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# Natural Environment Existing Conditions Report
# South March Urban Expansion Area

October 2024
Prepared for the South March Landowners Group

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# EXECUTIVE SUMMARY

This Natural Environment Existing Conditions Report (NEECR) was prepared to assess several parcels that are collectively known as the South March Urban Expansion Area (SMUEA). The boundaries of the SMUEA include Old Carp Road (southwest), Old Second Line Road (west), March Road (northwest), Cameron Harvey Drive (northeast), the Former Beachburg Railway Corridor (east), and the previously approved Kanata North Urban Expansion Area (south). The total size of the SMUEA is approximately 233.5 hectares (577 acres) (excluding existing rural estate subdivisions).

The major SMUEA landowners have collectively submitted an application for an Official Plan Amendment (OPA). The OPA application has been submitted to change the land use designations of the SMUEA from rural lands to 'Category 1 - Future Neighborhood Overlay'. Once the OPA has been completed, the SMUEA landowners intend to enter into the urban expansion area design and approval process (e.g. the City of Ottawa Annex 4 – Secondary Plan Process), which will include the development of a Community Design Plan (CDP) and an Environmental Management Plan (EMP).

This NEECR was prepared to support the OPA application. As described in the following sections, this NEECR demonstrates that the SMUEA does not include any of the designated natural heritage features listed in the *Residential Growth Management Strategy for the New Official Plan*. Specifically, no regulated wetlands, Provincially Significant Wetlands, Natural Environment Areas, Natural Heritage System Core Areas, and/or Natural Heritage System Linkage Areas are shown to occur within the SMUEA, per *Schedule C11-A – Natural Heritage System (West)* of the City of Ottawa's New Official Plan. As described in the *Residential Growth Management Strategy for the New Official Plan*, this NEECR discusses the presence of Significant Woodlots and their potential impact on the net developable area. It is anticipated that this NEECR will be updated and expanded in the future to support the development of the SMUEA CDP and EMP.

This NEECR addresses the portions of the SMUEA that have not been previously developed (e.g. excluding existing rural estate subdivisions, developed residential lots, and roads). The portions of the SMUEA that are undeveloped are approximately 225 hectares (556 acres) in size (the Study Area). The Study Area includes a variety of ecological communities including farmed fields, meadows, thickets, forest, woodland, hedgerows, and several smaller tree stands. There are also several watercourses and Headwaters Drainage Features within the Study Area.

Several designated natural heritage features were documented within the Study Area including forest and woodland habitats that qualify as Significant Woodlots, watercourses, Significant Wildlife Habitat, and Species at Risk habitat. This NEECR identifies recommended surveying, mitigation, and


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retention measures that address the designated natural heritage features. This NEECR also discusses the anticipated natural heritage related regulatory requirements for future developments within the Study Area. Recommendations have been identified in relation to tree retention and tree protection, tributaries and fish habitat mitigation, wildlife impact mitigation, and Species at Risk mitigation and regulatory requirements. The recommendations and requirements identified in this NEECR are intended to be further refined and confirmed during the future development of the SMUEA CDP and EMP (e.g. during the future Secondary Plan Process).


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# 1.0 INTRODUCTION

## 1.1 Background & Study Area Overview

This Natural Environment Existing Conditions Report (NEECR) was prepared to assess several parcels that are collectively known as the South March Urban Expansion Area (SMUEA). The SMUEA is located immediately north of the previously approved Kanata North Urban Expansion Area (KNUEA) (Novatech 2016a). Several subdivisions within the KNUEA are currently under construction. The boundaries of the SMUEA include Old Carp Road (southwest), Old Second Line Road (west), March Road (northwest), Cameron Harvey Drive (northeast), the Former Beachburg Railway Corridor (east), and the KNUEA (south) (as shown below in the Ownership Plan). The total size of the SMUEA is approximately 233.5 hectares (577 acres) (excluding existing rural estate subdivisions). The SMUEA includes Part of Lot 12, Lot 13, Lot 14 & Lot 15, Concession 3 (March) and Part of Lot 14 & Lot 15, Concession 4 (March).

The major SMUEA landowners include Claridge Homes, Minto Communities, Mattamy Homes, Uniform Urban Developments, and Regional Group. The SMUEA landowners have collectively submitted an application for an Official Plan Amendment (OPA). The OPA application has been submitted to change the land use designations of the SMUEA from rural lands to 'Category 1 - Future Neighborhood Overlay'. Once the OPA has been completed, the SMUEA landowners intend to enter into the urban expansion area design and approval process (e.g. the City of Ottawa Annex 4 – Secondary Plan Process), which will include the development of a Community Design Plan (CDP) and an Environmental Management Plan (EMP).

This NEECR was prepared to support the OPA application. As described in the following sections, this NEECR demonstrates that the SMUEA does not include any of the designated natural heritage features listed in the *Residential Growth Management Strategy for the New Official Plan* (City of Ottawa 2020). Specifically, no regulated wetlands, Provincially Significant Wetlands, Natural Environment Areas, Natural Heritage System Core Areas, and/or Natural Heritage System Linkage Areas are shown to occur within the SMUEA, per *Schedule C11-A – Natural Heritage System (West)* of the City of Ottawa's New Official Plan (City of Ottawa 2022a). As described in the *Residential Growth Management Strategy for the New Official Plan* (City of Ottawa 2020), this NEECR discusses the presence of Significant Woodlots and their potential impact on the net developable area. It is anticipated that this NEECR will be updated and expanded in the future to support the development of the SMUEA CDP and EMP.

This NEECR addresses the portions of the SMUEA that have not been previously developed (e.g. excluding existing rural estate subdivisions, developed residential lots, and roads). The portions of


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the SMUEA that are undeveloped are approximately 225 hectares (556 acres) in size (the Study Area) (Refer to Figure 1). The Study Area includes a variety of ecological communities including farmed fields, meadows, thickets, forest, woodland, hedgerows, and several smaller tree stands. There are also several watercourses and Headwaters Drainage Features within the Study Area.

As shown below in Figure 1, the Study Area has been divided into three (3) segments for mapping and discussion purposes. An overview of each segment of the Study Area has been provided in the following sections.

The following terms are used throughout this report to distinguish the various aquatic habitat features:

- **Watercourses:** Watercourses are permanent to intermittently flowing drainage features with defined beds and banks. Most watercourses provide direct fish habitat and other significant aquatic habitat functions.
- **Headwaters Drainage Features:** Headwaters Drainage Features (HDFs) are non-permanently flowing drainage features that may not have defined banks. HDFs typically provide intermittent drainage functions and minor aquatic habitat functions. Many HDFs do not provide direct fish habitat.
- **Tributaries:** Throughout this report the term 'tributary' is used either when referring to the watercourses and/or HDFs collectively or interchangeably.


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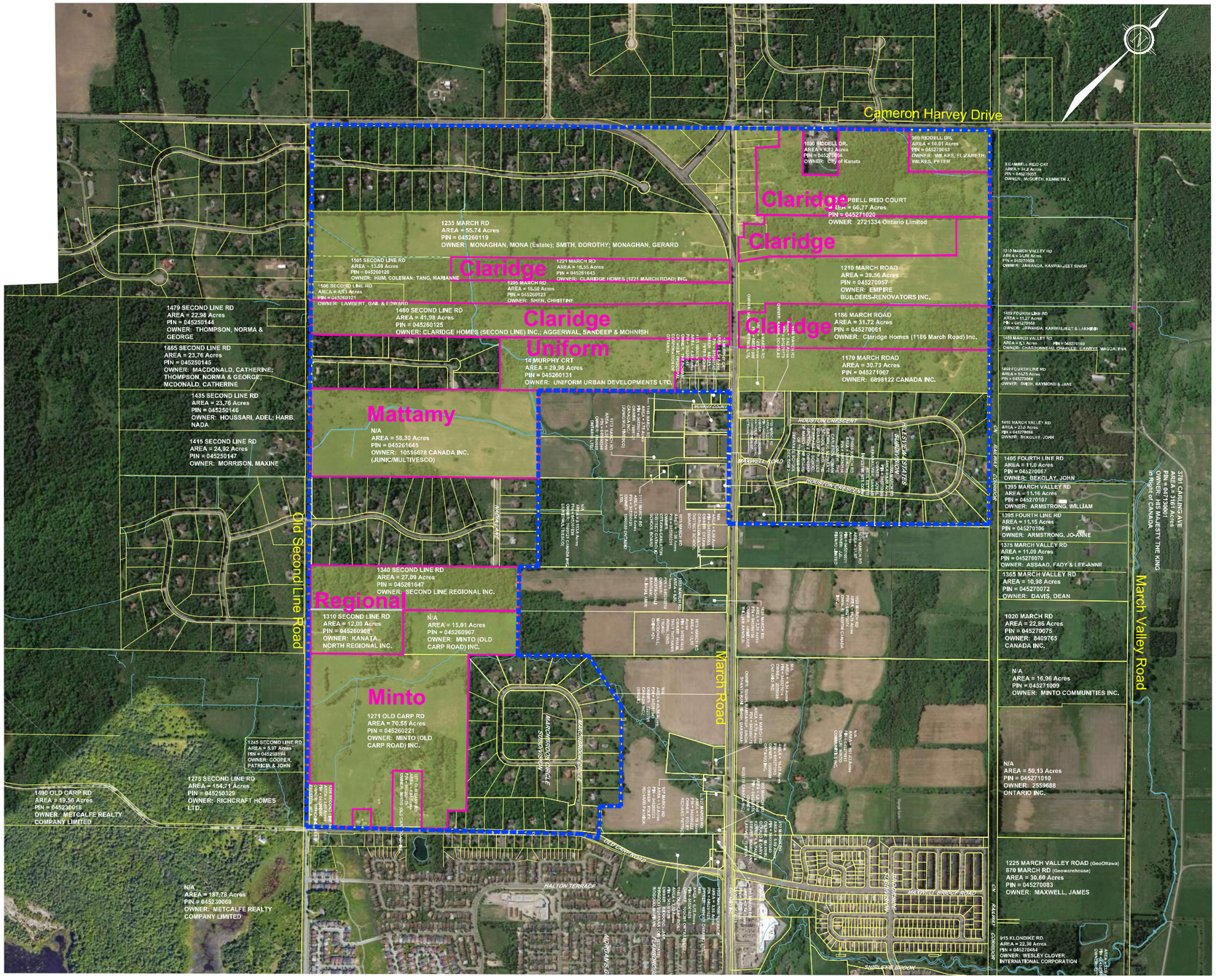
## LEGEND

Urban Expansion Area
Category 1 - Future Neighbourhood Overlay
(Total Area excluding Estate Lots = 233.5 Ha)




| South March Urban Expansion Area - Applicants | | |
|---|---|---|
| *Total Area of Lands to be included (excluding Estate Lot Subdivisions) = 233.5 Ha* | | |
| **Applicant** | **Total Holdings (Ha)** | **%of Total Applicant Holdings** |
| Claridge Homes | 64.35 | 42.21 |
| Mattamy Homes | 23.59 | 15.47 |
| Minto Communities | 36.58 | 23.99 |
| Second Line Regional Inc. (Regional Group) | 10.96 | 7.19 |
| Kanata North Regional Inc. (Regional Group) | 4.85 | 3.18 |
| Uniform Urban Developments | 12.13 | 7.96 |
| ***Total*** | ***152.46*** | ***100.00*** |

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

SCALE
1:7500 (A1)
1:15000 (11x17)
1:7500
0 100 200 300

| | |
|---|---|
| DESIGN | XXX |
| CHECKED | XXX |
| DRAWN | wls |
| CHECKED | XXX |
| APPROVED | XXX |

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CITY of OTTAWA
SOUTH MARCH URBAN EXPANSION AREA

DRAWING NAME
OWNERSHIP PLAN

PROJECT No. 121038-00
REV REV #1
DRAWING No. OwnershipPlan

M:\2021\121038\CAD\Planning\Figures\121038-OwnershipConcept_KN Applicants_Oct 21, 2024 - 9-24am_wilkes

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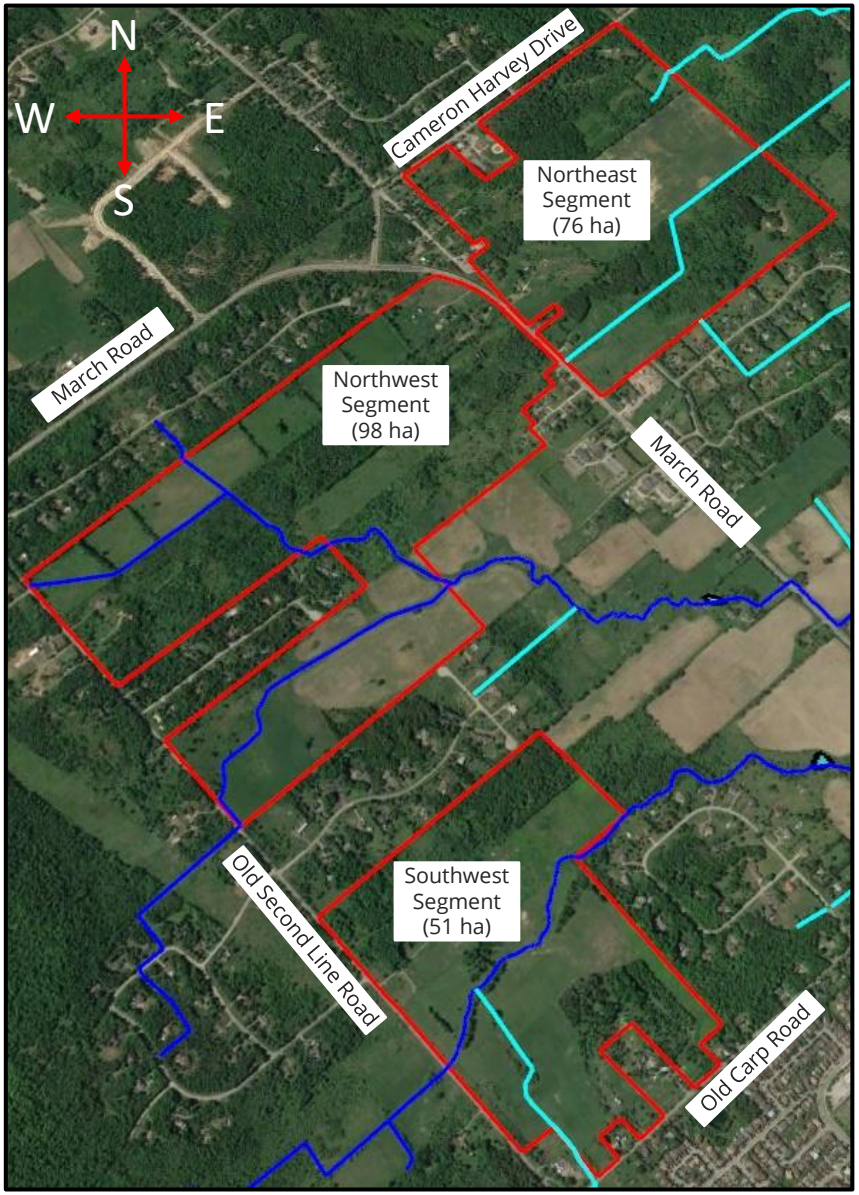
# FIGURE 1: STUDY AREA OVERVIEW

