Provincial Standard Specification 182 and OPSS 805.
- No in-water work should occur between July 16 and September 30 of any year to protect spawning fish habitat adjacent to the development area. All in-water habitat features, including aquatic vegetation, natural woody debris and boulders should be left in their current locations. Riparian areas within the 30 m buffer should remain in a natural state.
- When native soil is exposed, sediment and erosion control work in the form of heavy-duty sediment fencing shall be positioned along the down gradient edge of any construction envelopes adjacent to waterbodies.
- Silt fencing should be installed along all setbacks and construction areas to provide visual demarcation of the setbacks to prevent machinery encroachment and sediment transport.
- Erosion and Sediment Control (ESC) fencing is recommended at the limit of the development to reduce impacts to the adjacent watercourse. No construction activities (i.e. grading, equipment storage, vegetation removal, refueling, etc.) are to be completed beyond the limits of the ESC fencing.
- Schedule work to avoid wet, windy and rainy periods.
- Maintain erosion and sediment control measures until all disturbed ground has been permanently stabilized, suspended sediment has resettled, and runoff water is clear.
- Ensure that the water being pumped/diverted from the site is filtered prior to release;
- Stabilize shoreline or banks disturbed by any project activity to prevent erosion and/or sedimentation, preferably through re-vegetation with native species suitable for the site.
- Operate machinery on land above the high watermark, in a manner that minimizes disturbance to the banks and bed of the municipal drain;
- In order to protect fish habitat from contamination during construction, it is recommended that all machinery be maintained in good working order;
- The development plan should include road side ditches designed to promote infiltration.
- Downspouts should be directed towards road side ditches and not adjacent surface water features.

- In order to protect fish habitat from contamination, it is recommended that all machinery be maintained in good working condition and that all machinery be fueled a minimum of 30 m from the highwater mark.
- Any temporary storage of aggregate material shall be set back from the water's edge by no less than 40 m and be contained by heavy-duty silt fencing.
- Maintain as much of the natural vegetation as possible within and around the construction project. Post-construction, degraded vegetation within the disturbed areas should be replaced by planting of native plant species, or seeded, as to prevent further soil erosion.

7.3 Significant Wildlife Habitat

7.3.1 Habitats of Special Concern and Rare Wildlife Species

7.3.1.1 Common Nighthawk, Eastern Wood-Pewee and Wood Thrush

Impacts to eastern wood-pewee and wood thrush primarily concern increased human disturbance, the 30 m setback presented above to protect Shirley's Brook sufficient to protect special concern and rare wildlife habitat from increased disturbance during on-site construction. To further minimize the impact of the proposed development on common nighthawk, eastern wood-pewee, and wood thrush habitat, vegetation removal should occur outside the key breeding bird period (typically March 31 to August 31) as identified by Environment Canada for the protection of nesting and foraging common nighthawk, eastern wood-pewee, and wood thrush and to avoid contravention of the Migratory Bird Convention Act. If vegetation clearing activities must take place during the timing window than a nest survey shall be conducted by a qualified professional.

7.3.1.2 Snapping Turtle

The 30 m setback presented above, to protect Shirley's Brook and fish habitat, is sufficient to protect *candidate* special concern and rare wildlife habitat (snapping turtle).

To protect snapping turtle that may transit the site, prior to any site work, reptile and amphibian exclusion fencing should be installed around the entire perimeter of the development area to prevent the migration of snapping turtles and other wildlife into the construction zone. The temporary exclusion fencing will also provide a visual demarcation of the development area for workers during construction. Exclusion fencing should follow the protocols outlined in the Species at Risk Branch: Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing Version 1.1 (MNRF, July 2013).

Additionally, all stockpiled material should be covered with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.

7.4 Species at Risk

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

In addition to no SAR observations, no critical habitat for SAR bats (cave, crevice, or maternity roosts) were identified on-site. In accordance with MECP best management practices, to protect roosting and foraging bats, tree removal where required should take place outside of the spring and summer active season (typically March 15 to November 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.

In GEMTECs experience on similar development applications and consultation with the MECP for projects and properties of similar size and scale, the above mitigation/avoidance measures are sufficient to ensure no negative impacts to SAR bats. In eastern Ontario habitat is not a limiting factor, as such the MECP recommends the use of avoidance timing window for clearing of trees (>10cm in diameter) to avoid impacts to SAR bat species. If timing windows can be adhered to, the project will not impact SAR bats, and it is GEMTECs opinion that no further consultation with the MECP is required to address impacts to SAR bats.

Should any components of the proposed project require tree clearing within between March 15 and November 30, further consultation with the MECP may be required.

7.4.2 Blanding's Turtle

With the establishment of a 30 m setback from Shirley's Brook, Blanding's turtle habitat impacted by the proposed development includes 0.065 ha of Category 2 habitat and 0.67 ha of Category 3 habitat on-site. The proposed grading and multi-use path, within the 30 m setback, has the potential to impact an additional 0.11 ha Category 2 habitat. Due to the presence of Blanding's turtle in the surrounding area, presence of Category 2 and Category 3 habitat on-site and that development cannot avoid impacts to regulated Category 2 and Category 3 habitat, an Information Gathering Form is required to be submitted to the MECP to determine if the proposed development plan requires an authorization under the ESA. When consultation is complete, confirmation from the MECP will be appended to this EIS.

The following mitigation measures are expected to be implemented to avoid contravention of the ESA:

- Prior to any site work, reptile and amphibian exclusion fencing should be installed around the entire perimeter of the construction area to prevent the migration of Blanding's Turtles and other wildlife into the construction zone. The temporary exclusion fencing will also provide a visual demarcation of the development area for workers during construction. Exclusion fencing should follow the protocols outlined in the Species at Risk Branch: Best Practices Technical Note: Reptile and Amphibian Exclusion Fencing Version 1.1 (MNRF, July 2013).

- Each day of construction a daily pre-work sweep of the construction area should occur to ensure no SAR are present and to remove any wildlife from inside the construction area.
- All staff working on-site should be provided Species at Risk training to identify species at risk with a potential to occur on-site including: Blanding's turtle. Training will also outline the stop work procedures and MECP reporting/consultation prior to resuming work.
- During construction if any SAR is identified on-site all work should stop and a qualified professional and the MECP should be contacted for next steps. SAR sightings should be reported to the MECP and the NHIC.
- Heavy-duty silt fencing should be installed and maintained during construction and whenever soil is exposed; the incorporation of lot-side swales are intended to promote infiltration and direct stormwater runoff to road side ditches instead of towards adjacent waterbodies.
- Cover all stockpiled material with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.
- Following construction completion, property managers will be provided with information and awareness packages for SAR that have the potential to occur on their property. Information and awareness packages will include information on species identification, life-history, and habitat use for all species at risk with a potential to occur on-site, including Blanding's turtle. Information packages will also include contact/reporting options to the MECP and NHIC is species are encountered.

7.5 Wildlife

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

- To protect wildlife during construction, construction should be completed in accordance with the best practices outlined in Protocols for Wildlife During Construction, from the City of Ottawa (Ottawa, 2022b), and Bird-Safe Design Guidelines from the City of Ottawa (Ottawa, 2022a)
- Vegetation removal should occur outside of March 15 to November 30 to avoid the key breeding bird period, bat summer active season, and reptile and amphibian active season. The timing windows provides protection of migratory birds, roosting bats, migrating reptiles and amphibians and avoids contravention of the Migratory Bird Convention Act and Endangered Species Act. If vegetation clearing activities must take place during the timing window than a nest and roost survey shall be conducted by a qualified professional.
- Reptile exclusion fencing should be installed around the entire construction area prior to construction commencing to prohibit the movement of turtles and amphibians into the construction area. Reptile exclusion fencing should follow guidelines established in *Species at Risk Branch Best Practices Technical Note – Reptile and Amphibian Exclusion Fencing* (OMNRF, 2013b).

- Cover all stockpiled material with a geotextile to prevent turtles from nesting in the material between May 1 and August 1 of any year.
- The use of outdoor flood lights and generation of excessive noise should be restricted to daytime hours to avoid disturbance of wildlife within the study 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.

7.6 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.
- Maintain as much permeable surface as possible in future development plans to minimize the generation of storm water runoff.
- Silt fencing should be installed along all setbacks to provide visual demarcation of the setbacks and to prevent machinery encroachment and sediment transport.
- 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 the development application for Part of Lot 10, Concession 4, in the Geographic Township of March, Ottawa, Ontario, municipally addressed as 788 March Road, Ottawa, Ontario,

Based on the results of the impact analysis, impacts to the 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 development.

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

- No significant impacts to natural heritage features identified on-site, including, Shirley's Brook, fish habitat, significant wildlife habitat or habitats of species at risk are anticipated as a result of future development.
- The proposed development has the potential to impact species at risk habitat for Blanding's turtle; as such, the project will require further registration with the MECP through the submission of an Information Gathering Form and Notice of Activity.
- The proposed project complies with the natural heritage policies of the Provincial Policy Statement.
- The proposed development complies with the natural heritage policies of the City of Ottawa Official Plan, and the Shirley's Brook and Watts Creek Subwatershed Study (Dillon, 1999).

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 SINA and is intended for the exclusive use of SINA. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC and SINA. 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.

Emily Young, B.Sc.
Junior Biologist

Zachary Anderson, B.Sc.
Biologist

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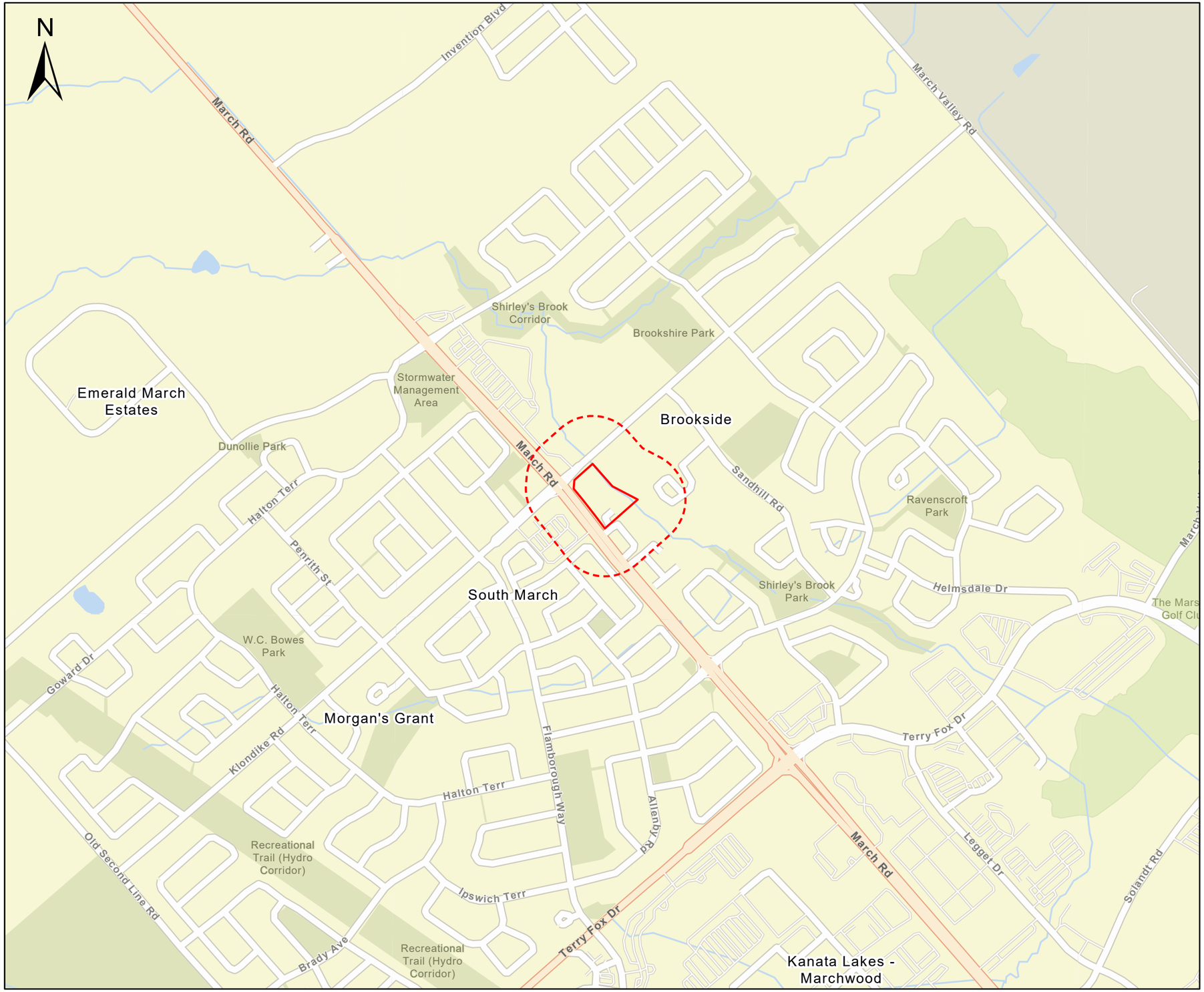
APPENDIX A

Report Figures



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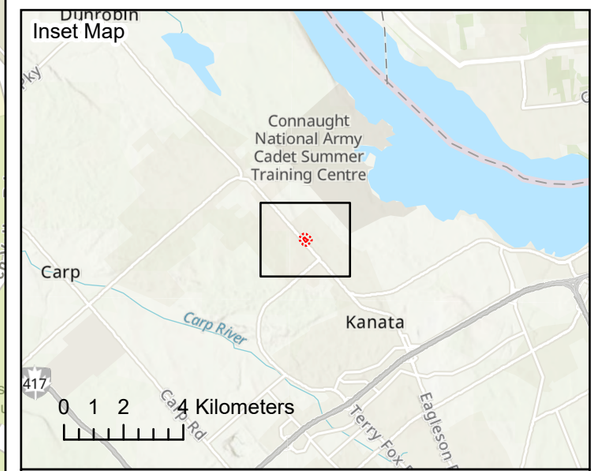
- Study Area



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Client:	Project:
SINA	103027.001

Location
788 March Road
Ottawa, Ontario

Drwn By:	Chkd By:	
E.P.	T.W.	Site Location

Date: May 2024	Rev.	
© King's Printer for Ontario	0	Figure: A.1

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: World Topographic Map: City of Ottawa, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada
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Legend

- Study Area
- Property Boundary
- Local Wetland
- Watercourse

Scale
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0 15 30 60 90 120 Meters