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area




Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

### 1.1.1 Southwest Segment Overview

The Southwest Segment of the Study Area is approximately 51 hectares (126 acres) in size (Refer to Figure 2). The Southwest Segment includes the parcels located at the municipal addresses 1271 Old Carp Road, 1310 Old Second Line Road, and 1340 Old Second Line Road. The parcels within the Southwest Segment are owned by Minto Communities and Regional Group. The boundaries of the Southwest Segment include Old Second Line Road (southwest), Old Carp Road (southeast), the Marchbrook Circle rural estate subdivision (east), the Copperwood Estate subdivision (northeast), and the Panandrick View Drive rural estate subdivision (north). The Copperwood Estate subdivision is part of the Kanata North Urban Expansion Area (KNUEA) and is currently under construction. The Kanata Elk Ranch lands (1271 Old Carp Road) account for the majority of the Southwest Segment. The majority of the Elk Ranch lands consist of open meadow and thickets, although there is also a Cultural Woodlot and several tree stands within the property. The northern part of the Southwest Segment (1310 & 1340 Old Second Line Road) includes an agricultural property with a mixture of meadow and thicket habitats, as well as several forest patches. The North Branch (Tributary #3) of Shirley's Brook passes through the 1271 Old Carp Road property in an approximately southwest to northeast direction. The Shirley's Brook Southern Swale (a Headwaters Drainage Feature) drains into the North Branch (Tributary #3) of Shirley's Brook. The vegetation communities and aquatic habitat features are described in greater detail in Section 3.2, Section 3.3, and Section 3.4.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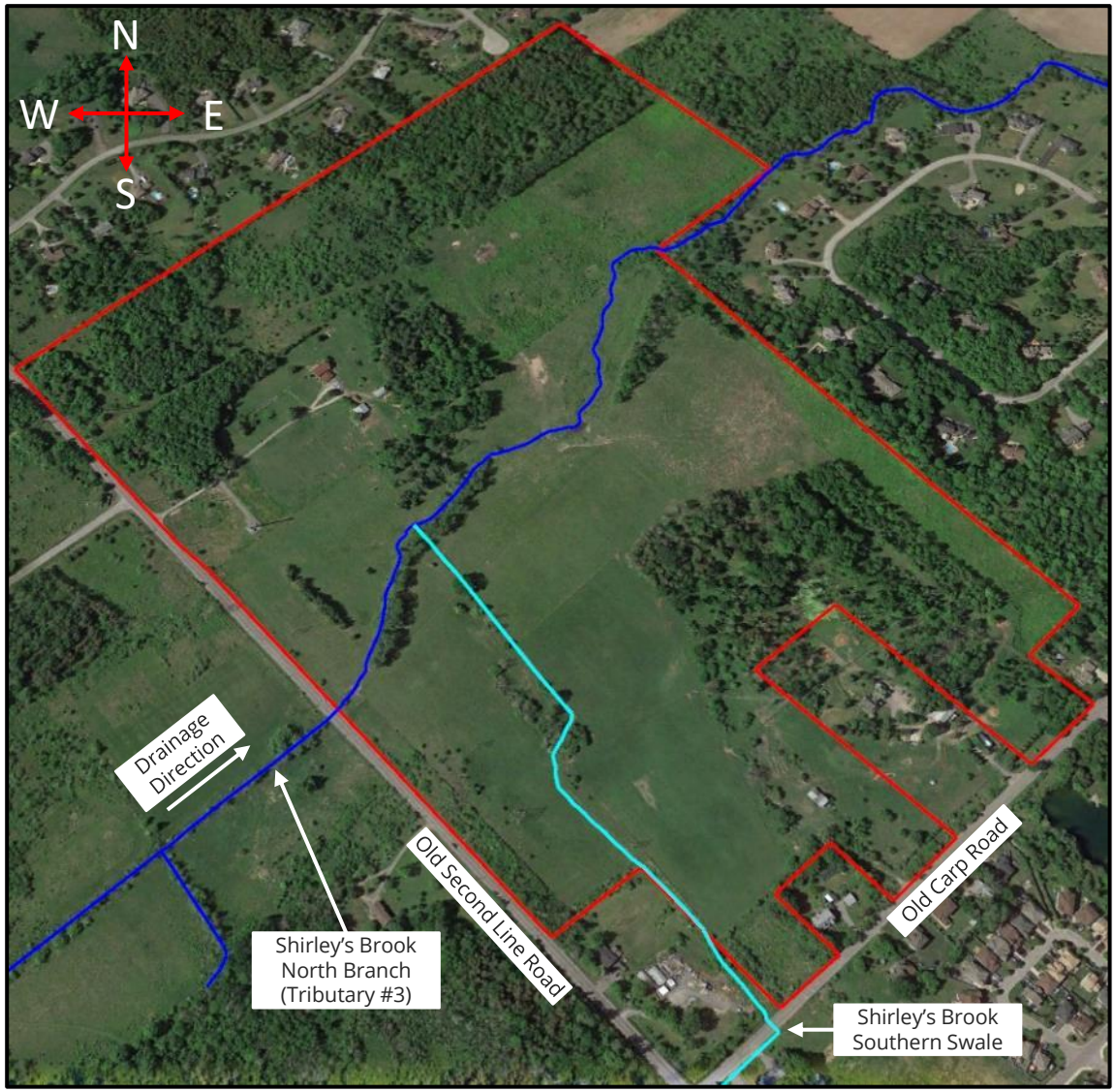
# FIGURE 2: SOUTHWEST SEGMENT OVERVIEW

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

### 1.1.2 Northwest Segment Overview

The Northwest Segment of the Study Area is approximately 98 hectares (242 acres) in size (Refer to Figure 3). The Northwest Segment includes the parcels located at the municipal addresses 14 Murphy Crescent, 1480 Old Second Line Road, 1505 Old Second Line Road, 1205 March Road, 1221 March Road, and 1235 March Road. The parcels within the Northwest Segment are owned by Mattamy Homes, Uniform Urban Developments, and Claridge Homes. The boundaries of the Northwest Segment include Old Second Line Road, the Panandrick View Drive rural estate subdivision, and the Wild Acre Lane rural estate subdivision (southwest), the Monaghan Lane rural estate subdivision (northwest), March Road (northeast), and the Copperwood Estate subdivision (southeast). The southern and northern portions of the Northwest Segment consist of agricultural lands that are dominated by cultivated fields and open meadow, which are punctuated by tree stands and hedgerows. The central part of the Northwest Segment consists of regenerating former agricultural lands that include regrowth forest, woodland, thicket, and meadow habitats. The North Tributary (Tributary #2) of Shirley's Brook flows through the Northwest Segment. The North Tributary (Tributary #2) branches into three (3) connected reaches within the Northwest Segment and all three (3) reaches intersect within the adjacent Copperwood Estate subdivision (located immediately southeast of the Northwest Segment). The vegetation communities and aquatic habitat features are described in greater detail in Section 3.2, Section 3.3, and Section 3.4.


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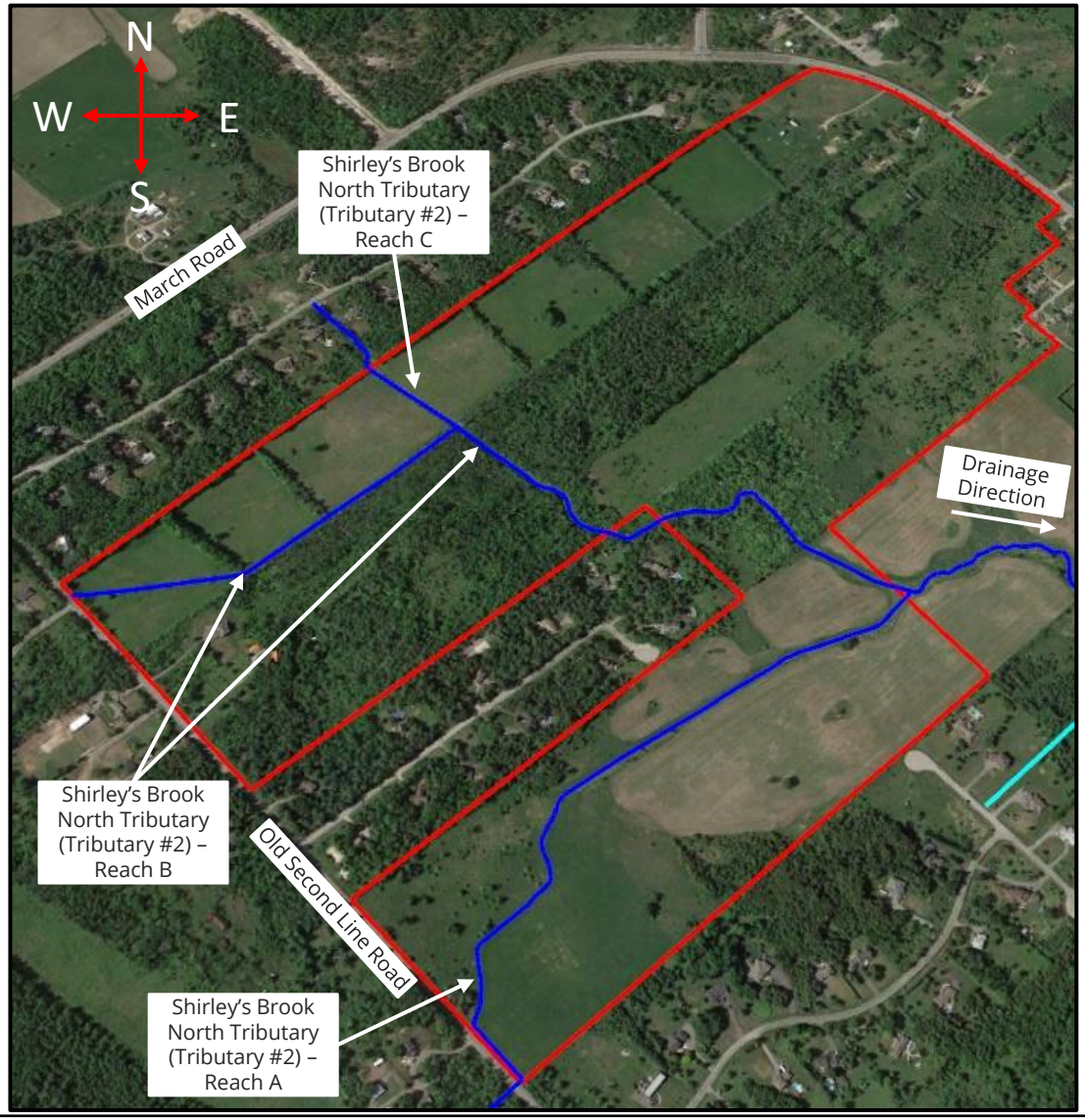
# FIGURE 3: NORTHWEST SEGMENT OVERVIEW

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

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### 1.1.3 Northeast Segment Overview

The Northeast Segment of the Study Area is approximately 76 hectares (188 acres) in size (Refer to Figure 4). The Northeast Segment includes the parcels located at the municipal addresses 1170 March Road, 1186 March Road, 1210 March Road, 17 Campbell Reid Court, 9 Campbell Reid Court, and 980 Riddell Drive. The parcels within the Northeast Segment are owned by Claridge Homes. The boundaries of the Northeast Segment include March Road and Campbell Reid Court (southwest), Cameron Harvey Drive (northwest), the Former Beachburg Railway Corridor (northeast), and the Houston Crescent rural estate subdivision (southeast). The majority of the Northeast Segment consists of regenerating former agricultural lands that include regrowth forest, woodland, thicket, and meadow habitats. There is also a large Graminoid Meadow in the central part of the Northeast Segment which has previously been managed as a hayfield. Highly disturbed Cultural Meadow and Cultural Thicket habitats are present in the western part of the Northeast Segment adjacent to the residential homes along March Road and Campbell Reid Court. The Northeast Swale is a channelized drain that conveys surface runoff from March Road through the Northeast Segment to the Former Beachburg Railway Corridor. The Shirley's Brook Northeast Tributary is a Headwaters Drainage Feature that drains from the northeast corner of the Northeast Segment towards the Former Beachburg Railway Corridor. The vegetation communities and aquatic habitat features are described in greater detail in Section 3.2, Section 3.3, and Section 3.4.


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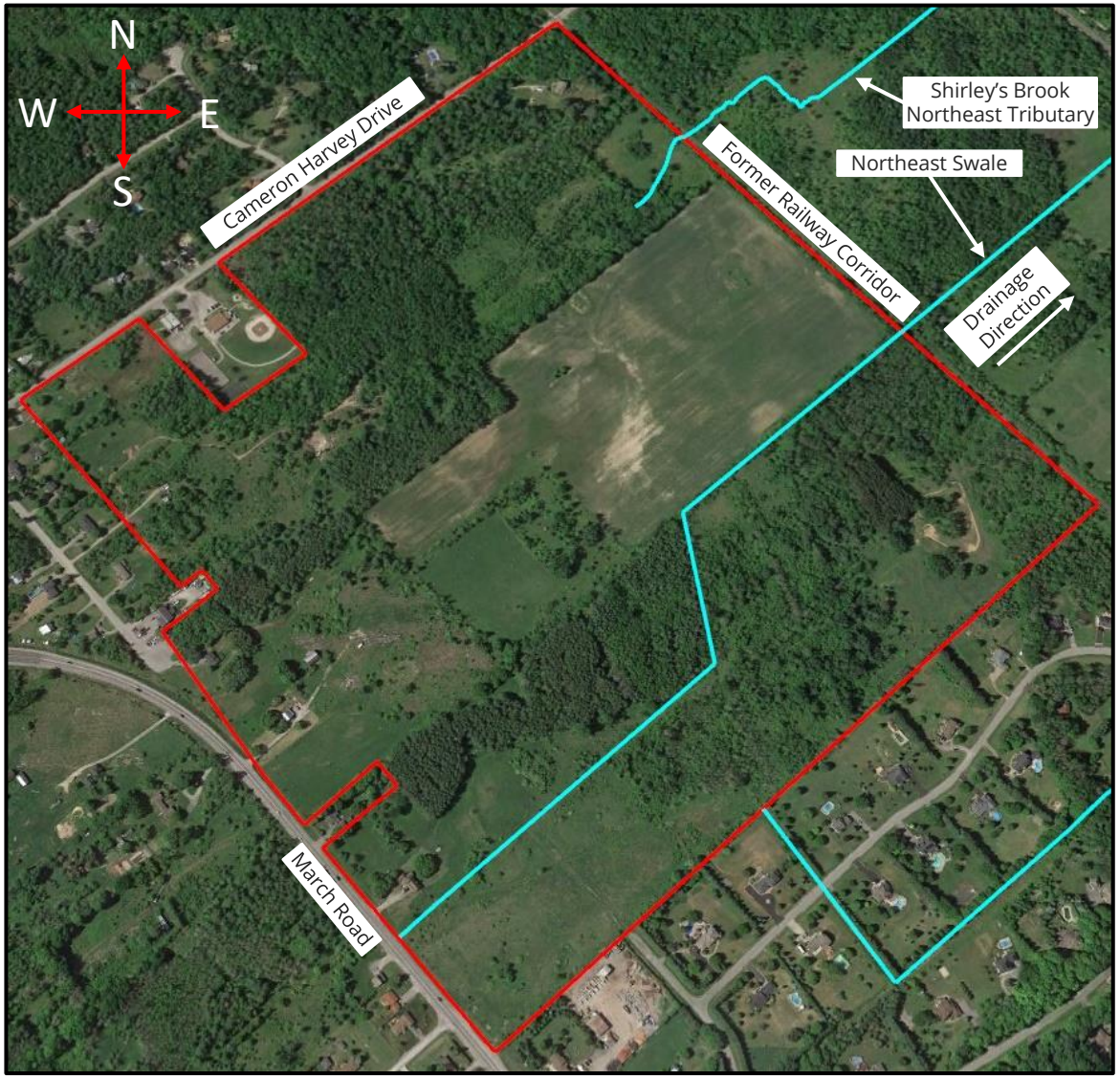
# FIGURE 4: NORTHEAST SEGMENT OVERVIEW

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area




- Study Area - Watercourse - Headwaters Drainage Feature

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

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## 1.2 Agency Consultation

The following is a summary of the anticipated agency consultation requirements:

- **City of Ottawa:** The City of Ottawa previously assessed the South March Urban Expansion Area (SMUEA) as part of the urban expansion evaluation process that was undertaken to support the development of the City of Ottawa's New Official Plan (City of Ottawa 2023a). It is anticipated that the City of Ottawa will be consulted during the review of the Official Plan Amendment (OPA) application. There will also be consultation with the City of Ottawa during the future urban expansion area design and approval process (e.g. the City of Ottawa Annex 4 – Secondary Plan Process), which will include the development of a Community Design Plan (CDP) and an Environmental Management Plan (EMP).
- **Ontario Ministry of Natural Resources and Forestry (OMNRF):** As described below in Section 3.7.7, the OMNRF Species at Risk (SAR) list for the Geographic Township of March was reviewed (Refer to Appendix C). The OMNRF Natural Heritage Information Center (NHIC) records for the grids that overlap and surround the Study Area were also reviewed and all SAR records and land use designations were recorded (OMNRF 2024).
- **Mississippi Valley Conservation Authority (MVCA) & Fisheries and Oceans Canada:** The MVCA will be circulated during the review of the OPA application. There will also be consultation with the MVCA during the future urban expansion area design and approval process (e.g. the City of Ottawa Annex 4 – Secondary Plan Process), which will include the development of a Community Design Plan (CDP) and an Environmental Management Plan (EMP). As described below in Section 4.2, it is anticipated that the future developments within the SMUEA will be required to obtain authorizations from the MVCA under O.Reg. 153/06 in instances where significant alterations are proposed to the watercourses and/or Headwaters Drainage Features. In cases where there are also significant impacts to fish habitat, the future developments within the SMUEA may be required to undertake the Fisheries Act review process. The review and/or approval process under O.Reg. 153/06 and/or the Fisheries Act should be undertaken at the Draft Plan of Subdivision and/or Site Plan Application stage (Refer to Section 4.2 for additional details).
- **Ministry of Environment Conservation and Parks (MECP):** As described below in Section 4.4, it is anticipated that the future developments within the SMUEA will be required to undertake the Ontario Endangered Species Act (ESA) review and/or approval process in instances where significant impacts to threatened and/or endangered species and/or their habitat are anticipated. As described below in Section 4.4, the Ontario ESA review and/or approval process should be undertaken in consultation with the MECP at the Draft Plan of Subdivision and/or Site Plan Application stage.

# 2.0 METHODOLOGY

This Natural Environment Existing Conditions Report (NEECR) was prepared to support the Official Plan Amendment (OPA) application for the South March Urban Expansion Area (SMUEA). It is anticipated that this NEECR will be updated and expanded in the future to support the development of the SMUEA Community Design Plan (CDP) and Environmental Management Plan (EMP) (e.g. during the City of Ottawa Annex 4 – Secondary Plan Process). The NEECR includes the following components:

- Documentation of the existing conditions and natural heritage features within the Study Area;
- Identification, mapping, and assessment of the significant natural heritage features including Significant Woodlots, Fish Habitat, Significant Wildlife Habitat, Species at Risk (SAR) Habitat, Wetlands, Areas of Natural and Scientific Interest (ANSI), and features that have been designated under the City of Ottawa Natural Heritage System (City of Ottawa 2022a);
- Targeted surveying to support the identification, mapping, and assessment of the significant natural heritage features (described below);
- Management and mitigation recommendations to support the future development of the CDP and the EMP;
- Discussion of the natural heritage features regulatory requirements; and
- The recommendations and requirements identified in this NEECR are intended to be further refined and confirmed during the future development of the SMUEA CDP and EMP (e.g. during the future Secondary Plan Process).

This NEECR was prepared with guidance from the *Natural Heritage Reference Manual* (OMNRF 2010), the *City of Ottawa Environmental Impact Study Guidelines* (City of Ottawa 2023b), and the *Provincial Planning Statement – 2024* (MMAH 2024).


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### 2.0.1 Plant Survey & Vegetation Community Mapping Methodology

The vegetation communities within the Study Area were classified and mapped according to the vegetation community naming system described in the Ecological Land Classification (ELC) manual (OMNRF 1998; Lee 2008). A three (3) season plant survey was undertaken to document the occurrence of plants, to create a plant list (Appendix A), and to support the identification and the delineation of the vegetation communities. Representative tree size measurements were taken throughout the Study Area in order to describe the vegetation communities and the composition of the treed habitats. Trees ≥10 cm diameter at breast height (dbh) in size were measured with the use a D-tape, which is a calibrated dbh tape.

Site visits to survey plants and to identify and delineate the vegetation communities were completed on the following dates:

- **Southwest Segment:** April 20th (Sunny, 4 ºC), May 8th (Sunny, 12ºC), May 25th (Sunny, 15ºC), June 1st (Sunny, 21ºC), and June 14th (Mostly Sunny, 14ºC), 2023
- **Northwest Segment:** April 20th (Sunny, 4 ºC), April 26th (Partly Cloudy, 8 ºC), May 8th (Sunny, 12ºC), May 25th (Sunny, 15ºC), June 1st (Sunny, 21ºC), and June 14th (Mostly Sunny, 14ºC), 2023
- **Northeast Segment:** April 27th (Mostly Sunny, 13 ºC), May 10th (Sunny, 16 ºC), May 24th (Mostly Sunny, 14 ºC), May 31st (Sunny, 16 ºC), and June 7th (Mostly Sunny, 17 ºC), 2023

The following terms are used throughout this report:

- Diameter at Breast Height (dbh) means the measurement of the trunk of a tree at a height of 120 cm above grade for trees 15 cm diameter or greater, and at a height of 30 cm above grade for trees less than 15 cm diameter.
- The Critical Root Zone (CRZ) is 10 centimeters from the trunk of a tree for every centimeter of trunk dbh. The CRZ is calculated as dbh x 10 cm.


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### 2.0.2 Tributary Mapping & Fish Habitat Assessment Methodology

As described above, there are several watercourses and Headwaters Drainage Features (HDFs) within the Study Area. As part of this Natural Environment Existing Conditions Report (NEECR), each of the watercourses and the HDFs was mapped, their ecological characteristics were described, the quality of the aquatic habitat within each feature was evaluated, and the potential presence/absence of fish habitat was assessed. As described below, the Blanding's Turtle Basking Surveys required the completion of five (5) Site visits between April 15th and June 15th, during which the entire length of each watercourse and HDF was surveyed. The watercourses and HDFs were mapped, described, and evaluated during the Blanding's Turtle Basking Surveys. The Blanding's Turtle Basking Survey dates and weather conditions are summarized below in Table B (Refer to Section 3.7.5).


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### 2.0.3 Wildlife & Species at Risk Survey Methodology

The following targeted wildlife and Species at Risk (SAR) surveys were completed as part of this Natural Environment Existing Conditions Report (NEECR):

- **Breeding Bird Surveys:** Breeding Bird Surveys were undertaken following the *Ontario Breeding Bird Atlas – Point Count Surveys Method* (Birds Ontario 2021). The timing and methodology of the surveys followed the requirements outlined in the Ontario Ministry of Natural Resources and Forestry (OMNRF) *Survey Methodology under the Endangered Species Act: Dolichonyx oryzivorus (Bobolink)* (OMNRF 2011). Three (3) Breeding Bird Surveys were completed between the last week of May and the first week of July. The Breeding Bird Surveys addressed the entirety of the Study Area. The Breeding Bird Survey points are shown below in Figures 17 to 19 (Refer to Section 3.7.2). The Breeding Bird Survey dates and weather conditions are summarized below in Table A (Refer to Section 3.7.2).
- **Butternut Trees & Black Ash Trees:** During the plant surveys (described above), any Butternut Trees (endangered) and any Black Ash Trees (endangered) that were encountered within the Study Area were documented in order to describe the presence/absence of those species within each treed habitat. However, it should be noted that a detailed tree inventory has not been completed, and therefore the survey results for the Butternut Trees and the Black Ash Trees should not be considered comprehensive. Refer to Section 3.7.3 and Section 3.7.4 for additional details.
- **Blanding's Turtle Basking Surveys:** Blanding's Turtle (threatened) Basking Surveys were undertaken within each of the watercourses and the Headwaters Drainage Features (HDFs) that occur within the Study Area. During each Blanding's Turtle Basking Survey, the entire length of each watercourse and HDF was assessed. The Blanding's Turtle Basking Surveys were completed following the OMNRF *Survey Protocol for Blanding's Turtle (Emydoidea blandingii) in Ontario* (OMNRF 2015a). Per the OMNRF protocol, five (5) surveys were completed during suitable weather conditions between April 15$^{th}$ and June 15$^{th}$. The Blanding's Turtle Basking Survey dates and weather conditions are summarized below in Table B (Refer to Section 3.7.5).
- **Eastern Whip Poor Will Call Surveys:** Eastern Whip Poor Will (threatened) Call Surveys were undertaken following the OMNRF *Draft Survey Protocol for Eastern Whip Poor Will* (OMNRF 2014a). Per the OMNRF protocol, three (3) night time surveys were completed during suitable weather conditions between mid-May and the end of June. The Eastern Whip Poor Will Call Survey points are shown below in Figures 23 to 25 (Refer to Section 3.7.6). The Eastern Whip Poor Will Call Survey dates and weather conditions are summarized below in Table C (Refer to Section 3.7.6).

# 3.0 EXISTING CONDITIONS

## 3.1 Topographic & Geological Conditions

The following is a summary of the topographic and geological conditions within the Study Area:

- **Southwest Segment:** The southwest corner of the Southwest Segment occurs at an elevation of approximately 102 m Above Sea Level (ASL) (at the intersection of Old Carp Road and Old Second Line Road). The Southwest Segment has a gradual downward slope to the northeast, reaching approximately 92 m ASL at its northeast corner (City of Ottawa 2023c). The Southwest Segment is well drained. Soil is present at the surface throughout the Southwest Segment.
- **Northwest Segment:** The southwestern side of the Northwest Segment occurs at an elevation of approximately 94 m ASL (along Old Second Line Road). The Northwest Segment has a gradual downward slope towards the northeast, reaching approximately 88 m ASL at March Road. The Northwest Segment is generally well drained, although floodplain areas are shown to exist around the North Tributary (Tributary #2) – Reach B and the North Tributary (Tributary #2) – Reach C (City of Ottawa 2023c; MVCA 2023). Soil is present at the surface throughout the majority of the Northwest Segment. As described below in Section 3.4.2, portions of the channel substrate of the North Tributary (Tributary #2) – Reach A consist of exposed bedrock in the southwestern part of the Northwest Segment.
- **Northeast Segment:** The northwest corner of the Northeast Segment occurs at an elevation of approximately 88 m ASL (along Cameron Harvey Drive). The Northeast Segment has a gradual downward slope towards the southeast, reaching approximately 70 m ASL at the Former Beachburg Railway Corridor (City of Ottawa 2023c). The Northeast Segment is well drained. As described below in Section 3.2.3, small areas of exposed bedrock are present within the Cultural Meadow and the Cultural Thicket adjacent to March Road. Soil is present at the surface throughout the majority of the Northeast Segment. Sandy soils were observed in the southeastern part of the Northeast Segment.