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SINA	103027.001

Location
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Ottawa, Ontario

Drwn By:	Chkd By:	
E.P.	T.W.	Site Layout

Date: May 2024	Rev.	
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Coordinate System: NAD 1983 UTM Zone 18N
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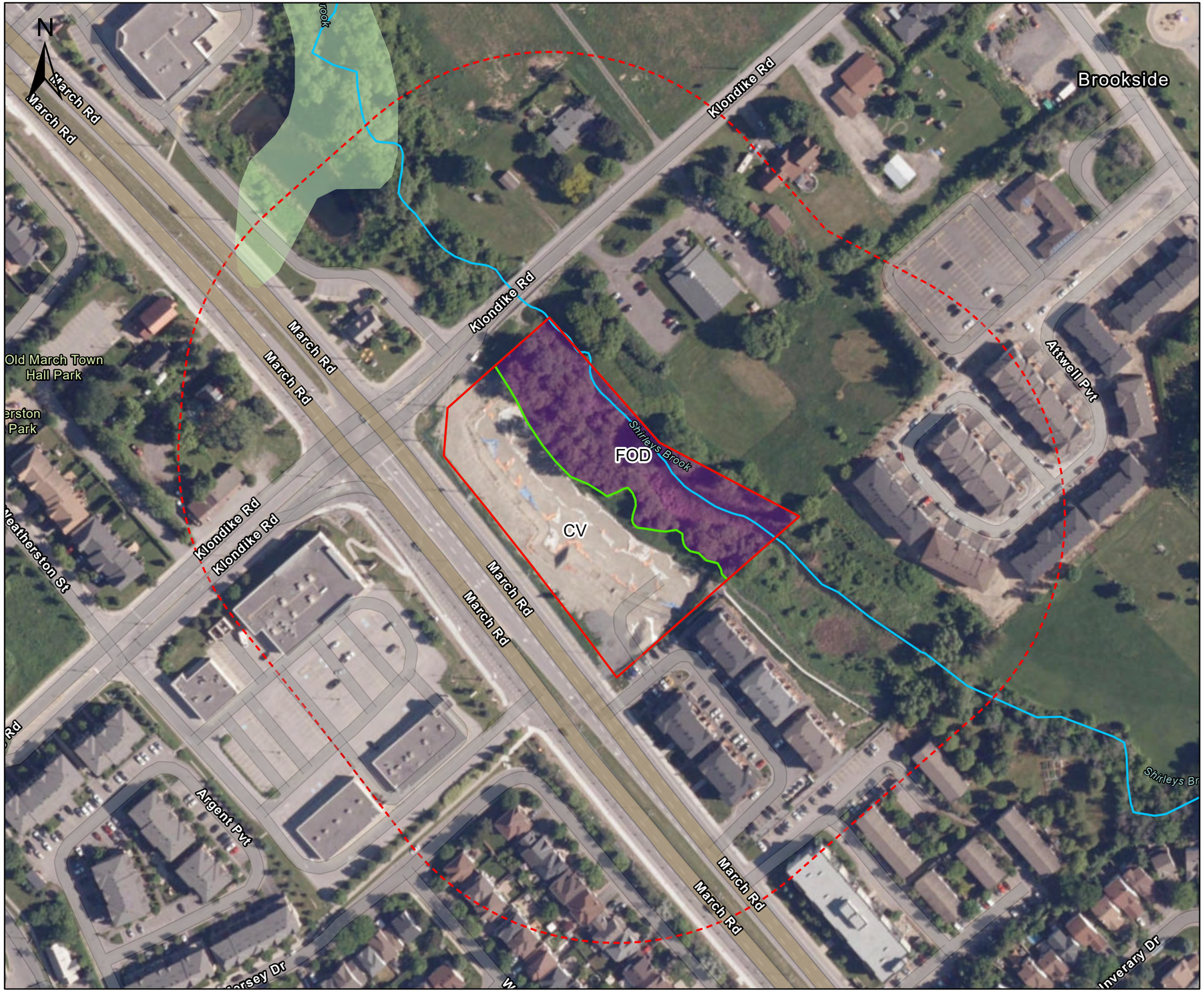
City of Ottawa 2022 Imagery:



Legend

- Property Boundary
- Study Area
- Watercourse
- Local Wetland
- Riparian Area
- Vegetation Community

CV: Constructed
FOD = Deciduous Forest

Scale
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0 15 30 60 90 120 Meters

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Location
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Ottawa, Ontario

Drwn By:	Chkd By:	
C.Z.	T.W.	Vegetation Communities

Date: May 2024	Rev.	Figure: A.3
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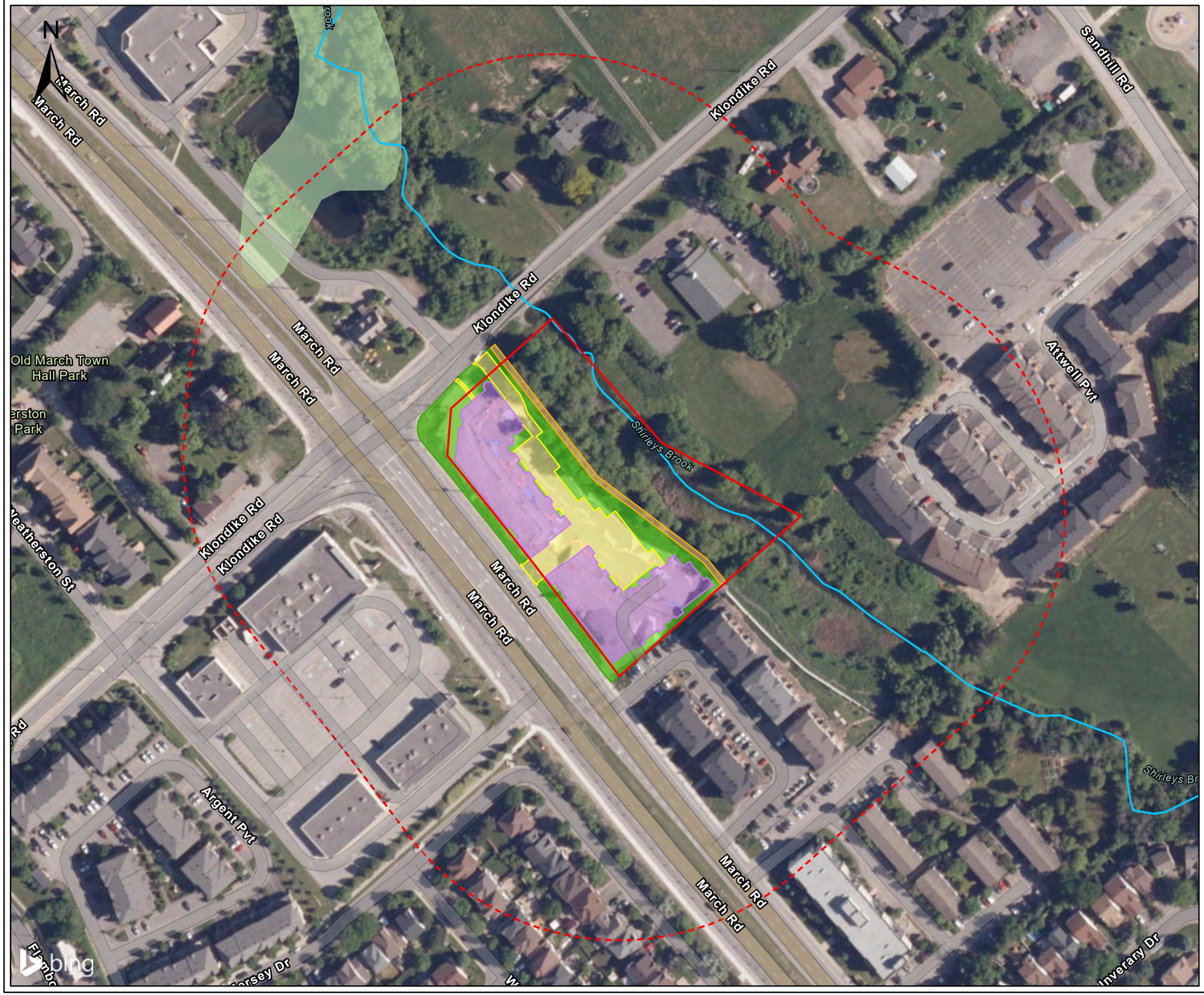
City of Ottawa 2022 Imagery:



Legend

- Property Boundary
- Study Area
- Local Wetland
- Watercourse

Development Concept

- Proposed Paved Area
- Proposed Building Footprint
- Proposed Soft Landscape Area
- Proposed Bicycle Path

Scale
1:1,800
0 15 30 60 90 120 Meters

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Location
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Drwn By:	Chkd By:	
E.P.	T.W.	Development Plan

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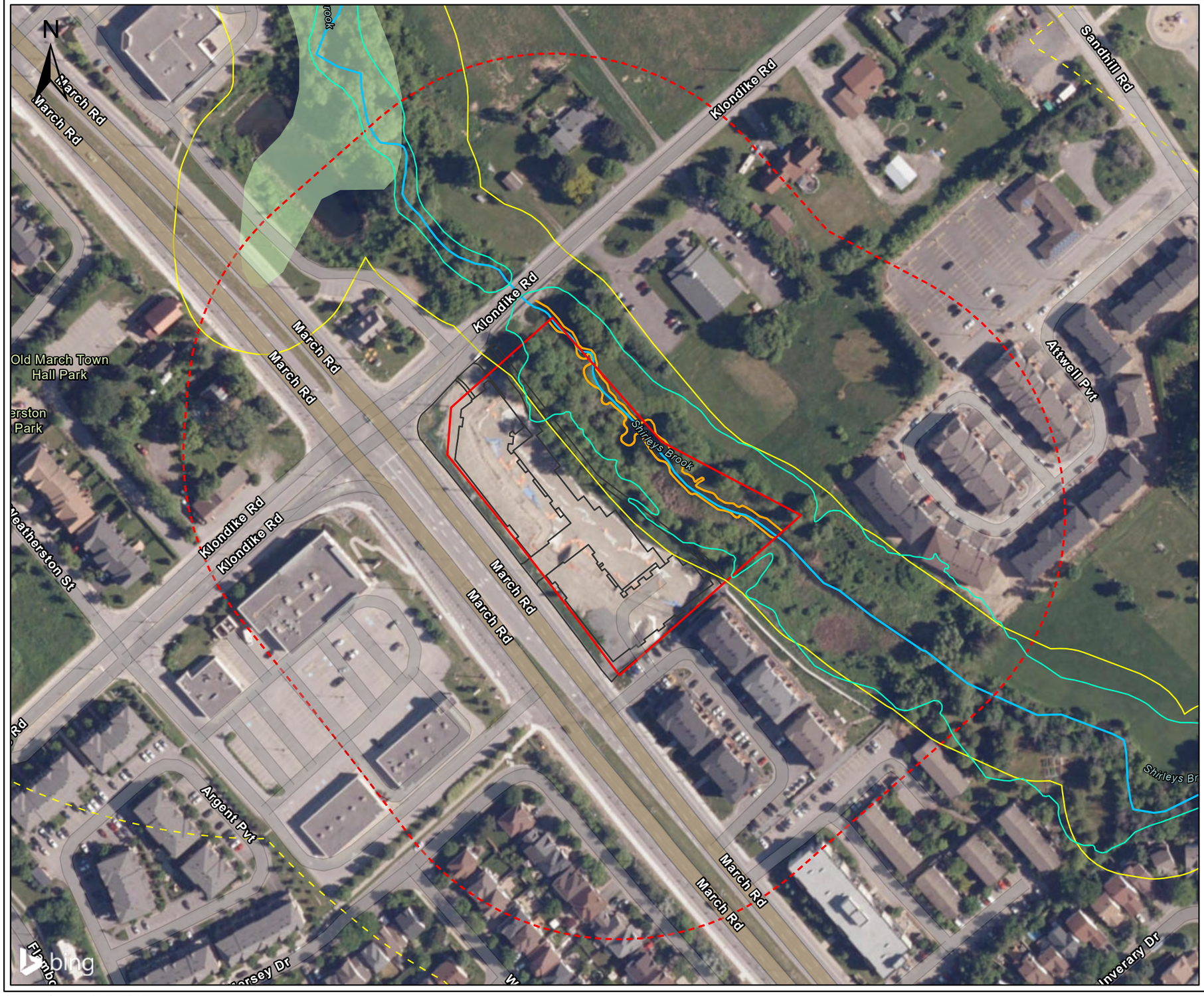
City of Ottawa 2022 Imagery:



Legend

- Property Boundary
- Study Area
- Local Wetland
- Watercourse
- Top of Bank
- Development Plan
- 1:100 Year Floodplain
- Blanding's Turtle Habitat - Category 2
- Blanding's Turtle Habitat - Category 3

Scale
1:1,800
0 15 30 60 90 120 Meters

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Location
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Drwn By:	Chkd By:	
E.P.	T.W.	Natural Heritage Features

Date: May 2024	Rev.	
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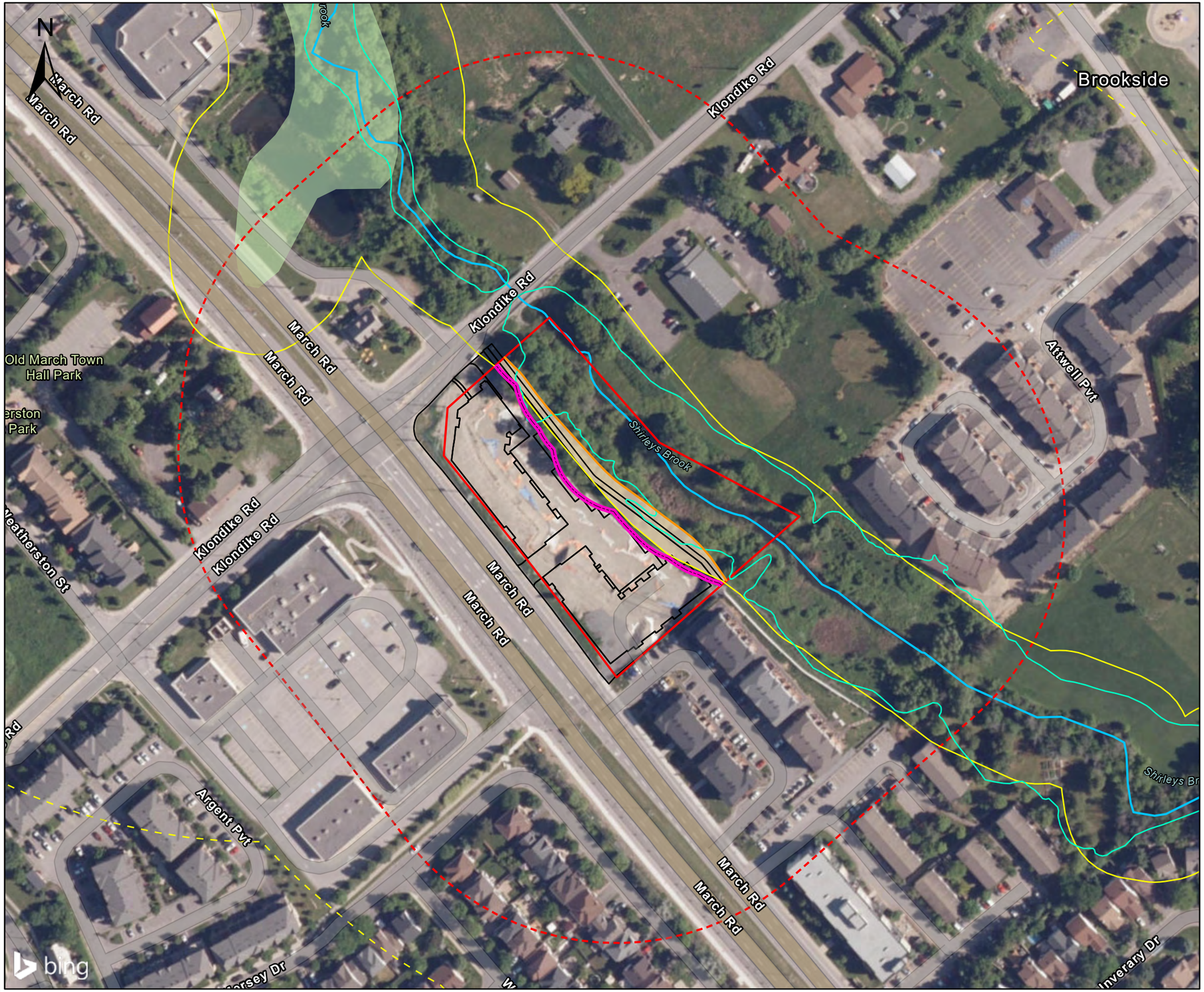
City of Ottawa 2022 Imagery:



Legend

- Property Boundary
- Study Area
- Local Wetland
- Watercourse
- Development Plan
- 1:100 Year Floodplain
- Blanding's Turtle Habitat - Category 2
- Blanding's Turtle Habitat - Category 3
- Impacted Blanding's Turtle Habitat - Category 2
- Limits Of Grading
- 30 m Setback

Scale
1:1,800
0 15 30 60 90 120 Meters

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SINA	103027.001

Location
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Ottawa, Ontario

Drwn By:	Chkd By:	
E.P.	T.W.	Mitigation Measures

Date: May 2024	Rev.	Figure: A.6
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Coordinate System: NAD 1983 UTM Zone 18N
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City of Ottawa 2022 Imagery:

APPENDIX B

Site Photographs

Site Photograph 1: Cultural Meadow (CUM)

Site Photograph 2: Vacant Development Area

Site Photograph 3: Woodland

Site Photograph 4: Shirley's Brook

GEMTEC Consulting Engineers and Scientists	Project: Environmental Impact Statement, Proposed Development Application 788 March Road, Ottawa, Ontario	**APPENDIX B**	**Site Photographs**
		File No. 103027.001	

APPENDIX C

Report Summary Tables

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

Common Name	Scientific Name	S-Rank	Evidence
Avian Species			
American crow	*Corvus brachyrhynchos*	S5	Heard calling
American goldfinch	*Spinus tristis*	S5	Heard calling, observed on-site
Black-capped chickadee	*Poecile atricapillus*	S5	Heard calling, observed on-site
Blue jay	*Cyanocitta cristata*	S5	Heard calling
Cedar waxwing	*Bombycilla cedrorum*	S5	Heard calling, observed on-site
Common grackle	*Quiscalus quiscula*	S5	Heard calling, observed on-site
Common raven	*Corvus corax*	S5	Heard calling, observed on-site
Common yellowthroat	*Geothlypis trichas*	S5B,S3N	Heard calling, observed on-site
Gray catbird	*Dumetella carolinensis*	S5B,S3N	Heard calling, observed on-site
Mourning dove	*Zenaida macroura*	S5	Heard calling, observed on-site
Song sparrow	*Melospiza melodia*	S5	Heard calling, observed on-site
Swamp sparrow	*Melospiza georgiana*	S5B,S4N	Heard calling, observed on-site
White-breasted nuthatch	*Sitta carolinensis*	S5	Heard calling, observed on-site
Yellow warbler	*Setophaga petechia*	S5B	Heard calling, observed on-site
Mammalian Species			
Eastern gray squirrel	*Sciurus carolinensis*	S5	Observed on-site
Northern raccoon	*Procyon lotor*	S5	Observed tracks on-site
White-tailed deer	*Odocoileus virginianus*	S5	Observed tracks on-site
Amphibian Species			
American toad	*Anaxyrus americanus*	S5	Observed on-site

Notes:
* Denotes a Species at Risk
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 HABITATS OF SEASONAL CONCENTRATION AREAS

Wildlife Habitat	Further Considered in EIS	Rationale
Deer Yarding Areas and Winter Congregation Areas	No	As outlined in the the Signficant Wildlife Habitat Criteria Schedules (OMNRF, 2015) winter deer yards and deer managment are an MNRF responsibility. Based on review of publically available data from the OMNRF on Land Information Ontario Geo-hub, no deer yards or winter congregation areas have been identified on-site.
Colonial Bird Nesting Habitat	No	No suitable habitat located on-site or within the study area to support colonial bird nesting habitat.
Waterfowl Stopover and Staging Areas	No	No wetland habitat within the development area to provide suitable conditions for waterfowl stopover and staging areas (aquatic). Terrestrial stopover and staging areas are not present on-site.
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	The site does not meet the minimum size criteria of >15 hectares of upland habitat, and lacks a combination of suitable upland and woodland habitat to support raptor wintering area.
Bat Hibernacula	No	Cave and crevice habitat is not present on-site or within the study area.
Bat Maternity Colonies	No	Treed areas along Shirley's Brook do not provide sutiable size, age or structure to support cavity trees and bat maternity colonies.
Turtle Wintering Area	No	Shirley's Brook tributaries are not of sufficient depth, or substrate (i.e. rock beds) to provide suitable conditions to support turtle wintering area.
Reptile Hibernaculum	No	No structures such as large rock piles, bedrock outcrops, cervices or other karstic features which penetrate below the frost line occur 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 Stopver Area	No	The site is not located within 5 km of Lake Ontario and therefore does not meet the defining criteria.

TABLE C.3
SCREENING RATIONALE FOR SPECIALIZED WILDLIFE HABITATS

Specialized Wildlife Habitat	Further Considered in EIS	Rationale
Waterfowl Nesting Area	No	No suitable wetland habitat on-site to support waterfowl nesting.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	No	No suitable habitat is located on-site or within the study area to 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. Contiguous forest stands >30 ha with interior forest habitat >10 ha does not occurr on-site. No sticks nests were observed on-site.
Turtle Nesting Habitat	No	Suitable habitat within 100 m of a wetland (exposed mineral soil with minimal vegetation cover) is not present on-site.
Seeps and Springs	No	No seeps or springs where identified on-site.
Woodland Amphibian Breeding Habitat	No	No suitable woodland habitat present to support woodland amphibian breeding habitat.
Wetland Amphibian Breeding Habitat	No	No wetland habitat present to support wetland amphibian breeding habitat.
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 do not meet the definind size criteria (> 30 ha) or have interior forest habitat.

TABLE C.4
SCREENING RATIONALE FOR HABITATS OF SPECIES OF CONSERVATION CONCERN

General Habitats of Species of Conservation Concern	Further Considered in EIS	Rationale
Marsh Breeding Bird Habitat	No	No wetland habitat present on-site to support marsh breeding bird habitat.
Open Country Breeding Bird Habitat	No	No suitable meadow habitat occurs on-site to support open country breeding bird habitat.
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. No thicket habitat on-site to support shrub/early succesional breeding bird habitat.
Terrestrial Crayfish Habitat	No	Terrestrial crayfish are only found within southwestern Ontario (MNRF, 2012).
Special Concern and Rare Wildlife Species	Yes	Based on site observations and occurrence data from the NHIC and Ontario Breeding Bird Atlas the following species of special concern have occurred on-site and/or within the surrounding area: bald eagle, barn swallow, Canada warbler, common nighthawk, eatern wood-pewee, golden-winged warbler, wood thrush and snapping turtle.

TABLE C.5
SCREENING RATIONALE FOR ANIMAL MOVEMENT CORRIDORS

General Habitats of Species of Conservation Concern	Further Considered in EIS	Rationale
Amphibian Movement Corridor	No	No *confirmed* amphibian movement corridors have been identified on-site.
Deer Movement Corridor	No	No winter deer yards have been identified on-site.

TABLE C.6
SCREENING RATIONALE FOR POTENTIAL SPECIES AT RISK ON-SITE OR WITHIN STUDY AREA

Species	ESA Status	Column1	Habitat Use	Probability of Occurrence On-Site or Within Study Area	Rationale
Avian					
Bald Eagle	Special Concern	Confirmed nest at Shirley's bay since 2012.	Nest in mature forests near open water.	Low	No suitable forest habitat near open water to support bald eagle. NHIC data indicates species has been observed within 1 km of the site. Species was not observed on-site during field investigation.
Bank Swallow	Threatened	12 confirmed, 2 probable and 8 possible nests in recent OBBA.	Colonial nester, burrows in eroding silt, to sand banks, sand pit walls, etc.	Low	Site lacks suitable habitat for nesting colonies. No colonies or individuals were noted during field investigation.
Barn Swallow	Special Concern	33 confirmed, 2 probable, and 3 possible nests in recent OBBA.	Nests in barns and other semi-open structures. Forages over open fields and meadows.	Moderate	No suitable grassland habitat available for foraging on-site or structures within the broader study area to provide nesting habitat. NHIC data indicates species has been observed within 1 km of the site. Species was not observed on-site during field investigation.
Bobolink	Threatened	Widespread, confirmed or probable nests found in 39 of 40 local atlas squares during recent OBBA. Critical habitat identified in northwestern, southern and eastern Ottawa.	Nests in dense tall grass fields and meadows, low tolerance for woody vegetation.	Low	No suitable grassland habitat available on-site. Suitable habitat maybe present in broader study area. Species was not observed on-site during field investigation.
Canada Warbler	Special Concern	1 confirmed, 2 probable, 6 possible nests during recent OBBA. No critical habitat identified in region.	Prefers wet forests with dense shrub layers	Low	No suitable forest habitat on-site to support Canada warbler. NHIC data indicates species has been observed within 1 km of the site. Species was not observed on-site during field investigation.
Cerulean Warbler	Threatened	No nests reported during recent OBBA. SARO and SARA range maps include part of Ottawa.	Prefers mature deciduous forest habitat.	Low	No suitable forest habitat on-site to support cerulean warbler. No historical data records for species within the study area. Species was not observed on-site during field investigation.
Chimney Swift	Threatened	3 confirmed, 2 probable, and 11 possible nests in recent OBBA.	Nests in traditional-style open brick chimneys.	Low	Suitable nesting structures are present within the broader study area. No historical data records for species within the study area. Species was not observed on-site during field investigation.
Common Nighthawk	Special Concern	6 probable, 5 possible nests reported in recent OBBA. No critical habitat identified in Ottawa region.	Nests in a variety of open sites: beaches, fields and gravel rooftops.	Moderate	No suitable habitat on-site to support common nighthawk. NHIC data indicates species has been observed within 1 km of the site. Species was not observed on-site during field investigation.
Eastern Meadowlark	Threatened	22 confirmed, 11 probable and 3 possible nests reported in recent OBBA. Critical habitat identified in northwestern Ottawa.	Nests and forages in dense tall grass fields and meadows, higher tolerance to woody vegetation.	Low	No suitable grassland habitat available on-site. Suitable habitat maybe present in broader study area. Species was not observed on-site during field investigation.
Eastern Whip-poor-will	Threatened	7 squares with probable nests and 10 with possible nests in recent OBBA. Critical habitat tentatively identified in 4 squares in western Ottawa.	Nests on the ground in open deciduous or mixed woodlands with little underbrush, and bedrock outcrops.	Low	No suitable woodlands on-site for eastern whip-poor-will.
Eastern Wood-Pewee	Special Concern	4 possible, 15 probable and 19 confirmed nests in recent OBBA for Ottawa area	Woodland species, often found near clearings and edge habitat.	Moderate	Suitable habitat on-site and within the study area to support eastern wood pewee. NHIC data indicates species has been observed within 1 km of the site. Species was not observed on-site during field investigation.
Evening Grosbeak	Special Concern	5 confirmed, 6 probable, 8 possible nests in recent OBBA.	Nests in trees or large shrubs, preference to large coniferous forests, will use deciduous. Overwinters in Ottawa.	Low	Suitable coniferous forest habitat does not occur on-site. Spceies was not observed during site investigation.
Golden-winged Warbler	Special Concern	1 confirmed, 1 probable nest in recent OBBA. Critical habitat identified in Quebec, northwest of Ottawa.	Ground nesting, edge species. Breeds in successional scrub habitats surrounded by forests.	Low	Preferred scrub habitat surrounded by forest is not present on-site or within the study area. NHIC data indicates species has been observed within 1 km of the site. Species not observed during field investigation.
Grasshopper Sparrow	Special Concern	4 confirmed, 5 probable and 2 possible nests in recent OBBA.	Ground-nesting grassland species. Prefers fields with low sparse vegetation on sand, alvars or poor soils.	Low	No suitable grassland habitat on-site or within the study area to support grasshopper sparrow. Species was not observed on-site during field investigations. No historical data records for species within the study area.
Least Bittern	Threatened	Confirmed nesting in 1 square, 3 probable and 4 possible in recent OBBA. Mississippi Snye identified as critical habitat.	Prefers marshes, shrub swamps, usually near cattails	Low	No suitable marsh habitat on-site or within the study area.
Loggerhead Shrike	Endangered	Possible nests in Burnt Lands Provincial Park and Richmond area. Critical habitat in Montague Township, however no confirmed nests since 2002.	Prefers grazed pastures with short grass and scattered shrubs, especially hawthorn.	Low	Preferred pasture habitat and shrub vegetation does not occur on-site. No historical data records for species within the study area.
Olive-sided Flycatcher	Special Concern	1 probable, 1 possible nest in recent OBBA.	Forest edge species, forages in open areas from high vantage points in trees.	Low	Preferred habitat present on-site and within the study area. Species was not observed during the field investigation, nor through any online databases.
Peregrine Falcon	Special Concern	1 confirmed nest in recent OBBA and second nest established in 2011 in the Ottawa downtown.	Nests on cliffs near water and on more anthropogenic structures such as tall buildings, bridges, and smokestacks.	Low	Site lacks suitable nesting structure for peregrine falcon.
Red-headed Woodpecker	Endangered	1 confirmed, 1 probable and 2 possible during recent OBBA. Critical habitat identified in western Ottawa. Nesting pair reported from village of Constance Bay in recent years.	Prefers open deciduous woodlands, particularly those dominated by oak and beech.	Low	No suitable habitat on-site for red-headed woodpecker.
Rusty Blackbird	Special Concern	No nests in recent OBBA. Primarily observed during migration.	Wet wooded or shrubby areas (nests at edges of Boreal wetlands)	Low	Suitable habitat does not occur on-site or within the study area.
Short-eared Owl	Threatened	1 confirmed, 2 probable, 2 possible nests in recent OBBA.	Ground nester, prefers open habitats, fields and marshes.	Low	Suitable field habitat not present on-site or within the study area. Species not observed on-site. No historical occurrence records for species on-site or within the study area.
Wood Thrush	Special Concern	5 possible, 15 probable, and 16 confirmed nests in recent OBBA for Ottawa area.	Prefers deciduous or mixed woodlands.	Moderate	Suitable woodland habitat available on-site and within the broader study area. NHIC data indicates species has been observed within 1 km of the site. Species was not observed on-site during field investigation.
Mammalian					
Eastern small-footed Myotis	Endangered	Historical record in downtown Ottawa.	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 and forest habitat adjacent to site. Available habitat on-site may meet bat maternity colony requirements and provide foraging and non-maternal roost habitat.