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## 3.2 Vegetation Communities

The Study Area includes a variety of vegetation communities including farmed fields, meadows, thickets, forest, woodland, hedgerows, and several smaller tree stands. The terrestrial vegetation communities are described in the following sections. The aquatic habitat features are described below in Section 3.4. Refer to Appendix A for a list of the plant species that occur within the Study Area.

### 3.2.1 Open Habitats & Thickets (Southwest)

The open habitats and thickets that occur within the Southwest Segment are shown below in Figure 5. The open habitats and thickets within the Southwest Segment include the following:

- **Graminoid Meadow:** The majority of the surface area of the Southwest Segment consists of a Graminoid Meadow which is used as a pasture for the elk herds within the 1271 Old Carp Road property and by horses that are kept within the 1310 Old Second Line Road property. The Graminoid Meadow is dominated by Meadow Grass. The groundcover also includes Orchard Grass, Timothy, Dandelion, Common Strawberry, Ox-eye Daisy, Red Clover, White Clover, Bladder Campion, Common Milkweed, Canada Thistle, Colt's Foot, White Sweet Clover, Common Plantain, Common Buttercup, Prickly Lettuce, Common Ragweed, Queen Anne's Lace, and Bird's Foot Trefoil. The shrub cover is generally sparse and includes Ground Juniper, Hawthorn, Prickly Ash, and Common Buckthorn. The tree cover is also sparse and includes isolated stems of Manitoba Maple, American Elm, and White Ash up to approximately 40 cm diameter at breast height (dbh) in size.
- **Canada Goldenrod - Forb Meadow:** A Canada Goldenrod – Forb Meadow is present in the northwestern part of the Southwest Segment (adjacent to Old Second Line Road). The Canada Goldenrod – Forb Meadow is dominated by Canada Goldenrod and other forbs. The groundcover plants also include Common Milkweed, Queen Anne's Lace, Curled Dock, New England Aster, Tall White Aster, Daisy Fleabane, Philadelphia Fleabane, Wild Parsnip, Common Mullein, and Brome Grass. Common Buckthorn shrubs and young White Pine stems (<10 cm dbh) are also present.
- **Deciduous Shrub Thicket:** Several patches of Deciduous Shrub Thicket are present adjacent to Old Second Line Road and Old Carp Road within the southwest and southern portions of the Southwest Segment. A large Deciduous Shrub Thicket is present in the northern, northeastern, and eastern parts of the Southwest Segment. The Deciduous Shrub Thickets have similar species composition throughout the Southwest Segment. The Deciduous Shrub Thickets are dominated by Common Buckthorn, Domestic Apple, Prickly Ash, Wild Red Raspberry, Tartarian Honeysuckle, and young White Ash, Manitoba Maple, and American Elm stems. Lilac, Purple Flowering


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Raspberry, Staghorn Sumac, Hawthorn, Slender Willow, and recent regrowth stems of Sugar Maple, Large Tooth Aspen, and Trembling Aspen are also present. Young White Pine stems occur more frequently in the northern parts of the Deciduous Shrub Thickets. Most trees within the Deciduous Shrub Thickets represent recent regrowth and are <10 cm dbh in size. The groundcover is dense and includes Canada Goldenrod, Riverbank Grape, Virginia Creeper, Common Ragweed, Colt's Foot, Prickly Lettuce, Red Clover, White Clover, Wild Parsnip, and Common Mullein. Several open patches exist within the Deciduous Shrub Thickets, particularly in the northern part of the Southwest Segment. However, the open patches are too small to be considered distinct ecological communities. The open patches generally consist of overgrown forb dominated meadow. Groundcover plants within the open patches include Canada Goldenrod, Wild Parsnip, Brome Grass, Meadow Grass, Common Strawberry, and Dandelion.


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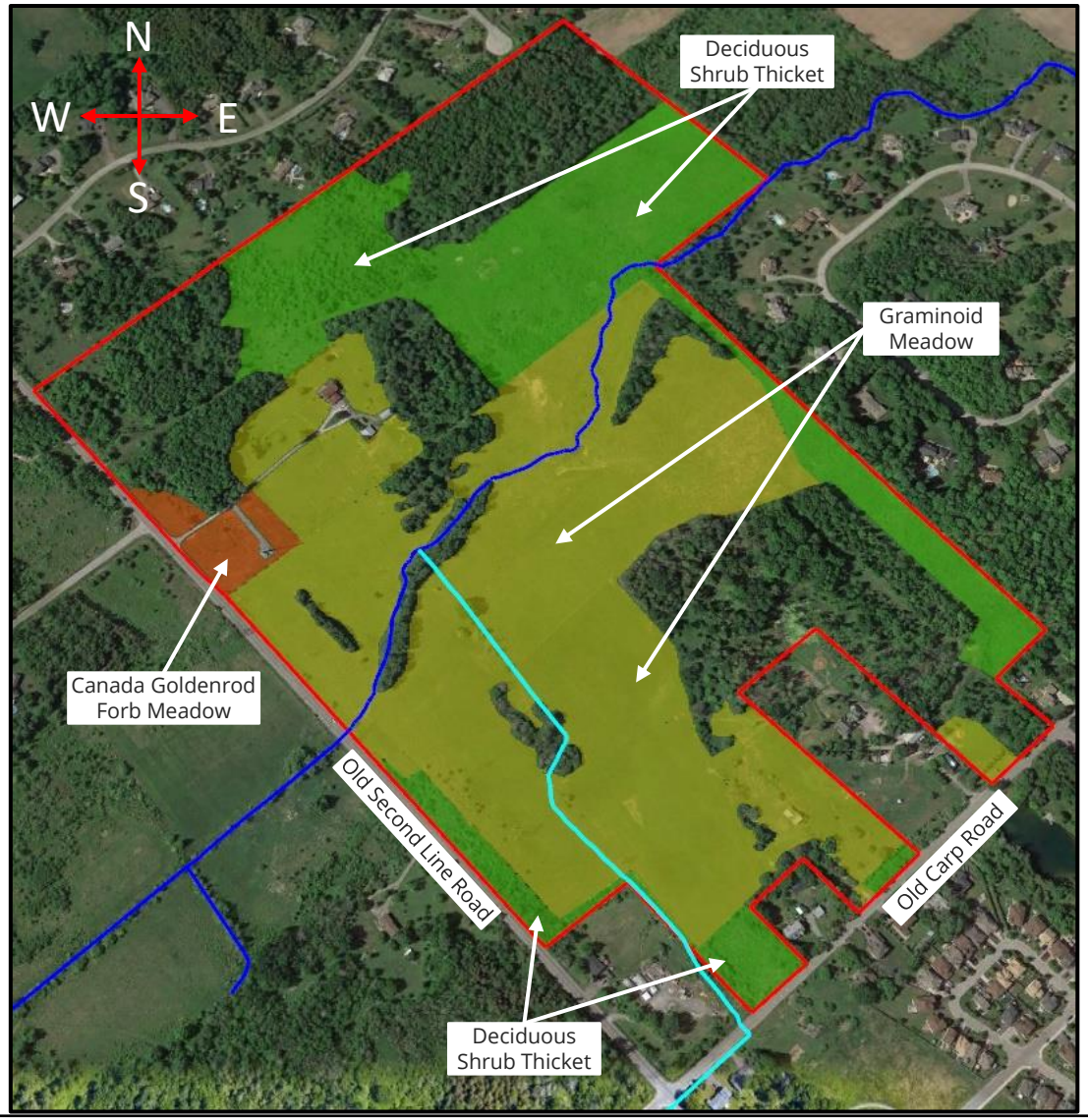
# FIGURE 5: SOUTHWEST SEGMENT – OPEN HABITATS & THICKETS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

- Study Area - Watercourse - Headwaters Drainage Feature

October 2024

**Photograph 1**: Looking east at the Graminoid Meadow within the central part of the Southwest Segment (April 20th, 2023).

**Photograph 2**: Elk grazing within the Graminoid Meadow in the northern part of the Southwest Segment. Tree Stand E is visible in the background (May 8th, 2023).


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**Photograph 3**: Looking north at the Canada Goldenrod – Forb Meadow within the northern part of the Southwest Segment (June 1st, 2023).

**Photograph 4**: Looking north from Old Carp Road at the Deciduous Shrub Thicket within the southern part of the Southwest Segment (April 20th, 2023).


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**Photograph 5**: Looking southeast from Old Second Line Road at the Deciduous Shrub Thicket within the western part of the Southwest Segment (June 1st, 2023).

**Photograph 6**: The Deciduous Shrub Thicket in the northern part of the Southwest Segment (May 8th, 2023).


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**Photograph 7**: The Deciduous Shrub Thicket in the northern part of the Southwest Segment (May 25th, 2023).

**Photograph 8**: The Deciduous Shrub Thicket in the northeastern part of the Southwest Segment (April 20th, 2023).


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### 3.2.2 Open Habitats & Thickets (Northwest)

The open habitats and thickets that occur within the Northwest Segment are shown below in Figure 6. The open habitats and thickets within the Northwest Segment include the following:

- **Fallow Agricultural Field:** A Fallow Agricultural Field is present within the southeastern part of the Northwest Segment. The Fallow Agricultural Field was cultivated in recent years and has not significantly regenerated to natural meadow conditions. The Fallow Agricultural Field has very few trees and shrubs. The groundcover is dominated by recent weedy regrowth including Dandelion, Red Clover, White Clover, Canada Goldenrod, Wild Parsnip, Common Burdock, Meadow Grass, Barnyard Grass, Philadelphia Fleabane, Daisy Fleabane, Lamb's Quarters Pigweed, Canada Thistle, Bull Thistle, Common Mullein, Green Foxtail, Common Milkweed, and Queen Anne's Lace.
- **Graminoid Meadow:** As shown below in Figure 6, there are several patches of Graminoid Meadow within the Northwest Segment. In each case, the patches of Graminoid Meadow represent agricultural fields that have not been cultivated recently. Several of the Graminoid Meadow patches continue to be harvested for hay. The species composition of the Graminoid Meadow is similar throughout the Northwest Segment. The Graminoid Meadow patches are dominated by grasses including Meadow Grass, Brome Grass, and Timothy. The groundcover also includes White Bedstraw, Canada Goldenrod, Common Milkweed, Bull Thistle, Dandelion, Daisy Fleabane, Queen Anne's Lace, Common Strawberry, Ox-eye Daisy, Red Clover, White Clover, Bladder Campion, Ground Ivy, Canada Thistle, White Sweet Clover, Common Plantain, Common Buttercup, Prickly Lettuce, Wild Parsnip, Barnyard Grass, and Bird's Foot Trefoil. Shrub cover is sparse in most areas, although shrubs are regenerating and occur more frequently in areas that haven't been harvested for hay in recent years (e.g. in the southwest corner of the Northwest Segment and in the central part of the Northwest Segment). Shrubs are also common around the edges of each patch of Graminoid Meadow. The shrub cover includes Hawthorn, Common Buckthorn, Wild Red Raspberry, Domestic Apple and Ground Juniper. The Graminoid Meadow within the eastern part of the 1235 March Road parcel (at the northeast corner of the Northwest Segment) is partially disturbed by historic farming and residential activities.
- **Canada Goldenrod - Forb Meadow:** A Canada Goldenrod - Forb Meadow is present within the central part of the Northwest Segment. The Canada Goldenrod – Forb Meadow is dominated by Canada Goldenrod and other forbs. The groundcover plants also include White Bedstraw, Common Milkweed, Queen Anne's Lace, Curled Dock, New England Aster, Tall White Aster, Daisy Fleabane, Philadelphia Fleabane, Common Strawberry, Wild Parsnip, Common Mullein, and Brome Grass. Portions of the Canada Goldenrod – Forb Meadow include moderately dense shrub growth including Common Buckthorn and young White Pine and White Ash stems (<10 cm diameter at breast height (dbh) in size).

- **Deciduous Shrub Thicket:** A Deciduous Shrub Thicket is present in the central part of the Northwest Segment. The North Tributary (Tributary #2) – Reach B passes through the Deciduous Shrub Thicket. The Deciduous Shrub Thicket is dominated by shrubs including Common Buckthorn, Glossy Buckthorn, and Prickly Ash. Young stems of White/Green Ash, American Elm, Sugar Maple, White Cedar, and White Pine (up to 20 cm dbh) occur frequently and have overgrown the shrubs in some areas. Wild Red Raspberry, Hawthorn, Tartarian Honeysuckle, Slender Willow, and recent regrowth Trembling Aspen are also present. The groundcover is dense and includes Canada Goldenrod, Riverbank Grape, and Virginia Creeper.
- **Lawn/Yard:** The Lawns/Yards around the houses at 1506 Old Second Line Road, 1518 Old Second Line Road, 1205 March Road, and 1221 March Road are included within the Study Area. Each of the residential properties includes a Lawn/Yard with landscaping features. The Lawns/Yards are not natural habitat features. The majority of the surface area of each Lawn/Yard consists of mowed grass (lawn) with common lawn weeds (e.g. Dandelion, Common Strawberry, Red Clover, White Clover, Common Plantain, etc.). Domestic Apple and Tartarian Honeysuckle shrubs are present within the yards and around the edges of 1205 March Road and 1221 March Road. The trees within each Lawn/Yard include Manitoba Maple, Red Pine, White Pine, Sugar Maple, and other planted ornamental species. Most tree stems are <40 cm dbh in size.


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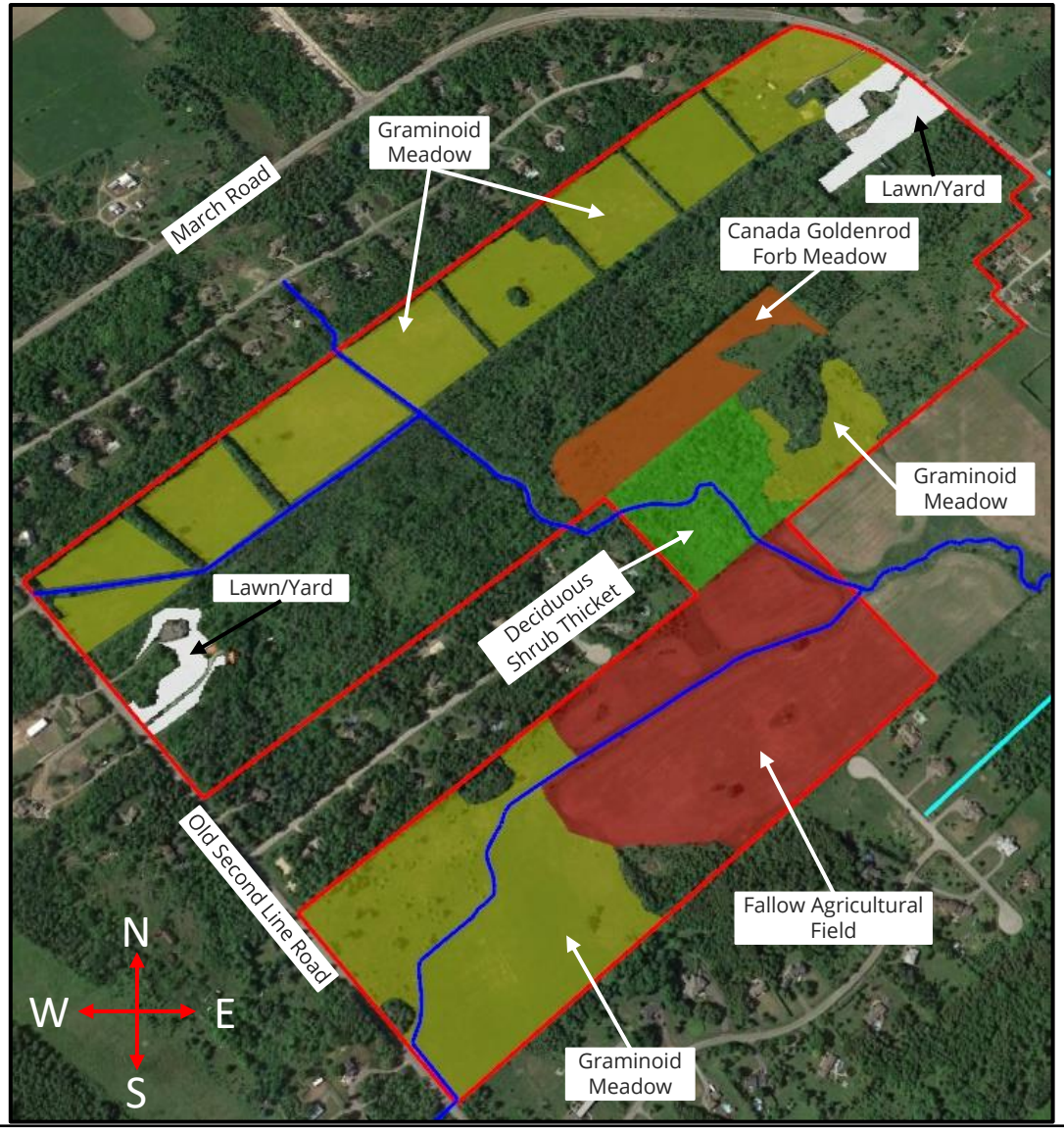
# FIGURE 6: NORTHWEST SEGMENT – OPEN HABITATS & THICKETS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

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**Photograph 9**: Looking north at the Fallow Agricultural Field in the southeastern part of the Northwest Segment (May 8th, 2023).

**Photograph 10**: Looking southeast at the Fallow Agricultural Field in the southeastern part of the Northwest Segment (May 25th, 2023).


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**Photograph 11**: Looking west at the Graminoid Meadow in the southwestern part of the Northwest Segment (April 20th, 2023).

**Photograph 12**: Looking north at the Graminoid Meadow in the central part of the Northwest Segment (May 8th, 2023).


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**Photograph 13**: Looking south at the Graminoid Meadow in the northern part of the Northwest Segment (May 25th, 2023).

**Photograph 14**: Looking north at the Canada Goldenrod – Forb Meadow in the central part of the Northwest Segment (April 20th, 2023).


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**Photograph 15**: Looking south at the Canada Goldenrod – Forb Meadow in the central part of the Northwest Segment (May 25th, 2023).

**Photograph 16**: The interior of the Deciduous Shrub Thicket in the central part of the Northwest Segment (April 20th, 2023).


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**Photograph 17**: The interior of the Deciduous Shrub Thicket in the central part of the Northwest Segment (June 1st, 2023).

**Photograph 18**: Looking west at the Lawn/Yard surrounding the residential home at 1205 March Road (April 26th, 2023).


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### 3.2.3 Open Habitats & Thickets (Northeast)

The open habitats and thickets that occur within the Northeast Segment are shown below in Figure 7. The open habitats and thickets within the Northeast Segment include the following:

- **Cultural Meadow:** Several patches of Cultural Meadow are present within the western and northwestern parts of the Northeast Segment (adjacent to March Road and Cameron Harvey Drive). There is also a patch of Cultural Meadow within the southeastern corner of the Northeast Segment. The Cultural Meadow patches that are present adjacent to Cameron Harvey Drive and March Road consist of open areas adjacent to residential homes, including homes that are currently occupied and residences that are derelict and/or demolished. The open areas surrounding the current and historic residential homes are highly disturbed environments that have been impacted by periodic mowing, the accumulation of garbage/debris, and landscaping. There are small areas of exposed bedrock within the Cultural Meadow patches adjacent to March Road. The Cultural Meadow patch in the southeastern corner of the Northeast Segment includes an open area that is used as a dirt bike track. The Cultural Meadow patch in the southeastern corner of the Northeast Segment is a highly disturbed environment that has been impacted by tree clearing, the creation of vehicle tracks, and the accumulation of garbage/debris. Each of the Cultural Meadow patches has similar species composition. Meadow Grass, Timothy, and Barnyard Grass dominate the groundcover of the Cultural Meadow patches. The groundcover also includes White Bedstraw, Dandelion, Red Clover, White Clover, Canada Goldenrod, Wild Parsnip, Ox-eye Daisy, Sow Thistle, Lamb's Quarters Pigweed, Tufted Vetch, Bull Thistle, Common Burdock, Common Mullein, and Queen Anne's Lace. The shrub cover is generally sparse and consists of Common Buckthorn, Domestic Apple, Wild Red Raspberry, and Tartarian Honeysuckle. The tree cover includes individual Manitoba Maple, American Elm, Red Pine, Norway Spruce, and Trembling Aspen stems up to approximately 30 cm diameter at breast height (dbh) in size.
- **Graminoid Meadow:** There is a large Graminoid Meadow within the central part of the Northeast Segment. The Graminoid Meadow has been cultivated historically and has previously been managed as a hayfield. The Graminoid Meadow is dominated by grasses including Meadow Grass, Brome Grass, and Timothy. The Graminoid Meadow has not been harvested recently and there are large patches that are dominated by forb species, especially Canada Goldenrod. The groundcover also includes White Bedstraw, Common Milkweed, Bull Thistle, Dandelion, Daisy Fleabane, Philadelphia Fleabane, Queen Anne's Lace, Common Strawberry, Ox-eye Daisy, Red Clover, White Clover, Wild Parsnip, Bladder Campion, Canada Thistle, White Sweet Clover, Common Plantain, Common Buttercup, Prickly Lettuce, Common Ragweed, Yellow Rocket, Barnyard Grass, and Bird's Foot Trefoil. There is very little shrub cover and/or tree

growth within the Graminoid Meadow. There is a large rock pile within the eastern part of the Graminoid Meadow (refer to Section 3.6 for additional details).

- **Canada Goldenrod - Forb Meadow:** A Canada Goldenrod - Forb Meadow is present within the southwestern corner of the Northeast Segment. The Canada Goldenrod – Forb Meadow is dominated by Canada Goldenrod and other forbs. The groundcover plants include Common Milkweed, Queen Anne's Lace, Curled Dock, New England Aster, Tall White Aster, Daisy Fleabane, Philadelphia Fleabane, Wild Parsnip, Colt's Foot, Common Mullein, and Brome Grass. Portions of the Canada Goldenrod – Forb Meadow include dense shrub stands where the meadow has become overgrown. The shrub stands include a mixture of Prickly Ash, Domestic Apple, Wild Red Raspberry, Tartarian Honeysuckle, Hawthorn and Common Buckthorn. Recent regrowth stems of White Pine, White Ash, Manitoba Maple, American Elm and Bur Oak occur throughout the Canada Goldenrod – Forb Meadow (<20 cm dbh in size).
- **Cultural Thicket:** There are two (2) Cultural Thicket patches within the western and northwestern parts of the Northeast Segment (adjacent to March Road and Cameron Harvey Drive). The Cultural Thicket patches consist of regrowth areas adjacent to the residential homes, including homes that are currently occupied and residences that are derelict and/or demolished. The regrowth areas surrounding the current and historic residential homes are highly disturbed environments that have been impacted by the accumulation of garbage/debris, vegetation clearing, and landscaping. There are small areas of exposed bedrock within the Cultural Thicket patches. The Cultural Thicket patches are dominated by dense shrub cover and young tree stems. The dominant shrubs include a diverse mix of native and invasive species including Domestic Apple, Common Buckthorn, Wild Red Raspberry, Hawthorn, Tartarian Honeysuckle, and Red Osier Dogwood. Stands of Prickly Ash, Lilac and Staghorn Sumac are also present in some areas. The trees include recent regrowth stems of Manitoba Maple, American Elm, White Ash, White Cedar, and Trembling Aspen. The trees generally consist of saplings <10 cm dbh in size, although individual trees up to 30 cm dbh in size are also present. There are several isolated older Manitoba Maple stems that are up to 80 cm dbh in size. The groundcover is dominated by weedy regrowth including Canada Goldenrod, Queen Anne's Lace, Meadow Grass, Barnyard Grass, Timothy, Common Burdock, Wild Parsnip, Red Clover, White Clover, Common Mullein, Curled Dock, New England Aster, Tall White Aster, Daisy Fleabane, Philadelphia Fleabane and Brome Grass.
- **Deciduous Shrub Thicket:** A Deciduous Shrub Thicket is present in the northeastern part of the Northeast Segment. The Deciduous Shrub Thicket is dominated by Red Osier Dogwood and Wild Red Raspberry shrubs, as well as recent regrowth Trembling Aspen, White Ash, and American Elm stems. Common Buckthorn, Tartarian Honeysuckle, Slender Willow and recent regrowth White Pine and Manitoba Maple stems are well represented. The trees generally consist of

saplings <10 cm dbh in size, although individual trees up to 30 cm dbh in size are also present. The groundcover in open areas is dominated by Canada Goldenrod.


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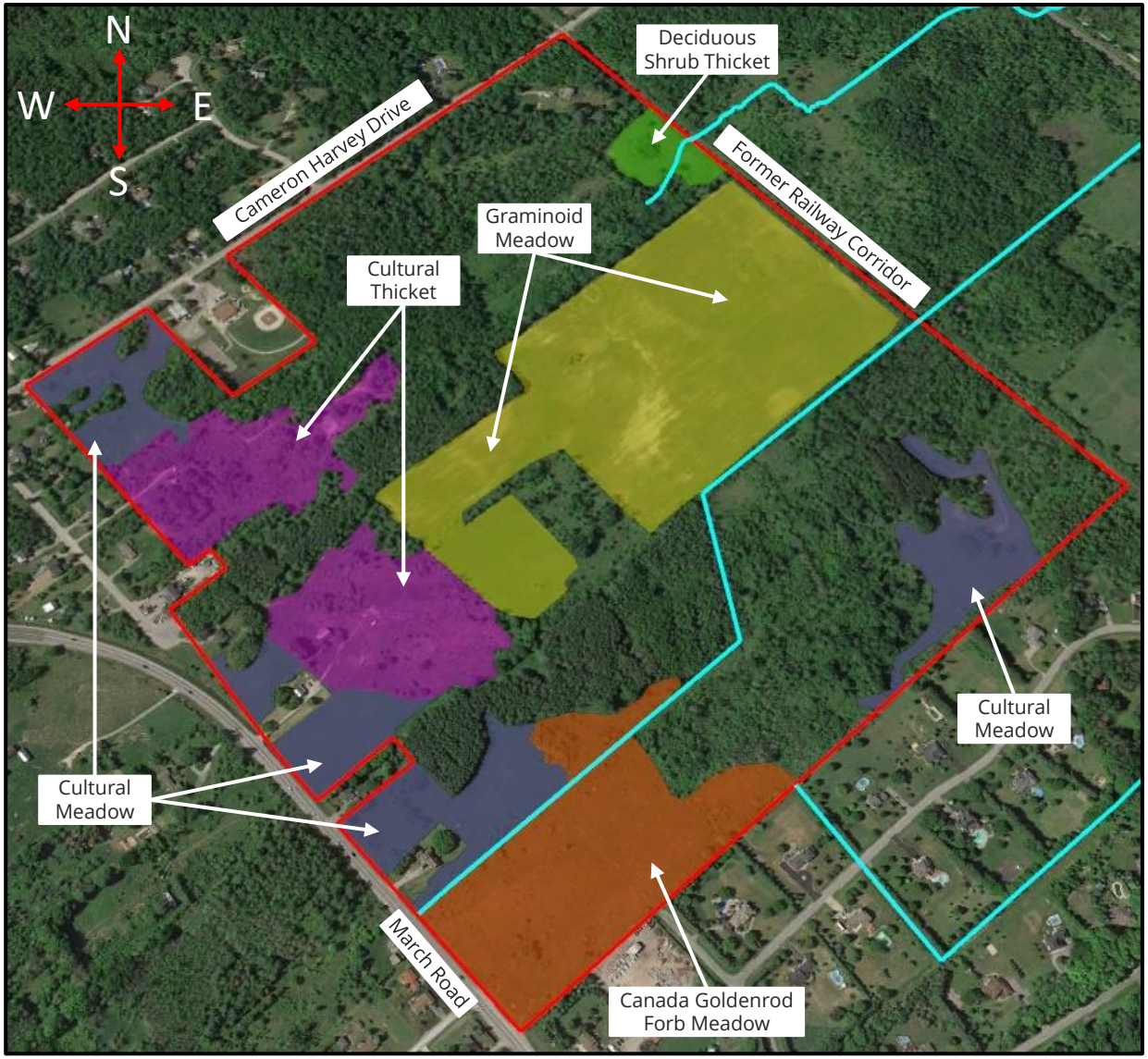
# FIGURE 7: NORTHEAST SEGMENT – OPEN HABITATS & THICKETS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

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**Photograph 19**: Looking south at the Cultural Meadow patch adjacent to Cameron Harvey Drive (April 27th, 2023).