TABLE C.6
SCREENING RATIONALE FOR POTENTIAL SPECIES AT RISK ON-SITE OR WITHIN STUDY AREA

Little Brown Myotis	Endangered	Various sites in central and western parts of City. Critical habitat (hibernacula) identified to northwest of Ottawa.	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 and forest habitat adjacent to site. Available habitat on-site may meet bat maternity colony requirements and provide foraging and non-maternal roost habitat.
Northern myotis (Northern Long-eared Bat)	Endangered	Historical record in downtown Ottawa, more recent sites in east (Orleans, Clarence-Rockland). Critical habitat (hibernacula) identified to northwest of Ottawa.	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	Unknown; historical records from sites in urban Ottawa, Lanark County. Critical habitat (hibernacula) identified to northwest of Ottawa.	Roosts in trees, rock crevices and occasionally buildings during summer. Overwinters in caves and mines.	Moderate	Potentially suitable anthropogenic structures and forest habitat adjacent to site. Available habitat on-site may meet bat maternity colony requirements and provide foraging and non-maternal roost habitat.
Reptilian					
Blanding's Turtle	Threatened	Scattered throughout, with numerous sites in western half of City. Critical habitat present in Ottawa.	Inhabits quiet lakes, streams and wetlands with abundant emergent vegetation. Frequently occurs in adjacent upland forests.	Moderate	No known occurrence of Blanding's turtle on-site, however Blanding's turtle are known to occur in the surrounding area and within Shirley's Brook. Thesite does provide potentially suitable aquatic habitat for Blanding's turtle within Shirley's Brook.
Snapping Turtle	Special Concern	Widespread	Highly aquatic species, found in a wide variety of wetlands, water bodies and watercourses.	Moderate	Suitable habitat for snapping turtlemay occur within Shirley's Brook on-site. NHIC data indicates species has been observed within 1 km of the site. Species not observed on-site during field investigation.
Plants					
American Ginseng	Endangered	Various. Critical habitat broadly identified in Ottawa area.	Rich, moist, relatively mature deciduous forests.	Low	Woodlands on-site are unlikely to support habitat requirements for American ginseng growth.
Black Ash	Endangered	Scattered throughout.	Predominantly a wetland species, found in swamps, floodplains and fens.	Moderate	No suitable wet forest habitat present on-site or within the study area. NHIC database indicates species to be present within 1 km. Species not observed on-site during field investigation.
Butternut	Endangered	Widespread	Inhabits a wide range of habitats including upland and lowland deciduous and mixed forests.	Moderate	Suitable areas in a regenerative state on-site. Species was not observed on-site during the site investigation. NHIC database indicates species to be present within 1 km.
Insects					
American Bumble Bee	Special Concern	es historical sightings in Ottawa and	Habitat generalist; mixed woodlands, variety of open habitat. Nests at or above ground leve, often in mats of long grass but also in other available shelters.	Moderate	Potentially suitable foraging habitat available for American bumble bee on-site.
Bogbean Buckmoth	Endangered	Richmond Fen	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.
Gypsy Cuckoo Bumble Bee	Endangered	Historic occurrences only. Range in Ontario uncertain.	Inhabits a wide range of habitats: open meadows, agricultural and urban areas, boreal forests and woodlands.	Low	Currently the only known population is in Pinery Provincial Park
Monarch Butterfly	Special Concern	Widespread	Caterpillars require milkweed plants confined to meadow and open areas. Adult butterflies use more diverse habitat with a variety of wildflowers	Moderate	Potentially suitable foraging vegetation available for Monarch on-site.
Mottled Duskywing	Endangered	Constance Bay area, Burnt Lands Alvar	Larval food plant (New Jersey Tea) found in sandy areas and alvars.	Low	Sandy areas and alvars not present in the study area.
Nine-spotted Lady Beetle	Endangered	Historically present but no reports in Ontario since mid-1990s	Habitat generalist	Low	No recent occurrence reports in the area, thought to be locally extirpated.
Rusty-patched Bumble Bee	Endangered	Historic records in Ottawa and Gatineau	Habitat generalist	Low	Currently the only known population occurs in Pinery Provincial Park.
Transverse Lady Beetle	Endangered	Unknown in Ottawa region. No southern Ontario records since 1985	Habitat generalist	Low	No new records of traverse lady beetle in Ottawa area, species thought to be absent in former habitats.
West Virginia White Butterfly	Special Concern	Unknown. No NESS or NHIC records. SARO range map includes Ottawa.	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	Unknown. Historic occurrences and a few recent occurrences in Eastern Ontario/Western Quebec region	Habitat generalist; mixed woodlands, variety of open habitat	Moderate	Potentially suitable foraging habitat available for yellow-banded bumble bee on-site.

APPENDIX D

Tree Conservation Report

GEMTEC
www.gemtec.ca

Tree Conservation Report
Proposed Development Application
788 March Road
Ottawa, Ontario

GEMTEC
www.gemtec.ca

Submitted to:

SINA
3030 Boul. Le Carrefour, Suite 1200
Laval, Quebec
H7T 2P5

Tree Conservation Report
Proposed Development Application
788 March Road
Ottawa, Ontario

June 6, 2024
Project: 103027.001

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1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by SINA to carry out a Tree Conservation Report (TCR) for the property located at 788 March Road, in Ottawa, Ontario, hereafter referred to as the "subject property". The site location is provided in Figure A.1 in Appendix A.

1.1 Purpose

The proponent is seeking a development application for the property located at 788 March Road, in Ottawa, Ontario for future residential development. As a component of the development application, the City of Ottawa is requesting a TCR for the collective property. In accordance with the City of Ottawa's Tree Protection By-law (No. 2020-340) a TCR is required to identify trees to be retained and protected under future development scenarios and, where feasible, identify opportunities to offset the loss of trees that cannot be retained or contribute to the City's forest cover targets.

The property has an approximate size of 1.21 hectares (ha). The proposed site development includes a mixed-use apartment building with road access via March Road and Klondike Road. The existing site layout and proposed development is provided in Figure A.2 and Figure A.3, respectively, in Appendix A.

1.2 Definitions

Terms and abbreviations used throughout the remainder of this report are summarized below.

Diameter at Breast Height (DBH), is defined as the diameter of the tree trunk measured at a height of 1.2 metres (m) above ground surface for trees of 10 centimeters (cm) in diameter and greater.

Critical Root Zone (CRZ), is defined as the ground area within a circumference around the tree trunk calculated as 10 cm from the trunk of the tree for every one centimeter of tree truck diameter at breast height.

Distinctive Tree, within the City of Ottawa, is defined as any tree with a DBH of 30 cm or greater within the inner urban area and with a DBH of 50 cm or greater within the suburban area and rural area. For the purposes of this report, a distinctive tree is considered to be a tree with a DBH of 50 cm or greater, as the subject property is located within the suburban boundary.

2.0 METHODOLOGY

2.1 Desktop Review

To complete the TCR, digital colour air photos of the site available from GeoOttawa were reviewed from 1965 to 2022 to identify natural features, including historical trees, present on-site and in the vicinity of the site.

Based on a review of historical air photos, the general surrounding area has seen an increase in residential and commercial development since 1991. Development was present on-site between 1965-1991 but became vacant until present day configuration in 2021. No alterations to land use were noted during review.

2.2 Field Investigations

In addition to the completion of a desktop review of historical air photos, a site visit was conducted on September 22, 2023, from 12:15 to 16:15, to document and identify all trees on-site with a DBH greater than 10 cm. The site investigation utilized transects bisecting the property to document the health of each tree greater than 10 cm in DBH, the tree location, and the tree species.

An additional tree survey was completed in conjunction with topographic surveys by J.D. Barnes Ltd. on May 23, 2024. All stems greater than 10cm DBH within 5 m of the proposed bicycle path were surveyed and given a tree identifier. Many of these surveyed trees were previously identified by GEMTEC during the September 2023 tree inventory; however, some additional stems were added.

To determine the presence or absence of species at risk on-site and adjacent to site, butternut were searched for during the transect surveys.

Site conditions during the site investigation were as follows: 21°C, no cloud cover, Beaufort 2 and no precipitation.

Site photographs taken during the field investigations are provided in Appendix B.

3.0 RESULTS

3.1 Existing Conditions

Development on-site currently consists of a vacant development area. No development exists on site, but the area of previous disturbance occupies an approximate area of 0.35 ha.

Outside of the existing disturbed area, the subject site consists of the riparian areas of Shirley's Brook that flows along the eastern property boundary. Numerous trees are present on the property, primarily along Shirley's Brook and within the riparian area. A summary of all trees on-site is provided in Section 3.2 below.

The land use in the vicinity of the site is characterized by commercial and residential land uses. Natural environmental features in the vicinity of the project, as summarized in Table 3.1 below, include surface water features. Surface water features on-site include Shirley's Brook.

Based on NHIC observation data, the following threatened and endangered Species at Risk (SAR) have been observed within 1 km of the subject property:, bobolink, eastern meadowlark, eastern whip-poor-will, least bittern, eastern small-foot myotis, little brown myotis, tri-colored bat, Blanding's turtle and black ash, butternut. No SAR species were identified on-site or in the area immediately adjacent to the property during the site investigation. However, based conservatively on the NHIC observation data, the KNUEA EMP (DST, 2015; Novatech, 2016), and observation data from the McKinley EIS (2020), the subject site contains regulated Category 2 and Category 3 habitat for Blanding's turtle. Butternut trees were specifically targeted for presence/absence during the survey, however no butternut were observed on-site or within the study area.

There are no other natural environmental features in the vicinity of the project, as summarized in Table 3.1 below.

Table 3.1 Summary of Natural Features Present On-site or Adjacent to Site

Natural Feature	Present On-site or Adjacent
Surface water or wetlands present	Present – Shirley's Brook
Steep slopes, valleys or escarpments	None
Urban Natural Features or Natural Environment Areas	None
Significant Woodlands	None
Greenspace Linkages	None
High Quality Specimen Trees	None
Rare plant communities or unique environmental features	None
Presence of Species at Risk	Present – Blanding's turtle, and SAR Bats

3.2 Tree Inventory Summary

A tree inventory was conducted on September 22, 2023. Trees on-site were identified, enumerated, and assessed for visual signs of distress and disease. Table C.1 in Appendix C provides a summary of all tree specimens on-site whose DBH was greater than 10 cm. CRZ values for trees with DBH greater than 10 cm are also present in Table C.1 in Appendix C. CRZ was not calculated for dead trees. The square root of the sum of squares method was used to calculate the DBH of trees with multiple stems. All trees with a DBH greater than 10 cm and their CRZ are illustrated on Figure A.4, in Appendix A.

Additional trees surveyed on May 23, 2024 by J.D. Barnes Ltd. were reviewed and compared to those inventoried by GEMTEC in 2023. Corresponding trees that were surveyed by both GEMTEC and J.D. Barnes were enumerated accordingly. Any trees that either party did not both identify, were added to Table C.1 in Appendix C.

Per the City of Ottawa's Tree Protection By-law (No. 2020-340), 11 trees on the subject site, were identified as a distinctive tree (DBH > 50 cm). Table 3.2 below details the results. For this report, dead standing trees were not included in the distinctive tree list, even if the DBH was greater than 50 cm.

Table 3.2 Summary of Distinctive Trees Present On-Site or Adjacent

Tree #	Species	DBH (cm)	Condition
1	Red Maple	59	Healthy
8	Manitoba Maple	86	Healthy
11	Manitoba Maple	52	Good
15	Red Maple	71	Healthy
29	Manitoba Maple	66	Healthy
35	Manitoba Maple	69	Poor
45	Manitoba Maple	79	Good
46	Manitoba Maple	57	Poor
64	Manitoba Maple	58	Poor
91	Manitoba Maple	50	Healthy
106	Manitoba maple	73	Healthy

None of the trees identified on-site are listed under the provincial Endangered Species Act.

In general, the tree community assemblage can be described as containing mature and semi-mature trees. Dominant tree species on-site were represented by Manitoba maple (*Acer*

negundo). Most of the observed ash species identified on-site were of poor health or dead, likely due to the presence of emerald ash borer. Many of the ash species were observed to have epicormic shoots (young shoots growing from near the base of the tree) indicative of stress and poor health conditions. Most other tree species were observed to be in good or healthy conditions.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on a review of the information summarized in Section 3.2, Table C.1 in Appendix C and the proposed development concept illustrated on Figure A.3, the following conclusions are provided:

- Out of 113 trees identified by GEMTEC on-site with a DBH greater or equal to 10 cm, 97 were identified as retainable and 16 trees were identified as conflict. The 16 trees identified as conflict, illustrated on Figures A.4a, A.4b. and A.4c, are considered non-retainable as they are in direct conflict with the development plan or greater than 30% of the trees CRZ will be impacted by the grading from the building and/or the approximate location of the pathway;
- 7 additional trees were identified by J.D. Barnes Limited on-site on May 23, 2024, with a DBH greater or equal to 10 cm, 3 were identified as retainable and 4 were identified as conflict. These additional trees are not included within the assessment of species, health or potential wildlife habitat. All additional trees are illustrated on Figures A.4a, A.4b and A.4c.
- 11 distinctive trees, meeting the City of Ottawa's Tree Protection (By-law No. 2020-340), requirements of DBH > 50 cm, were identified on-site, 3 of which were identified as conflict, and are likely not retainable under the current development plan;
- Trees on-site are of a typical upland or early successional species;
- 97 trees are in good/healthy condition and 16 trees are in poor or dead condition;
- 17 of the trees present on-site were observed to provide potential wildlife habitat (snag, active nest), 4 of which were identified as conflict and are considered not retainable under the current development plan;
- No Butternut [END] or Black Ash [END] trees were identified on-site or in the area immediately adjacent to site;
- None of the trees present on-site are protected under the Endangered Species Act, Ontario 2007;
- None of the trees on-site were identified to represent High Quality Specimen Tree; and
- All trees identified to be retained, including those within the limit of grading, will have their existing elevations around the critical root zone maintained.

4.1 Tree Conservation Recommendations

It is our opinion based on the results of the completed tree inventory that none of the trees on-site represent exceptional tree specimens, rare communities, nor do they provide any

conservation value or great ecological benefit. Based on the proposed development plan it is assumed that 100 of the total identified trees on the subject property are retainable and 20 of the trees were identified as conflict, non-retainable. Of the 20 conflict trees six were identified as having greater than 30% of their CRZ impacted (trees numbered 9, 8, 30, 35, 64 and T18). These trees occur within the grading area with greater than 30% of their root structures overlapping the development plan. 14 trees (trees numbered 32, 34, 37, 36, 38, 39, 40, 42, 54, 55, 81, T20, T38 and T40) were identified as directly in conflict with the development plan. The trunks of these trees occur within or on the boundary of the development plan or proposed bicycle path. Conflict trees are illustrated on Figures A.4a, A.4b and A.4c. The proposed bicycle path will be field fit in Spring 2026 and should consider maintaining the distinctive trees identified in this report, in addition to other healthier, more mature trees.