**Photograph 20**: Looking northeast at the Cultural Meadow patch adjacent to March Road (April 27th, 2023).


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**Photograph 21**: Looking northeast at the Cultural Meadow patch in the southeastern corner of the Northeast Segment (April 27th, 2023).

**Photograph 22**: Looking north across the western part of the Graminoid Meadow (May 10th, 2023).


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**Photograph 23**: Looking east across the eastern part of the Graminoid Meadow (May 24th, 2023).

**Photograph 24**: Looking southwest across the Canada Goldenrod – Forb Meadow (May 24th, 2023).


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**Photograph 25**: Looking west at the northern Cultural Thicket patch (May 10th, 2023).

**Photograph 26**: Looking north at the northern Cultural Thicket patch (May 24th, 2023).

**Photograph 27**: Looking south at the southern Cultural Thicket patch (April 27th, 2023).

**Photograph 28**: Looking west at the Deciduous Shrub Thicket (April 27th, 2023).


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### 3.2.4 Treed Habitats (Southwest)

The treed habitats (e.g. forest, woodlands, hedgerows, and tree stands) that occur within the Southwest Segment are shown below in Figure 8. The treed habitats within the Southwest Segment include the following:

- **Cultural Woodlot:** A Cultural Woodlot is present in the southeastern part of the Southwest Segment (within the Kanata Elk Ranch lands). The Cultural Woodlot is approximately 5.2 hectares in size. The Cultural Woodlot is a highly disturbed forest community. The feature is fragmented by an interconnected system of livestock fences and access paths, which create many forest openings. There is extensive deadfall throughout the Cultural Woodlot due to the effects of the Emerald Ash Borer (e.g. the death of the large White Ash trees), selective tree clearing, and windthrow damage. The extensive deadfall throughout the forest has also created many openings and disturbed forest patches. A diverse range of trees of different ages are present within the Cultural Woodlot, reflecting its history of grazing by the elk herds, agricultural management, selective tree clearing, and tree planting. The Cultural Woodlot includes a mixture of White Ash, Ironwood, American Elm, Sugar Maple, Basswood, Bur Oak, Manitoba Maple, and White Pine, which vary in dominance throughout the feature. Red Oak, Black Cherry, Trembling Aspen, and White Spruce are also present, as are stands dominated by White Cedar. Many of the coniferous trees (e.g. White Pine, White Spruce, and White Cedar) were planted by the farmer to augment the tree cover. Most stems are between approximately 10 cm and 30 cm diameter at breast height (dbh) in size. However, older stems up to 50 cm dbh in size occur frequently, and individual Sugar Maple and White Pine up to 70 cm dbh are present in the northern part of the feature. Several Butternut Trees occur within the Cultural Woodlot. The shrub cover is sparse and includes Prickly Ash and Common Buckthorn. The groundcover reflects the highly disturbed condition of the feature. Due to the elk grazing, the groundcover is sparse in areas with an intact tree canopy. The groundcover within the forest openings and other disturbed areas is dense, and is generally similar to the adjacent Graminoid Meadow (described above). Overall, the Cultural Woodlot can be characterized as a highly fragmented and disturbed forest community.
- **Dry to Fresh White Cedar – Hardwood Mixed Forest:** Two (2) woodlots that are comprised of Dry to Fresh White Cedar – Hardwood Mixed Forest are present within the northern part of the Southwest Segment. The first woodlot is approximately 1.45 hectares (3.6 acres) in size and is present east of the farmhouse at 1310 Old Second Line Road. The second woodlot is approximately 4.66 hectares (11.5 acres) in size and is present in the northeastern corner of the Southwest Segment. Historic air photos from 1976 show the presence of mature forest within the areas that are currently occupied by both woodlots (City of Ottawa 2023c). This indicates that the oldest stems within each feature are older than approximately 50 years of age. Both woodlots have similar species composition, with White Cedar being the dominant tree. Most of

the White Cedar stems are between approximately 10 cm and 40 cm dbh in size. However, individual White Cedars up to 80 cm dbh in size are present. Sugar Maple, Ironwood, American Elm, White Ash, Trembling Aspen, Bur Oak, White Pine, and White Spruce between 10 cm and 45 cm dbh in size are well represented. Basswood, Red Oak, Black Cherry and White Birch occur sporadically. Individual White Pines up to 1 m dbh in size are also present. Several Butternut Trees occur within the Dry to Fresh White Cedar – Hardwood Mixed Forest. The shrub cover varies between sparse and moderately dense. Prickly Ash and Domestic Apple are the dominant shrubs throughout the woodlots, although Hawthorn, Common Buckthorn, and Riverbank Grape are present around the edges of both woodlots. The groundcover is sparse and includes Bracken Fern, Wild Sarsaparilla and Prickly Gooseberry. There is a cleared access path and fencing along the southeast border of the woodlot that is present east of the farmhouse at 1310 Old Second Line Road, which separates the feature from Tree Stand F (described below).

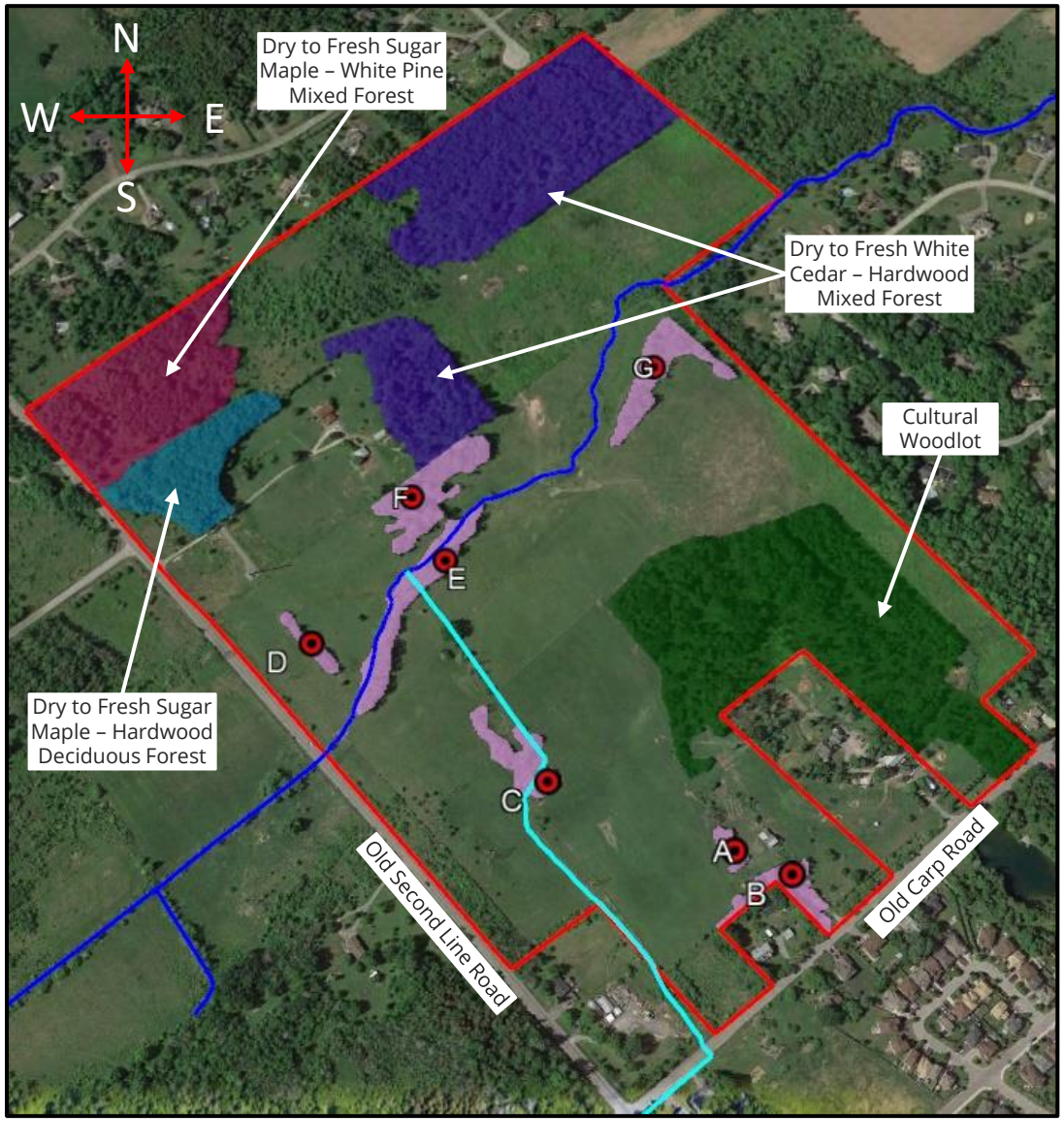
- **Dry to Fresh Sugar Maple – Hardwood Deciduous Forest:** A Dry to Fresh Sugar Maple – Hardwood Deciduous Forest that is approximately 1.14 hectares (2.8 acres) in size is present within the northwestern part of the Southwest Segment. Historic air photos from 1976 show sparse tree growth in the area that is currently occupied by the Dry to Fresh Sugar Maple – Hardwood Deciduous Forest (City of Ottawa 2023c). This suggests that some of the trees within the feature are older than approximately 50 years of age. The forest is dominated by Sugar Maples between 20 cm and 30 cm dbh in size. Black Cherry, Ironwood, American Elm, White Pine, and White Ash are well represented. Trees range in size between approximately 20 cm and 30 cm dbh, with the exception of a few scattered White Pine, which are up to 60 cm dbh in size. Basswood, American Beech, and Red Oak are also present but are less common. The shrub cover includes sparse Prickly Ash and Common Buckthorn. The groundcover is sparse and includes Wild Sarsaparilla, False Solomon's Seal, Wild Leek, and Trout Lily. An unpaved access road is present along the northern edge of the Dry to Fresh Sugar Maple – Hardwood Deciduous Forest, which separates the feature from the forest patch located to the north (described below).
- **Dry to Fresh Sugar Maple – White Pine Mixed Forest:** A Dry to Fresh Sugar Maple – White Pine Mixed Forest that is approximately 2.45 hectares (6.1 acres) in size is present within the northwestern part of the Southwest Segment. Historic air photos from 1976 show that the area which is currently occupied by the Dry to Fresh Sugar Maple – White Pine Mixed Forest was not forested in 1976, although a few mature tree stems are visible (City of Ottawa 2023c). This suggests that the majority of the trees within the feature are less than approximately 50 years of age. The forest is dominated by Sugar Maple with White Pine, American Elm, and Ironwood well represented. White Cedar, Black Cherry, American Beech, and Basswood are also present. The majority of the trees are recent regrowth stems between 10 cm and 20 cm dbh in size. However, older stands with trees up to 40 cm dbh in size are also present, as are individual White Pine

Trees up to approximately 60 cm dbh in size. The understory is dominated by Prickly Ash, Wild Red Raspberry, and Ground Juniper. Trout Lily and Bracken Fern are also present.

- **Tree Stand A:** Tree Stand A includes several Manitoba Maple and American Elm stems up to approximately 40 cm dbh in size.
- **Tree Stand B:** Tree Stand B includes White Ash, American Elm, and Manitoba Maple stems up to approximately 40 cm dbh in size. Several Butternut Trees occur within and around Tree Stand B. The shrub cover includes Domestic Apple and Hawthorn. The groundcover is generally similar to the adjacent Graminoid Meadow (described above in Section 3.2.1).
- **Tree Stand C:** Tree Stand C mostly consists of Domestic Apple and Hawthorn shrubs, as well as young American Elm and White Ash stems. Mature American Elm, Manitoba Maple, and White Ash stems up to approximately 40 cm dbh in size occur sporadically. The groundcover is generally similar to the adjacent Graminoid Meadow (described above in Section 3.2.1).
- **Tree Stand D:** Tree Stand D is a planted row of Norway Spruce up to approximately 30 cm dbh in size.
- **Tree Stand E:** Tree Stand E is a planted row of Crack Willows up to approximately 1 m dbh in size. The Crack Willows were planted by the farmer along the bank of the North Branch (Tributary #3) of Shirley's Brook, in order to provide shade for the elk.
- **Tree Stand F:** Tree Stand F is a remnant forest patch, which has been augmented by plantings. A livestock control fence and cleared maintenance line is present along the northern edge of Tree Stand F. The livestock control fence/maintenance line separates Tree Stand F from the forest that occurs to the north. Tree Stand F predominantly consists of a mixture of hardwood species between 10 cm and 40 cm dbh in size, including Basswood, Sugar Maple, White Birch, Large Tooth Aspen, Bur Oak, American Elm, and Ironwood. The western part of the feature also includes planted White Pine and Norway Spruce. The planted White Pines are up to 60 cm dbh in size. The White Pine and Norway Spruce were planted by the farmer to expand the forest cover. The shrub cover is sparse and predominantly consists of Prickly Ash and Common Buckthorn. The groundcover is sparse due to grazing by the elk.
- **Tree Stand G:** Tree Stand G is dominated by White Ash, which are dead and/or in very poor condition, due to the effects of the Emerald Ash Borer. Sugar Maple, Bur Oak, Basswood, Ironwood, and American Elm are also present. The trees range in size from approximately 10 cm to 30 cm dbh. The groundcover is generally similar to the adjacent Graminoid Meadow (described above in Section 3.2.1).

# FIGURE 8: SOUTHWEST SEGMENT – TREED HABITATS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area




- Study Area
- Watercourse
- Headwaters Drainage Feature
- Tree Stand

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

**Photograph 29**: Looking north at the southern edge of the Cultural Woodlot (August 13th, 2020).

**Photograph 30**: Fragmented forest with extensive deadfall within the central part of the Cultural Woodlot. Note the presence of dead White Ash trees (May 8th, 2023).


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**Photograph 31**: Fragmented forest with extensive deadfall within the western part of the Cultural Woodlot (May 8th, 2023).

**Photograph 32**: Fragmented forest with extensive deadfall within the northern part of the Cultural Woodlot (May 8th, 2023).


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**Photograph 33**: Looking southeast at the northern edge of the Cultural Woodlot. Note the presence of extensive deadfall and the fragmented forest canopy (May 8th, 2023).

**Photograph 34**: The edge of the Dry to Fresh White Cedar – Hardwood Mixed Forest in the north-central part of the Southwest Segment (April 20th, 2023).


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**Photograph 35**: The interior of the Dry to Fresh White Cedar – Hardwood Mixed Forest in the northeastern part of the Southwest Segment (May 8th, 2023).

**Photograph 36**: Looking south at the edge of the Dry to Fresh White Cedar – Hardwood Mixed Forest from Nadia Lane (April 20th, 2023).


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**Photograph 37**: Looking south at the edge of the Dry to Fresh Sugar Maple – Hardwood Deciduous Forest in the northwestern corner of the Southwest Segment (April 20th, 2023).

**Photograph 38**: The interior of the Dry to Fresh Sugar Maple – Hardwood Deciduous Forest in the northwestern corner of the Southwest Segment (May 8th, 2023).


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**Photograph 39**: Looking east at the edge of the Dry to Fresh Sugar Maple – White Pine Mixed Forest in the northwestern corner of the Southwest Segment (April 20th, 2023).

**Photograph 40**: Looking north at Tree Stand B (August 13th, 2020).


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**Photograph 41**: Looking northeast at Tree Stand C (August 13th, 2020).

**Photograph 42**: Looking north at Tree Stand D (May 25th, 2023).


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**Photograph 43**: Looking east at Tree Stand E (May 8th, 2023).

**Photograph 44**: Looking west at Tree Stand F (August 13th, 2020).


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**Photograph 45**: Looking north at Tree Stand G (May 8th, 2023).


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### 3.2.5 Treed Habitats (Northwest)

The treed habitats (e.g. forest, woodlands, hedgerows, and tree stands) that occur within the Northwest Segment are shown below in Figure 9. The treed habitats within the Northwest Segment include the following:

- **Dry to Fresh White Cedar – Hardwood Mixed Forest:** A small patch of Dry to Fresh White Cedar – Hardwood Mixed Forest is present in the southwestern part of the Northwest Segment. The patch of Dry to Fresh White Cedar – Hardwood Mixed Forest is approximately 0.85 hectares (2.1 acres) in size. Historic air photos from 1976 show that the area which is currently occupied by the Dry to Fresh White Cedar – Hardwood Mixed Forest was not forested in 1976 (City of Ottawa 2023c). This suggests that the majority of the trees within the feature are less than approximately 50 years of age. White Cedar stems up to 30 cm diameter at breast height (dbh) in size are the dominant trees. Similar-sized White Ash and American Elm are also present. The Dry to Fresh White Cedar – Hardwood Mixed Forest includes several open patches. The shrub and groundcover is similar to the adjacent Graminoid Meadow (described above in Section 3.2.2).
- **Dry to Fresh White Pine – Hardwood Mixed Forest:** A Dry to Fresh White Pine – Hardwood Mixed Forest is present within the Northwest Segment. The Dry to Fresh White Pine – Hardwood Mixed Forest is approximately 11.7 hectares (28.8 acres) in size. Historic air photos from 1976 show sparse tree growth within the western and northeastern parts of the forest. The majority of the central part of the forest was devoid of tree growth in 1976 (City of Ottawa 2023c). This suggests that while a few older tree stands are present, the majority of the trees within the feature are less than approximately 50 years of age. White Pines between 10 cm and 40 cm dbh in size are the dominant trees. White Pine up to 80 cm dbh in size occur sporadically, particularly in the western part of the forest close to Old Second Line Road and in the northeastern part of the forest. A mixture of hardwood trees between approximately 10 cm and 30 cm dbh in size are co-dominant. The hardwood trees include Sugar Maple, White Ash, American Elm, Basswood, Ironwood, Bur Oak, and Black Cherry. White Spruce and White Cedar are well represented. Trembling Aspen, Honey Locust, and Red Oak occur infrequently. The forest includes a dense shrub layer that is dominated by Common Buckthorn, Prickly Ash, Domestic Apple, and Riverbank Grape. Red Elderberry occurs around the forest edges. The groundcover is sparse and includes Trout Lily, Canada Mayflower, and Bracken Fern.
- **Fresh to Moist White/Green Ash – Elm Deciduous Forest:** A Fresh to Moist White/Green Ash – Elm Deciduous Forest is present within the Northwest Segment. The Fresh to Moist White/Green Ash – Elm Deciduous Forest is approximately 6.51 hectares (16.0 acres) in size. The dominant trees are White/Green Ash and American Elm between approximately 10 cm and 30 cm dbh in size. Similar-sized Red Maple, Trembling Aspen, Sugar Maple, Bur Oak, and Basswood are also

present. Historic air photos from 1976 show that portions of the forest included mature tree growth in 1976 (City of Ottawa 2023c). While portions of the forest included mature tree growth in 1976, at the current time the majority of the mature trees are either dead or in poor condition due to the effects of the Emerald Ash Borer and Dutch Elm Disease. As a result of the effects of the Emerald Ash Borer and Dutch Elm Disease, the feature is dominated by recent regrowth at the current time. The Fresh to Moist White/Green Ash – Elm Deciduous Forest is a highly degraded feature due to the extensive damage to the dominant canopy-forming tree species. Several stands of mature Butternut Trees are present within the Fresh to Moist White/Green Ash – Elm Deciduous Forest. A stand of Black Ash occurs within the northern part of the feature. All of the mature Black Ash Trees within the Black Ash stand have been killed by the Emerald Ash Borer, and the living Black Ash stems that remain in the area are limited to young recent regrowth saplings (<8 cm dbh in size). The shrub layer is very dense throughout the feature due to the many openings that have been created by the die-off of the mature canopy-forming trees. The dominant shrubs are Glossy Buckthorn, Common Buckthorn, Red Osier Dogwood, Skunk Currant and Riverbank Grape. The groundcover includes Poison Ivy, Sensitive Fern, False Solomon's Seal, Wild Sarsaparilla, Virginia Creeper and Common Stinging Nettle.

- **Dry to Fresh White Ash – Elm Deciduous Forest:** A Dry to Fresh White Ash – Elm Deciduous Forest is present within the Northwest Segment. The Dry to Fresh White Ash – Elm Deciduous Forest has drier soil conditions than the adjacent Fresh to Moist White/Green Ash – Elm Deciduous Forest, which leads to different species composition. The Dry to Fresh White Ash – Elm Deciduous Forest is approximately 11.8 hectares (29.2 acres) in size. Historic air photos from 1976 show that the majority of the forest is devoid of tree growth in 1976, with the exception of several hedgerows (City of Ottawa 2023c). This suggests that the majority of the trees within the feature represent recent regrowth and are less than approximately 50 years of age. The dominant trees are White Ash and American Elm between approximately 10 cm and 30 cm dbh in size. Similar-sized Sugar Maple, Bur Oak and Basswood are well represented. Ironwood, Black Cherry, Green Ash and White Cedar occur occasionally. Several stands of mature Butternut Trees up to approximately 50 cm dbh in size are present within the Dry to Fresh White Ash – Elm Deciduous Forest. There is a high concentration of Butternuts in the northern part of the feature. The hedgerows that are visible in the 1976 historic air photos form bands of older trees that are surrounded by the younger recent regrowth forest. The older trees within the historic hedgerows include White Pine, Basswood, Sugar Maple, and Bur Oak that are generally between 40 cm and 60 cm dbh in size, although larger stems up to 80 cm dbh in size are also present. The majority of the canopy-forming trees are either dead or in poor condition due to the effects of the Emerald Ash Borer and Dutch Elm Disease. The Dry to Fresh White Ash – Elm Deciduous Forest is a highly degraded feature due to the extensive damage to the dominant canopy-forming tree species. There has also been disturbance in the eastern part of the feature

associated with the adjacent rural residences (e.g. selective tree clearing, storage of vehicles and debris, etc.). The combination of Emerald Ash Borer/Dutch Elm Disease and the anthropogenic disturbance in the eastern part of the feature has created many openings. The shrub layer is very dense throughout the feature due to the many openings. The shrub layer is dominated by young White Ash, American Elm, and Sugar Maple saplings, as well as Common Buckthorn, Domestic Apple, and Riverbank Grape. The groundcover is moderately dense and includes Downy Yellow Violet, Virginia Creeper, Wild Sarsaparilla, False Solomon's Seal, and Trout Lily.

- **Dry to Fresh White Cedar Coniferous Forest:** An approximately 0.51 hectare (1.27 acre) Dry to Fresh White Cedar Coniferous Forest is present within the eastern part of the Northwest Segment. Historic air photos from 1976 show that the current forested area is devoid of tree growth in 1976 (City of Ottawa 2023c). This suggests that the majority of the trees within the feature represent recent regrowth and are less than approximately 50 years of age. The Dry to Fresh White Cedar Coniferous Forest consists almost entirely of dense White Cedar stems between approximately 10 cm and 40 cm dbh in size. There is very little shrub and/or groundcover growth within the forest due to the density of the White Cedar trees.
- **Dry to Fresh White Pine Coniferous Forest:** An approximately 1.0 hectare (2.5 acre) Dry to Fresh White Pine Coniferous Forest is present within the eastern part of the Northwest Segment (adjacent to March Road). Historic air photos from 1976 show that the current forested area is devoid of tree growth in 1976 (City of Ottawa 2023c). This suggests that the majority of the trees within the feature represent recent regrowth and are less than approximately 50 years of age. The Dry to Fresh White Pine Coniferous Forest is dominated by White Pine trees between 10 cm and 45 cm dbh in size. Sugar Maple, American Elm, and White Cedar stems between 10 cm and 30 cm dbh in size are also present. The understory includes sparse to moderately dense shrub growth that is dominated by Common Buckthorn and deciduous saplings.
- **Dry to Fresh White Pine Coniferous Woodland:** A Dry to Fresh White Pine Coniferous Woodland is present within the eastern part of the Northwest Segment. The Dry to Fresh White Pine Coniferous Woodland is dominated by recent regrowth White Pine stems that have not matured sufficiently to form a closed canopy. The White Pine are up to 25 cm dbh in size. The shrub cover varies between relatively open and densely overgrown conditions. The dominant shrubs are Hawthorn, Common Buckthorn, and Ground Juniper. The groundcover is dominated by Canada Goldenrod and is similar to the adjacent Canada Goldenrod - Forb Meadow (described above in Section 3.2.2).
- **Deciduous Hedgerow:** Deciduous Hedgerows are present between the Graminoid Meadow patches in the northern part of the Northwest Segment. The Deciduous Hedgerows extend along the northern property boundary in some areas. The Deciduous Hedgerows include a mixture of mature deciduous trees including Manitoba Maple, Sugar Maple, Bur Oak, Basswood, Trembling Aspen, White Ash, and American Elm. Several Butternut Trees are present within the Deciduous

Hedgerows. Most trees are between 10 cm and 30 cm dbh in size, although larger stems up to 60 cm dbh in size occur occasionally. The Deciduous Hedgerows include a dense shrub layer in most areas. The dominant shrubs are Tartarian Honeysuckle, Common Buckthorn, and Domestic Apple. Hawthorn and Riverbank Grape are also present. The groundcover is similar to the adjacent Graminoid Meadow (described above in Section 3.2.2).

- **Tree Stand H:** Tree Stand H is a stand of White Pine trees up to 40 cm dbh in size. The groundcover is generally similar to the adjacent Graminoid Meadow (described above in Section 3.2.2).
- **Tree Stand I:** Tree Stand I is a stand of White Cedar trees up to 30 cm dbh in size. The groundcover is generally similar to the adjacent Graminoid Meadow (described above in Section 3.2.2).
- **Tree Stand J & Tree Stand K:** Tree Stand J and Tree Stand K have very similar species composition. Both tree stands are dominated by recent regrowth American Elm and White Pine stems that are <20 cm dbh in size. Similar-sized White Ash, White Spruce, and Bur Oak occur within each tree stand. The tree stands include dense patches of Common Buckthorn and Red Osier Dogwood shrubs. Domestic Apple shrubs are also present. The groundcover is dominated by Canada Goldenrod.
- **Tree Stand L:** Tree Stand L includes two (2) large Bur Oaks that are >1 m dbh in size. Younger Bur Oak, Sugar Maple, American Elm, and Basswood stems up to 35 cm dbh in size occur around the two (2) large Bur Oaks. The shrub cover is sparse to moderately dense and is dominated by Common Buckthorn. The groundcover is sparse and includes Trout Lily.