Based on the current development plan, most of the existing treed vegetation on-site will be conserved through the implementation of the 30 m top of bank setback. The proposed building will be situated within the vacant section of the site with exclusion fencing both protecting and limiting access to the conserved vegetation on-site. The grading plan, as designed by McIntosh Perry (2023), will tie into the downward slope, already present on-site, towards Shirley's Brook. Pre- and post-drainage patterns are expected to remain the same with water being directed to roadside ditches away from the conserved vegetation and Shirley's Brook. Future development that requires vegetation clearing should be offset through landscape planting. 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.

4.2 Recommended Mitigation Measures

The following mitigation measures and best practice recommendations are provided by GEMTEC to minimize and eliminate negative impacts to trees identified in Appendix C as retainable during potential future construction. Construction contractors shall apply the following measures outlined below to prevent damage and promote long-term survival of trees identified to be retained in the redevelopment plan for the site.

- All trees identified to be retained, including those within the limit of grading, should be clearly marked and the CRZ delineated with fencing to prevent encroachment and damage during construction. General prohibitions of activities within the fencing include:
    - No placement of construction material (including fill and equipment);
    - No construction activities (i.e. grading, machine operation, etc.) to avoid soil compaction and direct injury to the tree or its root system; and
    - No refueling or disposal of liquids.
- Tree protection should follow the tree protection specification provided by the City of Ottawa (2021). The Specification is provided in Appendix D;

- As per the City of Ottawa's Tree Protection By-law (No. 2020-340), a tree compensation plan may be brought forth by the City of Ottawa, by means of offsetting overall tree and vegetation removal;
    - As shown in the Landscape Plan, as designed by GJA INC. (2024), approximately 42 trees and 20 shrubs have been proposed to be planted as well as the creation of a naturalization bed and areas with native seed mix.
- If existing pavement surface around trees to be retained is going to be removed than temporary fencing should be installed to delineate the CRZ of each tree;
- If trees to be removed overlap with the CRZ of trees to be retained, cut roots at the edge of the retained CRZ and grind down stumps after tree removal, do not pull out stumps. If roots must be cut, roots 20 cm or larger should be cut at right angles with clean, sharp, horticultural tools, without tearing, crushing, or pulling;
- All tree service activities (i.e. removal, branch / root pruning, etc.) will be completed by or under the direction of an ISA certified arborist;
- Do not attach any signs, notices or posters to any tree identified to be retained;
- Do not damage the root system, trunk, or branches or any tree identified to be retained;
- Ensure that exhaust fumes from all equipment are directed away from tree canopy; and
- For the protection of migratory birds and SAR bat species, tree removal shall occur outside of March 15 – November 30 of any given year, to avoid the key breeding bird period as identified by Environment Canada and the bat active season as identified by the Ministry of Environment, Conservation and Parks (MECP). Adhering to the timing window will also avoid contravention of the Migratory Bird Convention Act and the Endangered Species Act. If vegetation clearing activities must take place outside of the timing window than a nest and roost survey shall be conducted by a qualified professional.

5.0 CLOSURE

This letter and the work referred to within it have been undertaken by GEMTEC Consulting Engineers and Scientists Ltd. (GEMTEC), and was prepared for SINA and is intended for the exclusive use of SINA This report may not be relied upon by any other person or entity without the express written consent of GEMTEC and SINA 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 letter has been prepared for the application notes and it is based in part, on visual observations made at the site, all as described in the report. Unless otherwise states, the findings contained in this report cannot be extrapolates or extended to previous or future site conditions or for portions of the site that were unavailable for direct investigation.

Once the location of the multiuse pathway has been determined in Spring 2026, GEMTEC will provide an addendum for the proposed impacted trees.

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

Sincerely,

Emily Young, B.Sc.
Junior Biologist

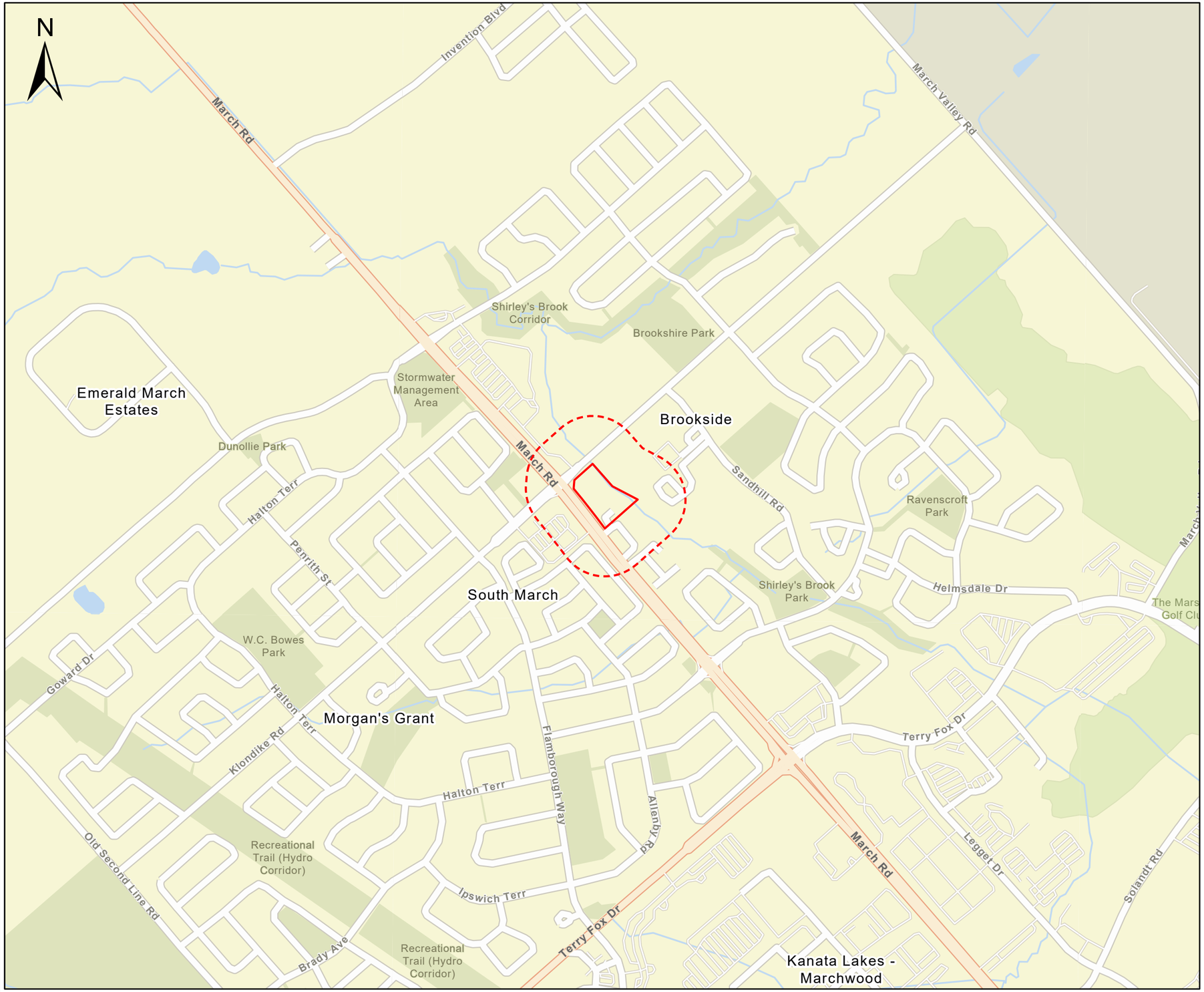
Zachary Anderson, B.Sc.
Biologist

6.0 REFERENCES

Ontario Ministry of Natural Resources and Forestry (OMNRF). 2019. Natural Heritage Information Centre. Make a Map: Natural Heritage Areas.

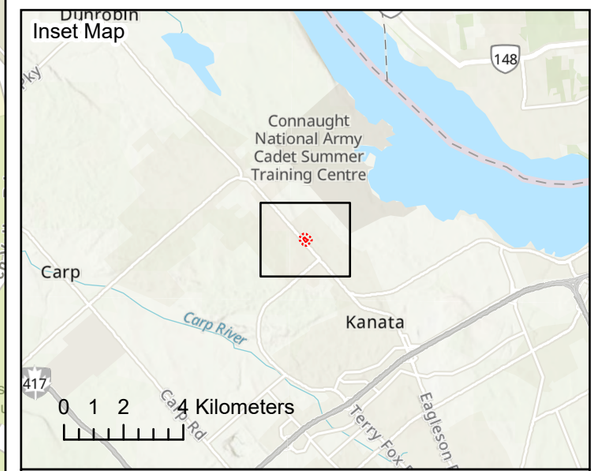
Ottawa, City of (Ottawa). 2022, City of Ottawa Official Plan.

Ottawa, City of (Ottawa), By-law No. 2020-340, Tree Protection (Updated: January, 2021).



Legend

- Property Boundary
- Study Area



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Client:	Project:
SINA	103027.001

Location
788 March Road
Ottawa, Ontario

Drwn By:	Chkd By:	
E.P.	T.W.	Site Location

Date: June 2024	Rev.	
© King's Printer for Ontario	3	Figure: A.1

Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: World Topographic Map: City of Ottawa, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada
World Street Map: Esri Community Maps Contributors, City of Ottawa, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada

Legend

- Property Boundary
- Study Area
- Local Wetland
- Watercourse

Scale
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Date: June 2024	Rev.	Figure: A.2
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City of Ottawa 2022 Imagery:

Legend

- Property Boundary
- Study Area
- Local Wetland
- Watercourse
- Proposed Paved Area
- Proposed Building Footprint
- Proposed Soft Landscape Area
- Proposed Conceptual Bicycle Path

* Pathway is conceptual and will be 'field fit' Spring 2026

Scale
1:1,800
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Client:	Project:
SINA	103027.001

Location
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Ottawa, Ontario

Drwn By:	Chkd By:	
E.P.	T.W.	Development Plan

Date: June 2024	Rev.	Figure: A.3
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Coordinate System: NAD 1983 UTM Zone 18N
Service Layer Credits: Hybrid Reference Layer: Esri Community Maps Contributors, City of Ottawa, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada
City of Ottawa 2022 Imagery:

Legend

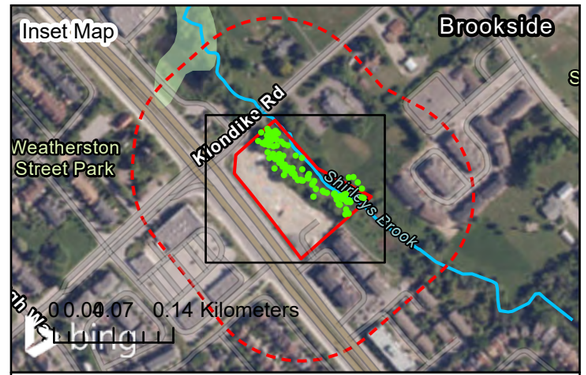
- Property Boundary
- Study Area
- Watercourse
- 30 m Setback

Tree Location

- Healthy
- Good
- Poor
- Dead

- Proposed Building Footprint
- Proposed Paved Area
- Conceptual Proposed Bicycle Path
- Proposed Soft Landscape Area

* Pathway is conceptual and will be 'field fit' Spring 2026



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Location
788 March Road
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Drwn By:	Chkd By:	
E.P.	T.W.	Tree Inventory

Date: June 2024	Rev.	
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Coordinate System: NAD 1983 UTM Zone 18N
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City of Ottawa 2022 Imagery:

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T18
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T22
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T20
42
T19
(100)
T21
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48(306)

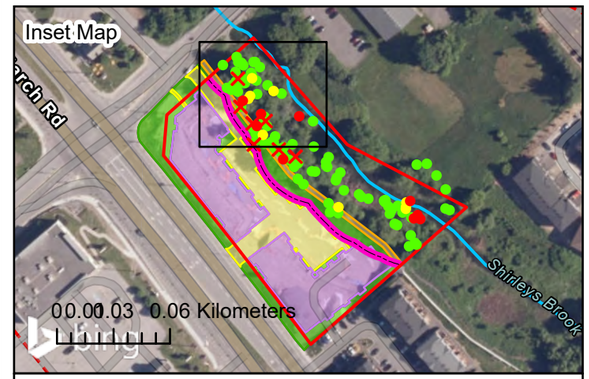
Legend

- Property Boundary
- Study Area
- Watercourse
- Approximate Limits Of Grading
- 30 m Setback
- Proposed Building Footprint
- Proposed Paved Area
- Proposed Soft Landscape Area
- Conceptual Proposed Bicycle Path

Tree Number (Critical Root Zone [cm])

- Retainable
- Conflict
- Dead

*JD Barnes Tree Number ⟶ T#
*Pathway is conceptual and will be 'field fit' Spring 2026



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Drwn By:	Chkd By:	
E.P.	T.W.	Tree Inventory

Date: June 2024	Rev.	
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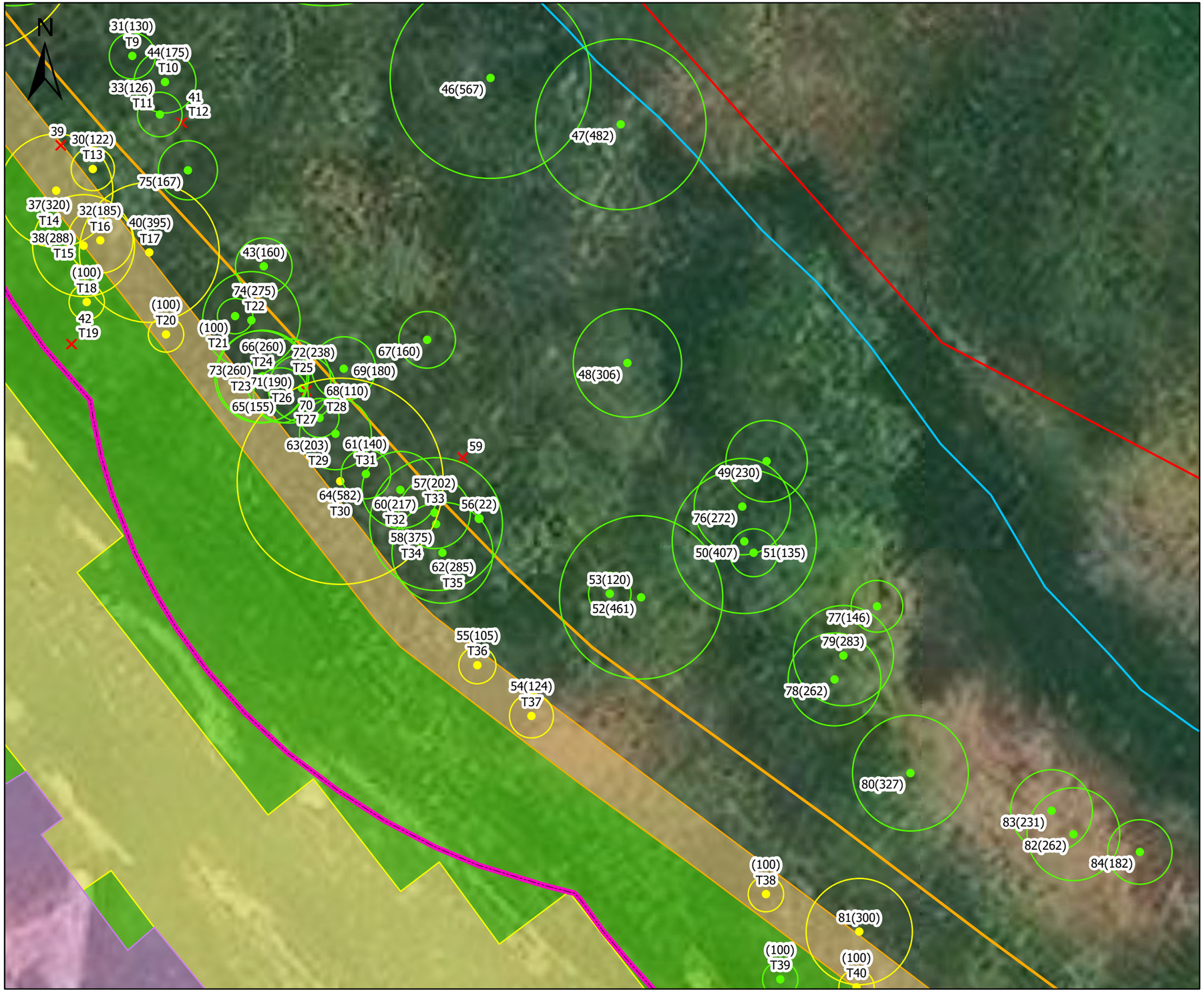


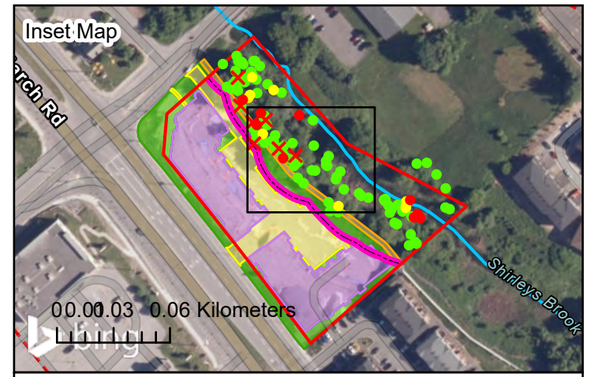
Legend

- Property Boundary
- Study Area
- Watercourse
- 30 m Setback
- Approximate Limits Of Grading
- Proposed Building Footprint
- Proposed Paved Area
- Proposed Soft Landscape Area
- Conceptual Proposed Bicycle Path

Tree Number (Critical Root Zone [cm])

- Retainable
- Conflict
- Dead

*JD Barnes Tree Number ⟶ T#
*Pathway is conceptual and will be 'field fit' Spring 2026



Scale 1:225

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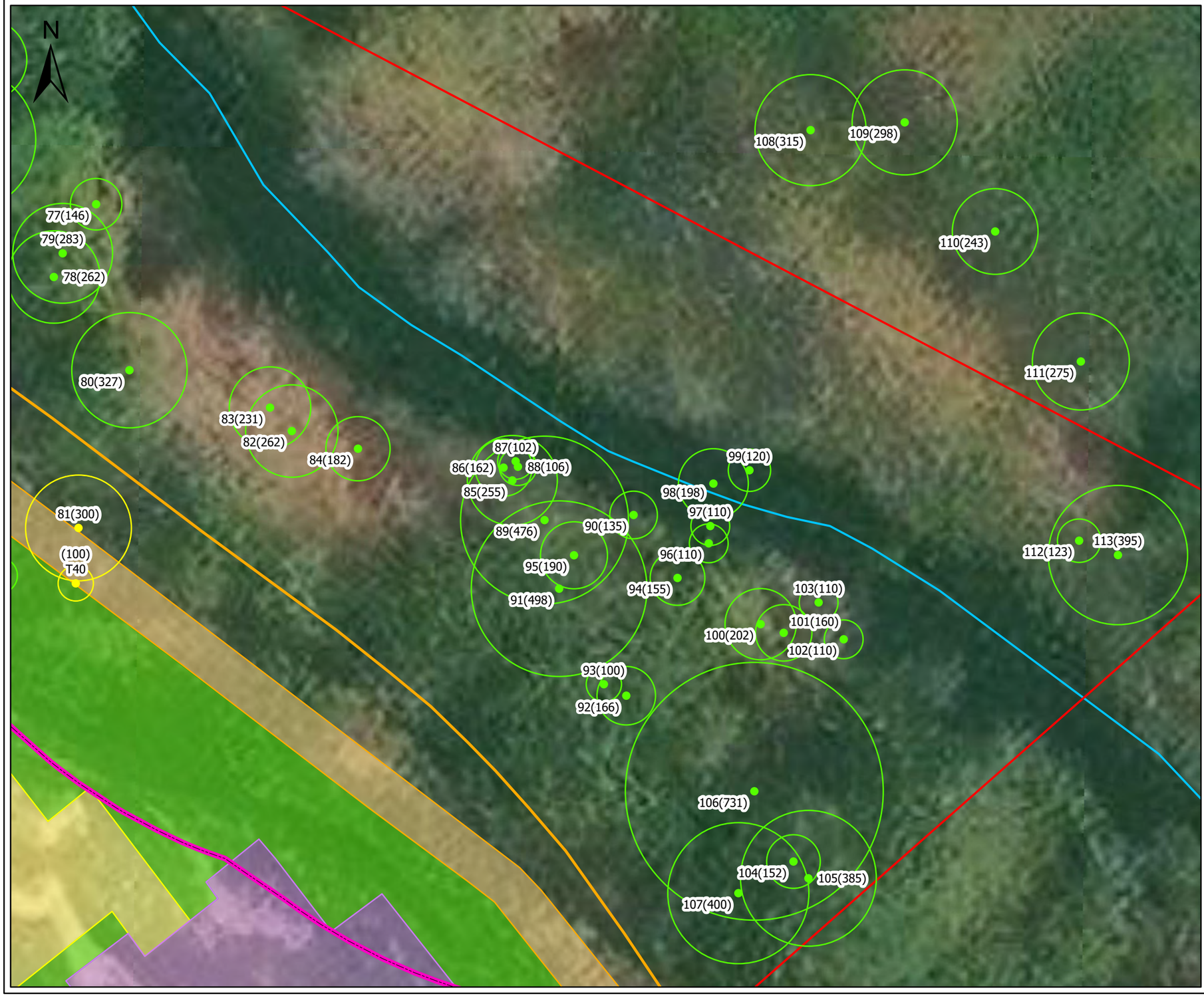


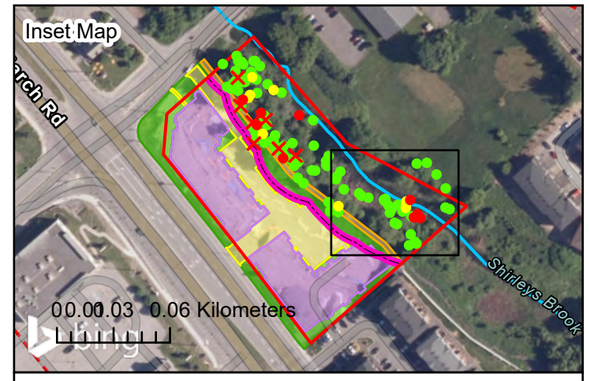
Legend

- Property Boundary
- Study Area
- Watercourse
- Approximate Limits Of Grading
- 30 m Setback
- Proposed Building Footprint
- Proposed Paved Area
- Conceptual Proposed Bicycle Path
- Proposed Soft Landscape Area

Tree Number (Critical Root Zone [cm])

- Retainable
- Conflict
- Dead

*JD Barnes Tree Number ⟶ T#
*Pathway is conceptual and will be 'field fit' Spring 2026



Scale 1:225

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Location: 788 March Road, Ottawa, Ontario

Drwn By:	Chkd By:	
E.P.	T.W.	Tree Inventory

Date: June 2024	Rev.	Figure: A.4c
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Coordinate System: NAD 1983 UTM Zone 18N
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Site Photograph 1 – Wooded Area

Site Photograph 2 – Wooded Area

Site Photograph 3 – Disturbed Area and Wooded Area

Site Photograph 4 – Shirley's Brook and Riparian Area

TABLE C.1
TREE INVENTORY

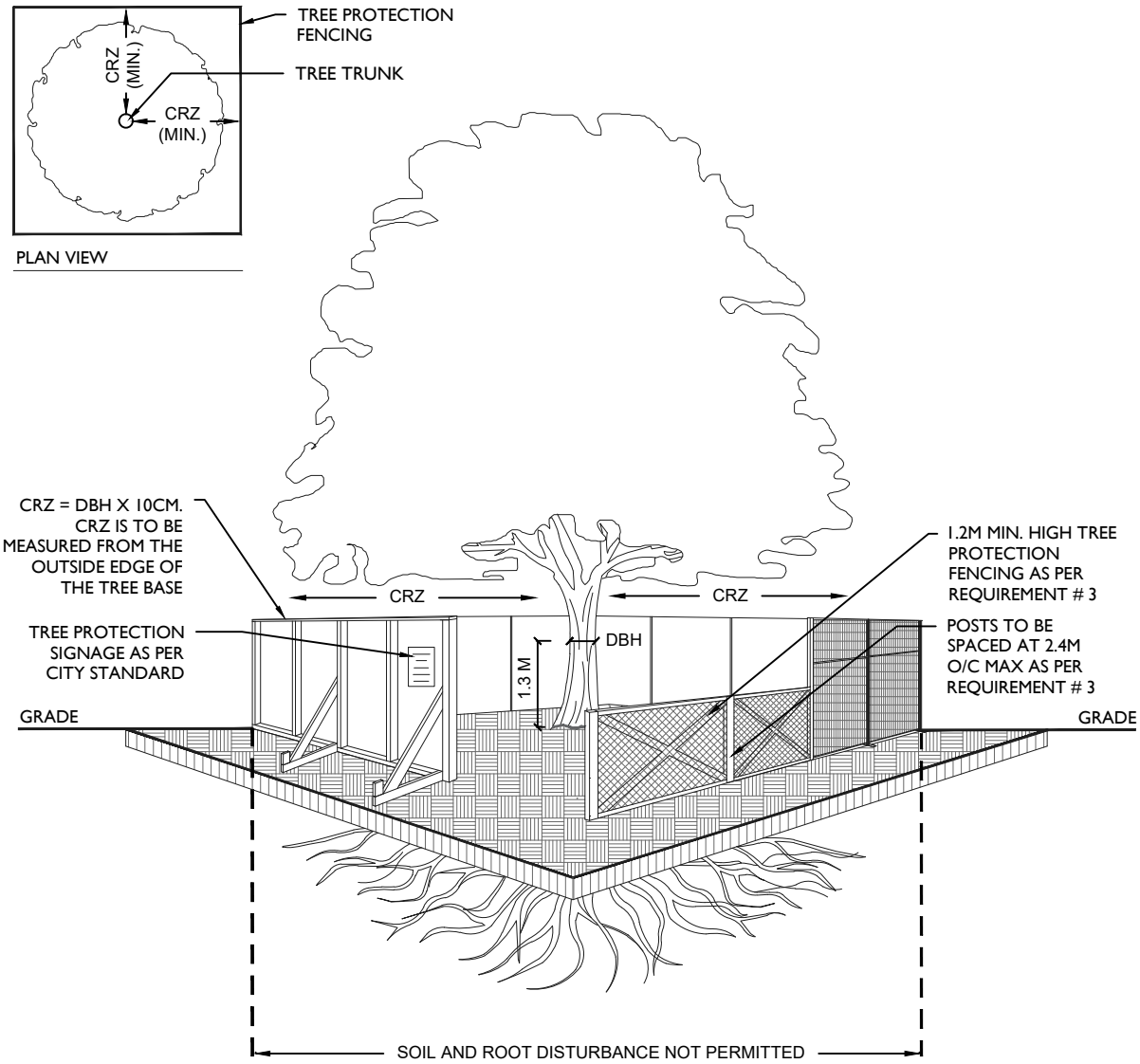
Tree Number GEMTEC	Tree Number JD Barnes	Common Name	Scientific Name	Diameter (cm DBH)	Critical Root Zone (cm)	Condition	Retainable or Conflict	Signficant Tree (> 50 cm)	Wildlife Tree
1	--	Red Maple	*Acer rubrum*	59	593	Healthy	Retainable	Yes	Yes
2	--	Sugar Maple	*Acer saccharum*	11	107	Healthy	Retainable	No	No
3	--	Manitoba Maple	*Acer negundo*	20	200	Healthy	Retainable	No	Yes
4	--	Manitoba Maple	*Acer negundo*	27	272	Healthy	Retainable	No	No
5	--	Manitoba Maple	*Acer negundo*	19	190	Healthy	Retainable	No	No
6	--	Manitoba Maple	*Acer negundo*	25	245	Healthy	Retainable	No	No
7	--	Manitoba Maple	*Acer negundo*	16	--	Dead	Retainable	No	No
8	T2	Manitoba Maple	*Acer negundo*	86	861	Healthy	Conflict	Yes	Yes
9	T1	American Elm	*Ulmus americana*	15	150	Healthy	Conflict	No	No
10	T3	American Elm	*Ulmus americana*	20	202	Healthy	Retainable	No	No
11	T6	Manitoba Maple	*Acer negundo*	52	522	Good	Retainable	Yes	Yes
12	--	American Elm	*Ulmus americana*	19	185	Healthy	Retainable	No	No
13	--	Manitoba Maple	*Acer negundo*	35	350	Good	Retainable	No	Yes
14	--	Manitoba Maple	*Acer negundo*	30	300	Healthy	Retainable	No	No
15	--	Red Maple	*Acer rubrum*	71	714	Healthy	Retainable	Yes	Yes
16	--	Manitoba Maple	*Acer negundo*	21	210	Healthy	Retainable	No	No
17	--	Red Maple	*Acer rubrum*	18	177	Healthy	Retainable	No	No
18	--	Red Maple	*Acer rubrum*	11	110	Healthy	Retainable	No	No
19	--	Sugar Maple	*Acer saccharum*	10	101	Healthy	Retainable	No	No
20	--	Manitoba Maple	*Acer negundo*	18	183	Good	Retainable	No	Yes
21	--	Sugar Maple	*Acer saccharum*	18	176	Healthy	Retainable	No	No
22	--	Sugar Maple	*Acer saccharum*	23	231	Healthy	Retainable	No	No
23	--	Sugar Maple	*Acer saccharum*	20	195	Healthy	Retainable	No	No
24	--	American Elm	*Ulmus americana*	11	110	Healthy	Retainable	No	No
25	--	Manitoba Maple	*Acer negundo*	18	182	Healthy	Retainable	No	No
26	--	Manitoba Maple	*Acer negundo*	34	335	Healthy	Retainable	No	No
27	--	Bur Oak	*Quercus macrocarpa*	20	195	Healthy	Retainable	No	No
28	--	Manitoba Maple	*Acer negundo*	19	185	Good	Retainable	No	Yes
29	--	Manitoba Maple	*Acer negundo*	66	658	Healthy	Retainable	Yes	Yes
30	T13	Green Ash	*Fraxinus pennsylvanica*	12	122	Poor	Conflict	No	No
31	T9	Green Ash	*Fraxinus pennsylvanica*	13	130	Poor	Retainable	No	No
32	T16	Manitoba Maple	*Acer negundo*	19	185	Healthy	Conflict	No	No
33	T11	Manitoba Maple	*Acer negundo*	13	126	Healthy	Retainable	No	No
34	T8	Manitoba Maple	*Acer negundo*	16	--	Dead	Conflict	No	No
35	T5	Manitoba Maple	*Acer negundo*	69	689	Poor	Conflict	Yes	Yes
36	T7	Bur Oak	*Quercus macrocarpa*	16	157	Healthy	Conflict	No	No
37	T14	Manitoba Maple	*Acer negundo*	32	320	Healthy	Conflict	No	No
38	T15	Manitoba Maple	*Acer negundo*	29	288	Healthy	Conflict	No	No
39	--	Green Ash	*Fraxinus pennsylvanica*	20	--	Dead	Conflict	No	Yes
40	T17	Manitoba Maple	*Acer negundo*	40	395	Good	Conflict	No	No
41	T12	Green Ash	*Fraxinus pennsylvanica*	13	--	Dead	Retainable	No	No
42	T19	Manitoba Maple	*Acer negundo*	25	--	Dead	Conflict	No	No
43	--	Manitoba Maple	*Acer negundo*	16	160	Healthy	Retainable	No	No
44	T10	Manitoba Maple	*Acer negundo*	18	175	Healthy	Retainable	No	No
45	--	Manitoba Maple	*Acer negundo*	79	795	Healthy	Retainable	Yes	Yes
46	--	Manitoba Maple	*Acer negundo*	57	567	Poor	Retainable	Yes	Yes
47	--	Manitoba Maple	*Acer negundo*	48	482	Healthy	Retainable	No	No
48	--	Manitoba Maple	*Acer negundo*	31	306	Healthy	Retainable	No	No
49	--	Manitoba Maple	*Acer negundo*	23	230	Healthy	Retainable	No	No
50	--	Manitoba Maple	*Acer negundo*	41	407	Healthy	Retainable	No	No
51	--	Manitoba Maple	*Acer negundo*	14	135	Healthy	Retainable	No	No
52	--	Manitoba Maple	*Acer negundo*	46	461	Healthy	Retainable	No	No

TABLE C.1
TREE INVENTORY

Tree Number GEMTEC	Tree Number JD Barnes	Common Name	Scientific Name	Diameter (cm DBH)	Critical Root Zone (cm)	Condition	Retainable or Conflict	Signficant Tree (> 50 cm)	Wildlife Tree
53	--	Manitoba Maple	*Acer negundo*	12	120	Healthy	Retainable	No	No
54	T37	Manitoba Maple	*Acer negundo*	12	124	Healthy	Conflict	No	No
55	T36	Green Ash	*Fraxinus pennsylvanica*	11	105	Healthy	Conflict	No	No
56	--	Manitoba Maple	*Acer negundo*	22	22	Healthy	Retainable	No	No
57	T33	Manitoba Maple	*Acer negundo*	20	202	Healthy	Retainable	No	No
58	T34	Manitoba Maple	*Acer negundo*	38	375	Healthy	Retainable	No	No
59	--	Manitoba Maple	*Acer negundo*	20	--	Dead	Retainable	No	No
60	T32	Manitoba Maple	*Acer negundo*	22	217	Healthy	Retainable	No	No
61	T31	Manitoba Maple	*Acer negundo*	14	140	Healthy	Retainable	No	No
62	T35	Manitoba Maple	*Acer negundo*	28	285	Healthy	Retainable	No	No
63	T29	Manitoba Maple	*Acer negundo*	20	203	Healthy	Retainable	No	No
64	T30	Manitoba Maple	*Acer negundo*	58	582	Poor	Conflict	Yes	Yes
65	--	Manitoba Maple	*Acer negundo*	16	155	Healthy	Retainable	No	No
66	T24	Manitoba Maple	*Acer negundo*	26	260	Healthy	Retainable	No	No
67	--	Manitoba Maple	*Acer negundo*	16	160	Healthy	Retainable	No	No
68	T28	Manitoba Maple	*Acer negundo*	11	110	Healthy	Retainable	No	No
69	--	Manitoba Maple	*Acer negundo*	18	180	Healthy	Retainable	No	No
70	T27	Manitoba Maple	*Acer negundo*	18	--	Dead	Retainable	No	No
71	T26	Manitoba Maple	*Acer negundo*	19	190	Healthy	Retainable	No	No
72	T25	Manitoba Maple	*Acer negundo*	24	238	Healthy	Retainable	No	No
73	T23	Manitoba Maple	*Acer negundo*	26	260	Healthy	Retainable	No	No
74	T22	Manitoba Maple	*Acer negundo*	27	275	Healthy	Retainable	No	No
75	--	Manitoba Maple	*Acer negundo*	17	167	Healthy	Retainable	No	No
76	--	Manitoba Maple	*Acer negundo*	27	272	Healthy	Retainable	No	Yes
77	--	Manitoba Maple	*Acer negundo*	15	146	Healthy	Retainable	No	No
78	--	Manitoba Maple	*Acer negundo*	26	262	Healthy	Retainable	No	No
79	--	Manitoba Maple	*Acer negundo*	28	283	Healthy	Retainable	No	No
80	--	Manitoba Maple	*Acer negundo*	33	327	Healthy	Retainable	No	No
81	--	Green Ash	*Fraxinus pennsylvanica*	30	300	Good	Conflict	No	No
82	--	Manitoba Maple	*Acer negundo*	26	262	Healthy	Retainable	No	No
83	--	Manitoba Maple	*Acer negundo*	23	231	Healthy	Retainable	No	No
84	--	Manitoba Maple	*Acer negundo*	18	182	Healthy	Retainable	No	No
85	--	Manitoba Maple	*Acer negundo*	26	255	Healthy	Retainable	No	No
86	--	Manitoba Maple	*Acer negundo*	16	162	Healthy	Retainable	No	No
87	--	Manitoba Maple	*Acer negundo*	10	102	Healthy	Retainable	No	No
88	--	Manitoba Maple	*Acer negundo*	11	106	Healthy	Retainable	No	No
89	--	Manitoba Maple	*Acer negundo*	48	476	Healthy	Retainable	No	Yes
90	--	Manitoba Maple	*Acer negundo*	14	135	Healthy	Retainable	No	No
91	--	Manitoba Maple	*Acer negundo*	50	498	Healthy	Retainable	Yes	No
92	--	Manitoba Maple	*Acer negundo*	17	166	Healthy	Retainable	No	No
93	--	Manitoba Maple	*Acer negundo*	10	100	Healthy	Retainable	No	No
94	--	Manitoba Maple	*Acer negundo*	16	155	Healthy	Retainable	No	No
95	--	Manitoba Maple	*Acer negundo*	19	190	Healthy	Retainable	No	No
96	--	Manitoba Maple	*Acer negundo*	11	110	Good	Retainable	No	No
97	--	Manitoba Maple	*Acer negundo*	11	110	Good	Retainable	No	No
98	--	Manitoba Maple	*Acer negundo*	20	198	Good	Retainable	No	No
99	--	Manitoba Maple	*Acer negundo*	12	120	Poor	Retainable	No	No
100	--	Manitoba Maple	*Acer negundo*	20	202	Healthy	Retainable	No	No
101	--	Green Ash	*Fraxinus pennsylvanica*	16	160	Poor	Retainable	No	No
102	--	Green Ash	*Fraxinus pennsylvanica*	11	110	Poor	Retainable	No	No
103	--	Green Ash	*Fraxinus pennsylvanica*	11	110	Poor	Retainable	No	No

TABLE C.1
TREE INVENTORY

Tree Number GEMTEC	Tree Number JD Barnes	Common Name	Scientific Name	Diameter (cm DBH)	Critical Root Zone (cm)	Condition	Retainable or Conflict	Signficant Tree (> 50 cm)	Wildlife Tree
104	--	Green Ash	*Fraxinus pennsylvanica*	15	152	Healthy	Retainable	No	No
105	--	Bur Oak	*Quercus macrocarpa*	39	385	Healthy	Retainable	No	No
106	--	Manitoba Maple	*Acer negundo*	73	731	Healthy	Retainable	Yes	Yes
107	--	American Elm	*Ulmus americana*	40	400	Healthy	Retainable	No	No
108	--	Black Walnut	*Juglans nigra*	31	315	Healthy	Retainable	No	No
109	--	Black Walnut	*Juglans nigra*	30	298	Healthy	Retainable	No	No
110	--	Black Walnut	*Juglans nigra*	24	243	Healthy	Retainable	No	No
111	--	Black Walnut	*Juglans nigra*	28	275	Healthy	Retainable	No	No
112	--	Manitoba Maple	*Acer negundo*	12	123	Healthy	Retainable	No	No
113	--	Eastern White Pine	*Strobus pinus*	40	395	Healthy	Retainable	No	No
--	T4	--	--	10	100	--	Retainable	--	--
--	T18	--	--	10	100	--	Conflict	--	--
--	T20	--	--	10	100	--	Conflict	--	--
--	T21	--	--	10	100	--	Retainable	--	--
--	T38	--	--	10	100	--	Conflict	--	--
--	T39	--	--	10	100	--	Retainable	--	--
--	T40	--	--	10	100	--	Conflict	--	--



TREE PROTECTION REQUIREMENTS:

1. PRIOR TO ANY WORK ACTIVITY WITHIN THE CRITICAL ROOT ZONE (CRZ = 10 X DIAMETER) OF A TREE, TREE PROTECTION FENCING MUST BE INSTALLED SURROUNDING THE CRITICAL ROOT ZONE, AND REMAIN IN PLACE UNTIL THE WORK IS COMPLETE.
2. UNLESS PLANS ARE APPROVED BY CITY FORESTRY STAFF, FOR WORK WITHIN THE CRZ:
   - DO NOT PLACE ANY MATERIAL OR EQUIPMENT - INCLUDING OUTHOUSES;
   - DO NOT ATTACH ANY SIGNS, NOTICES OR POSTERS TO ANY TREE;
   - DO NOT RAISE OR LOWER THE EXISTING GRADE;
   - TUNNEL OR BORE WHEN DIGGING;
   - DO NOT DAMAGE THE ROOT SYSTEM, TRUNK, OR BRANCHES OR ANY TREE;
   - ENSURE THAT EXHAUST FUMES FROM ALL EQUIPMENT ARE NOT DIRECTED TOWARD ANY TREE CANOPY.
   - DO NOT EXTEND HARD SURFACE OR SIGNIFICANTLY CHANGE LANDSCAPING
3. TREE PROTECTION FENCING MUST BE AT LEAST 1.2M IN HEIGHT, AND CONSTRUCTED OF RIGID OR FRAMED MATERIALS (E.G. MODULOC - STEEL, PLYWOOD HOARDING, OR SNOW FENCE ON A 2"X4" WOOD FRAME) WITH POSTS 2.4M APART, SUCH THAT THE FENCE LOCATION CANNOT BE ALTERED. ALL SUPPORTS AND BRACING MUST BE PLACED OUTSIDE OF THE CRZ, AND INSTALLATION MUST MINIMISE DAMAGE TO EXISTING ROOTS. (SEE DETAIL)
4. THE LOCATION OF THE TREE PROTECTION FENCING MUST BE DETERMINED BY AN ARBORIST AND DETAILED ON ANY ASSOCIATED PLANS FOR THE SITE (E.G. TREE CONSERVATION REPORT, TREE INFORMATION REPORT, ETC). THE PLAN AND CONSTRUCTED FENCING MUST BE APPROVED BY CITY FORESTRY STAFF PRIOR TO THE COMMENCEMENT OF WORK.
5. IF THE FENCED TREE PROTECTION AREA MUST BE REDUCED TO FACILITATE CONSTRUCTION, MITIGATION MEASURES MUST BE PRESCRIBED BY AN ARBORIST AND APPROVED BY CITY FORESTRY STAFF. THESE MAY INCLUDE THE PLACEMENT OF PLYWOOD, WOOD CHIPS, OR STEEL PLATING OVER THE ROOTS FOR PROTECTION OR THE PROPER PRUNING AND CARE OF ROOTS WHERE ENCOUNTERED.

THE CITY'S TREE PROTECTION BY-LAW, 2020-340 PROTECTS BOTH CITY-OWNED TREES, CITY-WIDE, AND PRIVATELY-OWNED TREES WITHIN THE URBAN AREA. PLEASE REFER TO WWW.OTTAWA.CA/TREEBYLAW FOR MORE INFORMATION ON HOW THE TREE BY-LAW APPLIES.

ACCESSIBLE FORMATS AND COMMUNICATION SUPPORTS ARE AVAILABLE, UPON REQUEST

Ottawa

TREE PROTECTION SPECIFICATION

TO BE IMPLEMENTED FOR RETAINED TREES, BOTH ON SITE AND ON ADJACENT SITES, PRIOR TO ANY TREE REMOVAL OR SITE WORKS AND MAINTAINED FOR THE DURATION OF WORK ACTIVITIES ON SITE.

SCALE:	NTS
DATE:	MARCH 2021
DRAWING NO.:	1 of 1

experience • knowledge • integrity

civil	civil
geotechnical	géotechnique
environmental	environnementale
field services	surveillance de chantier
materials testing	service de laboratoire des matériaux

expérience • connaissance • intégrité

APPENDIX E

MNRF General Habitat Description – Blanding's Turtle

General Habitat Description for the Blanding's Turtle (*Emydoidea blandingii*)

A general habitat description is a technical document that provides greater clarity on the area of habitat protected for a species based on the general habitat definition found in the Endangered Species Act, 2007. General habitat protection does not include an area where the species formerly occurred or has the potential to be reintroduced unless existing members of the species depend on that area to carry out their life processes. A general habitat description also indicates how the species' habitat has been categorized, as per the policy "Categorizing and Protecting Habitat Under the Endangered Species Act", and is based on the best scientific information available.

HABITAT CATEGORIZATION

1	Nest and the area within 30 m or Overwintering sites and the area within 30 m
2	The wetland complex (i.e. all suitable wetlands or waterbodies within 500 m of each other) that extends up to 2 km from an occurrence, and the area within 30 m around those suitable wetlands or waterbodies
3	Area between 30 m and 250 m around suitable wetlands/waterbodies identified in Category 2, within 2 km of an occurrence

Category 1

Nest sites and overwintering sites are essential features and along with the 30 m area surrounding them are considered to have the lowest tolerance to alteration. Blanding's Turtles depend on these areas for sensitive life processes including egg-laying, incubation, hatching of young, and hibernation. A 30 m radius (average tree height) buffer around nesting and overwintering sites is important to maintain the microclimate conditions (e.g., thermal, vegetative and lighting features). These areas are habitually used and may support concentrations of individuals.

Nesting Sites

Blanding's Turtle nests are created in open habitats with low vegetation cover and high sun exposure such as in forest clearings, meadows, shorelines, beaches, rock outcrops, cornfields, gravel roads, road shoulders, ploughed fields, gardens, powerline rights-of-ways, yards and abandoned railroad beds (Linck *et al*. 1989, Ross and Anderson 1990, Kiviat 1997, Standing *et al*. 1999, Joyal *et al*. 2001, Congdon *et al*. 2008, Downing *et al*. 2010, Refsnider and Linck 2012). Females often show high fidelity to the same general nesting areas (Congdon *et al*. 1983, McNeil 2002, Congdon *et al*. 2011).

Overwintering Sites

Overwintering sites are typically occupied for at least six months during the overwintering period in Ontario (Edge *et al*. 2009, Edge *et al*. 2010, Davy 2011 unpublished data, Paterson unpublished data 2013, NHIC 2013). Blanding's Turtles display overwintering site fidelity, using some sites year after year (Power 1989, McNeil 2002, Caverhill 2006 in Newton and Herman 2009, Edge *et al*. 2009). Many individuals may aggregate at one site while overwintering (Anderson 1990, St-Hilaire 2003 in COSEWIC 2005, Ross and, Congdon *et al*. 2008, Edge *et al*. 2009).

Suitable Blanding's Turtle overwintering habitat typically includes permanent bogs, fens, marshes, ponds, channels or other habitats with free (unfrozen) shallow water (Joyal *et al*. 2001, Edge 2010, Seburn 2010). Blanding's Turtles studied in Algonquin Provincial park overwintered in wetlands with free water depths of 7 cm - 50 cm (Edge *et al*. 2009).This species may also hibernate within graminoid shallow marsh areas of larger marsh complexes by burying into substrates in areas of pooled water (Gillingwater unpublished data 2013). Blanding's Turtle's may also overwinter in seasonal pools or small excavated areas with standing water (Joyal *et al*. 2001, Rouse unpublished data 2012).

Category 2

The wetland complex that extends up to 2 km from an occurrence and 30 m around these suitable wetlands/waterbodies (Category 2) will be considered to have a moderate level of tolerance to alteration before their function is compromised. For the purpose of general habitat protection for Blanding's Turtle, a wetland complex is defined as all wetlands that are within 500 m of each other. This definition is based on the biology of the species and its documents movement patterns between adjacent suitable wetlands/waterbodies. In cases where an occurrence is not within suitable aquatic habitat, the nearest wetland should be considered the starting point for delineating the wetland complex.

Blanding's Turtles depend on these wetlands and the surrounding habitat throughout their home range for life processes including feeding, mating, thermoregulation, movement, and protection from predators.

Blanding's Turtle home range sizes and lengths in Ontario vary significantly between individuals within the same population and between different populations. In Algonquin Provincial Park, the average range length of radio-tracked Blanding's Turtles was 1.8 km (1.2 standard deviation), with a maximum of 4.3 km (Edge 2013 unpublished data). Recent Ontario studies documented a 90th percentile home range length of radio-tracked Blanding's Turtles in Parry Sound District and Bancroft District of 2.0 and 2.3 km, respectively (Rouse unpublished data 2013, Cameron unpublished data 2013). Average range length of a population on Grenadier Island, Ontario, was 813 m, with a maximum range length just over 2 km. In a Minnesota population, average range length was just over 1.6 km, with a maximum range length just over 5 km (Pappas *et al*. 2000).

Blanding's Turtles regularly move between wetlands or other aquatic areas in order to access mates, overwintering sites, nesting sites, other seasonally required resources and thermoregulation sites (Congdon *et al*. 2008, Edge *et al*. 2010). In a study from Algonquin Provincial Park, Blanding's Turtles made an average of four movements between wetlands each year with an average movement distance of 231 m for males and 497 m for females (Edge *et al*. 2010). Average interwetland movement distances of a population in Maine was 680 ± 550 m (Joyal *et al*. 2001). Rouse and Cameron (unpublished data 2013) found that Blanding's Turtles primarily moved through wetlands and other water and were rarely located more than 200 m from water. Since interwetland movements tend to average about 500 m, wetlands that are separated by more than 500 m from other suitable wetlands have a lower likelihood of being occupied.

A 30 m radius (average tree height) buffer around suitable wetlands helps to maintain microclimate conditions. Buffers of 30 m are widely recognized as providing a range of functional benefits to aquatic features and wetlands such as maintaining water quality by filtering sediment and nutrients, input of woody debris, and cooling water temperatures by shading and infiltrating surface runoff (OMNR 2010). Blanding's Turtles have also been shown to generally bask within 30 m of wetlands (Joyal *et al*. 2001).

Suitable habitat for Blanding's Turtles during the active season includes a variety of wetlands such as marsh, swamps, ponds, fens, bogs, slow-flowing streams, shallow bays of lakes or rivers, as well as graminoid shallow marsh and slough forest habitats that are adjacent to larger marsh complexes (Joyal *et al*. 2001, Gillingwater 2001, Gillingwater and Piraino 2004, 2007, Congdon *et al*. 2008, Edge *et al*. 2010; Seburn 2010). Suitable wetlands used during the active season are typically eutrophic (mineral or organic nutrient-rich), shallow with a soft substrate composed of decomposing materials, and often have emergent vegetation, such as water lilies and cattails (COSEWIC 2005, Congdon *et al*. 2008).

Category 3

The area between 30 m and 250 m around suitable Category 2 wetlands/waterbodies will be considered to have the highest tolerance to alteration. Blanding's Turtles depend on these areas as movement corridors between wetlands, which are essential for carrying out life processes associated with Category 1 and 2 habitats.

Blanding's Turtle nests are typically close to permanent wetlands and reported average distances between nests and the nearest wetland range from 99.5 to 242 m, with maximum distances of 256 m to just over 400 m (Joyal *et al*. 2001, Beaudry *et al*. 2010, Congdon *et al*. 2011, Paterson *et al*. 2012, Refsnider and Linck 2012). Consequently, the area within 250 m of suitable aquatic habitat provides critical movement corridors through with hatchling Blanding's Turtles access wetlands after hatching. This habitat is also used by some hatchlings as overwintering habitat in their first year (Paterson *et al*. 2012).

Although Blanding's Turtles nest close to water, they often travel considerable distances from their wetland of origin during nesting migrations, with movements of 6 km being documented in some Ontario populations (Edge *et al*. 2010). Although wetlands and ponds are used as movement corridors when available, females make extensive movements through upland habitat to access nesting sites (Congdon *et al*. 2008). As mentioned in the previous section (see Category 2), Blanding's Turtles also make regular overland movements between wetlands throughout the active season in order to access Category 1 and 2 habitats within their home range. Category 3 habitat provides essential movement corridors of up to 500 m between wetlands, which will encompass the areas that are most likely to be used for overland movement.

Activities in Blanding's Turtle habitat

Activities in general habitat can continue as long as the *function of these areas for the species is maintained and individuals of the species are not killed, harmed, or harassed.*

Generally compatible:

- Recreational use of the water such as swimming, boating, and fishing.
- Small-scale alterations to land cover that do not impede overland movements or impair nesting sites.

Generally not compatible:*

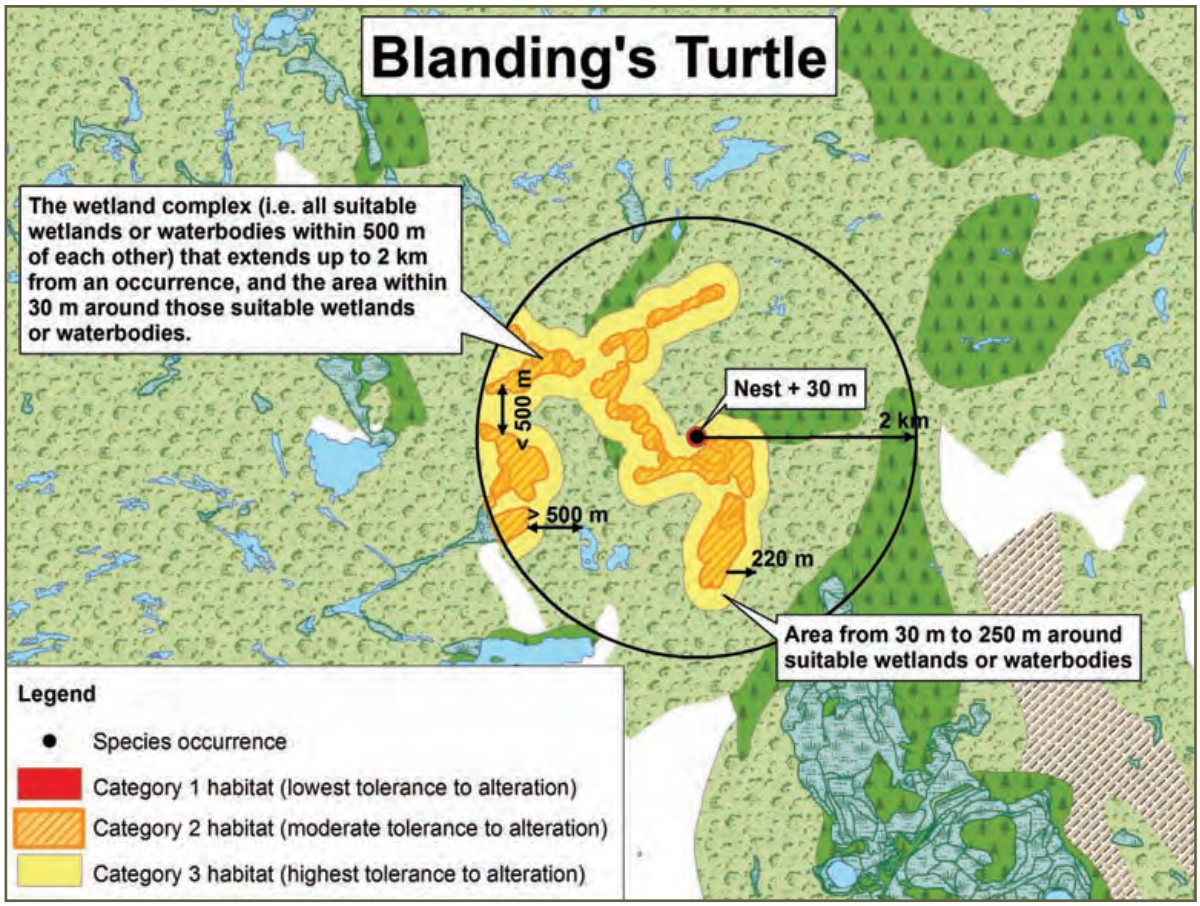
- Significant draining, infilling, dredging, or other significant alteration of wetlands or other suitable waterbodies.
- Significant alteration of shorelines, especially hardening (e.g. the use of gabion baskets, rip-rap, and rock armour).

* If you are considering an activity that may not be compatible with general habitat, please contact your local MNR office for more information.

Key terms:

- **Thermoregulation:** Some animals, such as turtles, use thermoregulation to alter their internal body temperature through behavioural patterns, such as basking in the sun to increase body temperature or seeking out cool areas to lower body temperature.

Sample application of the general habitat protection for Blanding's Turtle



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APPENDIX F

Information Gathering Form

From:	Species at Risk (MECP)
To:	Zachary Anderson
Subject:	Automatic reply: 103027.001 - 788 March Road Information Gathering Form
Date:	May 28, 2024 9:15:03 AM

(le français suit) --

Thank you for your submission to the Species at Risk Branch, Ministry of the Environment, Conservation and Parks (MECP). Your email is being reviewed by our staff to determine next steps for your inquiry or submission. We strive to follow up with a response to your inquiry within 15 business days.

If you have determined that there are species at risk and/or their habitat on or around your activity location and your work is going to contravene the *Endangered Species Act, 2007* (ESA), (e.g., kill, harm, harass a species at risk or damage or destroy its habitat), you may require a permit or other type of authorization. Please visit Register or Get a Permit (link) for more information.

Blanding's Turtle (Ontario Shield Ecozone population), Butternut, Bobolink, Eastern Meadowlark, and Eastern Whip-poor-will are designated conservation fund species eligible for Ontario's Species at Risk Conservation Fund (the Fund). The Fund is administered by the Species Conservation Action Agency (the Agency), whose purpose is to protect and recover select species at risk and their habitats through investments from the fund.

To provide shortened timelines, increased predictability, and reduced downstream implementation burden, proponents can choose to pay a species conservation charge into the Fund. Proponents who choose this approach will also complete actions to avoid and minimize impacts on species at risk and their habitats. For more information about the Fund option, visit Species at Risk Conservation Fund | ontario.ca. **You can also contact** speciesconservationagency@ontario.ca.

For more information on protecting and recovering species at risk, please visit https://www.ontario.ca/page/species-risk.

Other helpful links:

Policies and Best Management Practices, visit https://www.ontario.ca/page/species-risk-guides-and-resources

Butternut trees on your property, visit https://www.ontario.ca/page/butternut-trees-your-property

Nous vous remercions d'avoir adressé votre demande à la Direction des espèces en péril du ministère de l'Environnement, de la Protection de la nature et des Parcs. Votre courriel est en cours d'examen par notre personnel afin de déterminer les prochaines étapes de votre demande ou de votre soumission. Nous nous efforçons de répondre à votre demande dans un délai de 15 jours ouvrables.

Si vous avez établi que des espèces ou leur habitat sont en péril sur ou autour de votre lieu d'activité et que vos travaux vont contrevenir à la *Loi de 2007 sur les espèces en voie de disparition* (p. ex. tuer, blesser, harceler une espèce en péril ou endommager ou détruire son habitat), il se peut que vous ayez besoin d'un permis ou d'un autre type d'autorisation. Veuillez visiter le site Comment obtenir un permis ou une autorisation (lien) pour de plus amples renseignements.

La tortue mouchetée (population de l'écozone du Bouclier ontarien), le noyer cendré, le goglu des prés, la sturnelle des prés et l'engoulevent bois-pourri sont des espèces désignées admissibles au Fonds pour la conservation des espèces en péril de l'Ontario (le Fonds). Le Fonds est administré par l'Agence pour l'action en matière de conservation des espèces (l'Agence), dont l'objectif est de protéger et de rétablir certaines espèces en péril et leurs habitats grâce à des investissements provenant du Fonds.

Afin de raccourcir les délais, d'accroître la prévisibilité et de réduire le fardeau de mise en œuvre en aval, les promoteurs peuvent choisir de verser au Fonds une redevance pour la conservation des espèces. Les promoteurs qui choisissent cette approche prendront également des mesures pour éviter et réduire au minimum les répercussions sur les espèces en péril et leurs habitats. Pour de plus amples renseignements sur l'option du Fonds, visitez le site Fonds pour la conservation des espèces en péril | ontario.ca. **Vous pouvez également envoyer un courriel à l'adresse** speciesconservationagency@ontario.ca.

Pour de plus amples renseignements sur la protection et le rétablissement des espèces en péril, veuillez consulter le site suivant https://www.ontario.ca/fr/page/especes-en-peril.

Autres liens utiles :

Pour les politiques et pratiques exemplaires de gestion, consultez le site https://www.ontario.ca/fr/page/la-boite-outils-de-reference-pour-les-especes-en-peril.

Pour les noyers cendrés sur votre propriété, visitez https://www.ontario.ca/fr/page/les-noyers-cendres-sur-votre-propriete.

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geotechnical
environmental
field services
materials testing

civil
géotechnique
environnementale
surveillance de chantier
service de laboratoire des matériaux

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