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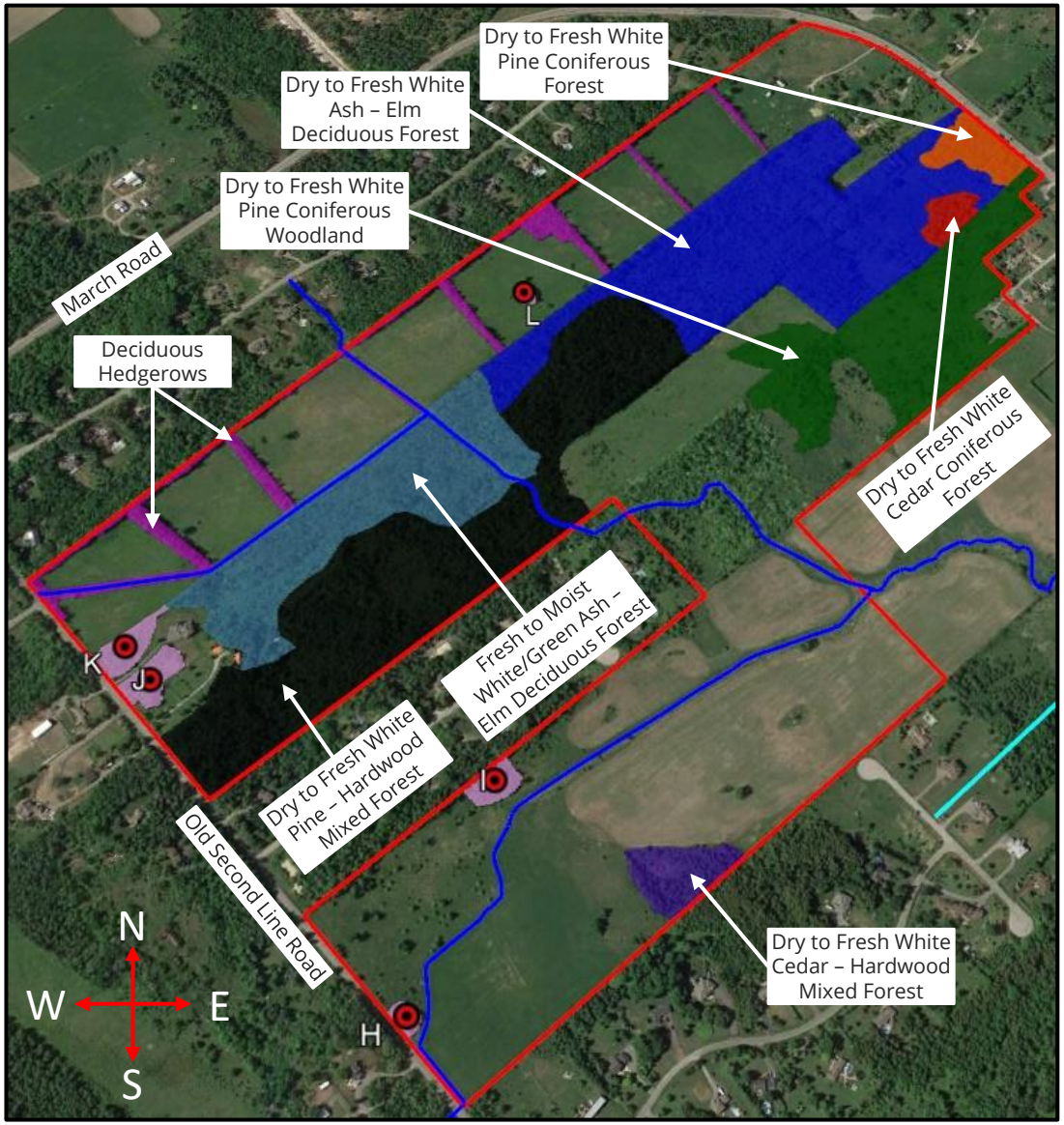
# FIGURE 9: NORTHWEST SEGMENT – TREED HABITATS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area




- Study Area
- Watercourse
- Headwaters Drainage Feature
- Tree Stand

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

**Photograph 46**: Looking west at the edge of the Dry to Fresh White Cedar – Hardwood Mixed Forest in the southwestern part of the Northwest Segment (June 1st, 2023).

**Photograph 47**: Looking east at the edge of the Dry to Fresh White Pine – Hardwood Mixed Forest in the northwestern part of the Northwest Segment (April 20th, 2023).


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**Photograph 48**: The interior of the Dry to Fresh White Pine – Hardwood Mixed Forest in the northwestern part of the Northwest Segment (April 20th, 2023).

**Photograph 49**: Looking east at the edge of the Fresh to Moist White/Green Ash – Elm Deciduous Forest in the northwestern part of the Northwest Segment. Note the presence of dead Ash and Elm stems (June 1st, 2023).


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**Photograph 50**: Looking south at the edge of the Fresh to Moist White/Green Ash – Elm Deciduous Forest in the northwestern part of the Northwest Segment. Note the presence of dead Ash and Elm stems (June 14th, 2023).

**Photograph 51**: The interior of the Fresh to Moist White/Green Ash – Elm Deciduous Forest in the northwestern part of the Northwest Segment (April 20th, 2023).


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**Photograph 52**: The interior of the Fresh to Moist White/Green Ash – Elm Deciduous Forest in the northwestern part of the Northwest Segment (June 1st, 2023).

**Photograph 53**: Looking south at the edge of the Dry to Fresh White Ash – Elm Deciduous Forest in the northeastern part of the Northwest Segment. Note the presence of dead Ash and Elm stems (May 25th, 2023).


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**Photograph 54**: Looking northwest at the edge of the Dry to Fresh White Pine Coniferous Forest (April 26th, 2023).

**Photograph 55**: The Dry to Fresh White Pine Coniferous Woodland in the eastern part of the Northwest Segment (April 20th, 2023).


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**Photograph 56**: Looking northeast at a Deciduous Hedgerow in the northern part of the Northwest Segment (May 8th, 2023).

**Photograph 57**: Looking west at Tree Stand H (April 20th, 2023).


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**Photograph 58**: Looking west at Tree Stand I (April 20th, 2023).

**Photograph 59**: Looking east at Tree Stand J (April 26th, 2023).


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**Photograph 60**: Looking east at Tree Stand K (April 26th, 2023).

**Photograph 61**: Looking northeast at Tree Stand L (May 25th, 2023).


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### 3.2.6 Treed Habitats (Northeast)

The treed habitats (e.g. forest, woodlands, hedgerows, and tree stands) that occur within the Northeast Segment are shown below in Figure 10. The treed habitats within the Northeast Segment include the following:

- **Dry to Fresh Sugar Maple – White Pine Mixed Forest:** A Dry to Fresh Sugar Maple – White Pine Mixed Forest is present within the Northeast Segment. The Dry to Fresh Sugar Maple – White Pine Mixed Forest is approximately 13.1 hectares (32.4 acres) in size. Historic air photos from 1965 show two (2) tree stands immediately east of the property at 630 Cameron Harvey Drive and a stand of trees in the northeastern corner of the Northeast Segment (within the 580 Cameron Harvey Drive parcel) (City of Ottawa 2023c). Each of the historic tree stands is ≤0.5 hectares in size. The majority of the remainder of the current forested area was devoid of mature tree growth in 1965 (City of Ottawa 2023c). This suggests that while there are trees that are older than approximately 60 years of age within the three (3) historic tree stands, the majority of the trees throughout the remainder of the current forested area are less than approximately 60 years of age. Within the three (3) historic tree stands, there are individual Sugar Maples >1 m diameter at breast height (dbh) in size and White Pines up to 80 cm dbh in size. Sugar Maples between 10 cm and 50 cm dbh in size are the dominant trees throughout the majority of the forested area. Similar-sized White Pine are co-dominant in many areas. The co-dominant trees in some stands include a mixture of similar-sized hardwood stems (e.g. White Birch, Trembling Aspen, Ironwood, White Ash, and American Elm). Similar-sized Bur Oak, Black Cherry, Green Ash, Red Maple, and White Spruce are present but occur less frequently. There are also several stands of White Cedar in the northern part of the forest. Several Butternut Trees were observed within the Dry to Fresh Sugar Maple – White Pine Mixed Forest. The shrub layer is moderately dense and is dominated by young deciduous saplings and Common Buckthorn. Prickly Gooseberry and Riverbank Grape are also present. The groundcover includes Wild Sarsaparilla, False Solomon's Seal, Trout Lily, Canada Violet, Canada Mayflower, White Trillium, Sensitive Fern, Ostrich Fern and Bracken Fern.
- **Dry to Fresh White Pine Coniferous Forest:** There are two (2) patches of Dry to Fresh White Pine Coniferous Forest in the Northeast Segment. The northwestern patch is approximately 3.68 hectares (9.1 acres) in size, whereas the southeastern patch is approximately 2.59 hectares (6.4 acres) in size. Historic air photos from 1976 show that the current forested area does not include any forest growth in 1976 (City of Ottawa 2023c). This suggests that the majority of the trees within the Dry to Fresh White Pine Coniferous Forest patches are less than approximately 50 years of age. The Dry to Fresh White Pine Coniferous Forest patches are dominated by planted White Pine trees that are between 10 cm and 40 cm dbh in size (approximately 90% of stems). Regrowth Sugar Maple, Manitoba Maple, American Elm, and White Ash stems up to 20 cm dbh in

size occur within the forest and around the forest edges. The shrub layer includes sparse Common Buckthorn shrubs and deciduous saplings. There is very little groundcover within the Dry to Fresh White Pine Coniferous Forest patches.

- **Dry to Fresh White Ash – Hardwood Deciduous Forest:** A Dry to Fresh White Ash – Hardwood Deciduous Forest is present within the southeastern part of the Northeast Segment. The Dry to Fresh White Ash – Hardwood Deciduous Forest is approximately 14.4 hectares (35.5 acres) in size. Historic air photos from 1965 show small stands of trees in the southeastern corner of the forest, however, the majority of the current forested area was devoid of tree cover in 1965 (City of Ottawa 2023c). This suggests that the vast majority of the trees within the current forested area are younger than approximately 60 years of age. White Ash between 10 cm and 30 cm dbh in size are dominant throughout the forested area. A mixture of similar-sized American Elm, Sugar Maple, and Trembling Aspen stems are co-dominant. Large Tooth Aspen, Green Ash, White Pine, White Spruce, Bur Oak, White Cedar and Basswood are well represented. Manitoba Maple stems are also present around the forest edges and in heavily disturbed areas. The majority of the trees are 10 cm to 30 cm dbh in size, although isolated White Pine up to 60 cm dbh in size are also present. There is a stand of planted Red Pine and several stands of planted White Spruce within the Dry to Fresh White Ash – Hardwood Deciduous Forest. The planted coniferous stands are described below (Refer to Tree Stand O and Tree Stand Q). Butternut Trees occur frequently throughout the Dry to Fresh White Ash – Hardwood Deciduous Forest. The density of Butternut Trees is very high in some areas. The Dry to Fresh White Ash – Hardwood Deciduous Forest has been extensively degraded by the effects of the Emerald Ash Borer, Dutch Elm Disease, and the Butternut Canker, which in combination have significantly damaged (and killed) many of the canopy-forming tree species. A network of trails and dirt bike paths has been constructed throughout the forest in order to provide access to the dirt bike track within the Cultural Meadow (described above in Section 3.2.3). Many openings have been created by the degradation of the mature canopy-forming trees and the recreational usage of the forest, creating a highly disturbed forest community that is punctuated by several regrowth thicket and woodland patches. The shrub layer is dense in most areas and is dominated by young deciduous stems, Common Buckthorn, Tartarian Honeysuckle, Riverbank Grape and Wild Red Raspberry. Prickly Gooseberry, Skunk Currant, Purple Flowering Raspberry, Alternate Leaved Dogwood, and Domestic Apple are also present. The groundcover in open areas is dominated by Canada Goldenrod, whereas Wild Sarsaparilla, False Solomon's Seal, Canada Mayflower, Sensitive Fern, Jack in the Pulpit and Trout Lily are present in areas with a closed canopy. In some areas the groundcover includes dense patches of invasive Garlic Mustard.
- **Dry to Fresh White Ash – Aspen Deciduous Woodland:** A Dry to Fresh White Ash – Aspen Deciduous Woodland is present within the northeastern part of the Northeast Segment. The Dry to Fresh White Ash – Aspen Deciduous Woodland is a recent regrowth community that is


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dominated by young White Ash and Trembling Aspen stems that are up to 20 cm dbh in size. Similar-sized Sugar Maple, American Elm, Bur Oak, White Birch, and White Pine are also present. The shrub cover varies between relatively open and densely overgrown conditions. The shrub layer is dominated by deciduous saplings, Common Buckthorn, Wild Red Raspberry, and Red Osier Dogwood. The groundcover in open areas is dominated by Canada Goldenrod.

- **Dry to Fresh Trembling Aspen – White Pine Mixed Woodland:** A Dry to Fresh Trembling Aspen – White Pine Mixed Woodland is present within the central part of the Northeast Segment. The Dry to Fresh Trembling Aspen – White Pine Mixed Woodland is a recent regrowth community that is dominated by young Trembling Aspen and White Pine stems that are up to 20 cm dbh in size. Similar-sized White Birch, White Cedar, Sugar Maple, American Elm, Manitoba Maple, and White Ash are also present. A row of mature Butternut Trees was observed within a historic hedgerow that runs along the southern edge of the woodland. The shrub cover varies between relatively open and densely overgrown conditions. The shrub layer is dominated by Wild Red Raspberry and Red Osier Dogwood. Common Buckthorn and Slender Willow are also present. The groundcover is dominated by dense stands of Canada Goldenrod.
- **Deciduous Hedgerow:** A Deciduous Hedgerow is present at the edge of the Northeast Segment between the Graminoid Meadow and the adjacent Former Beachburg Railway Corridor. The Deciduous Hedgerow mostly consists of dead White Ash stems and dense stands of Common Buckthorn shrubs. There are also several young Sugar Maple, Bur Oak, Trembling Aspen, and American Elm stems (up to 30 cm dbh in size). The groundcover is similar to the adjacent Graminoid Meadow (described above in Section 3.2.3).
- **Tree Stand M:** Tree Stand M is a stand of White Pine trees up to 45 cm dbh in size. Several recent regrowth White Ash stems are also present. The shrub cover surrounding the tree stand is moderately dense and includes Common Buckthorn, Domestic Apple, and Tartarian Honeysuckle. The groundcover is generally similar to the adjacent Cultural Meadow (described above in Section 3.2.3).
- **Tree Stand N:** Tree Stand N is an overgrown stand of Manitoba Maple, White Ash, and American Elm trees up to 30 cm dbh in size. The tree stand is heavily overgrown with shrubs including Wild Red Raspberry, Red Osier Dogwood, and Domestic Apple. The groundcover is generally similar to the adjacent Cultural Meadow (described above in Section 3.2.3).
- **Tree Stand O:** Tree Stand O is a stand of planted Red Pine trees up to 35 cm dbh in size. Tree Stand O occurs within the Dry to Fresh White Ash – Hardwood Deciduous Forest (described above). There is very little shrub and/or groundcover growth due to the density of the planted Red Pines.
- **Tree Stand P:** Tree Stand P is a stand of planted White Spruce and White Pine trees up to 30 cm dbh in size. There is very little shrub and/or groundcover growth due to the density of the planted coniferous trees.

- **Tree Stand Q:** Tree Stand Q includes three (3) stands of planted White Spruce up to 35 cm dbh in size. Tree Stand Q occurs within the Dry to Fresh White Ash – Hardwood Deciduous Forest (described above). There is very little shrub and/or groundcover growth due to the density of the planted White Spruce.


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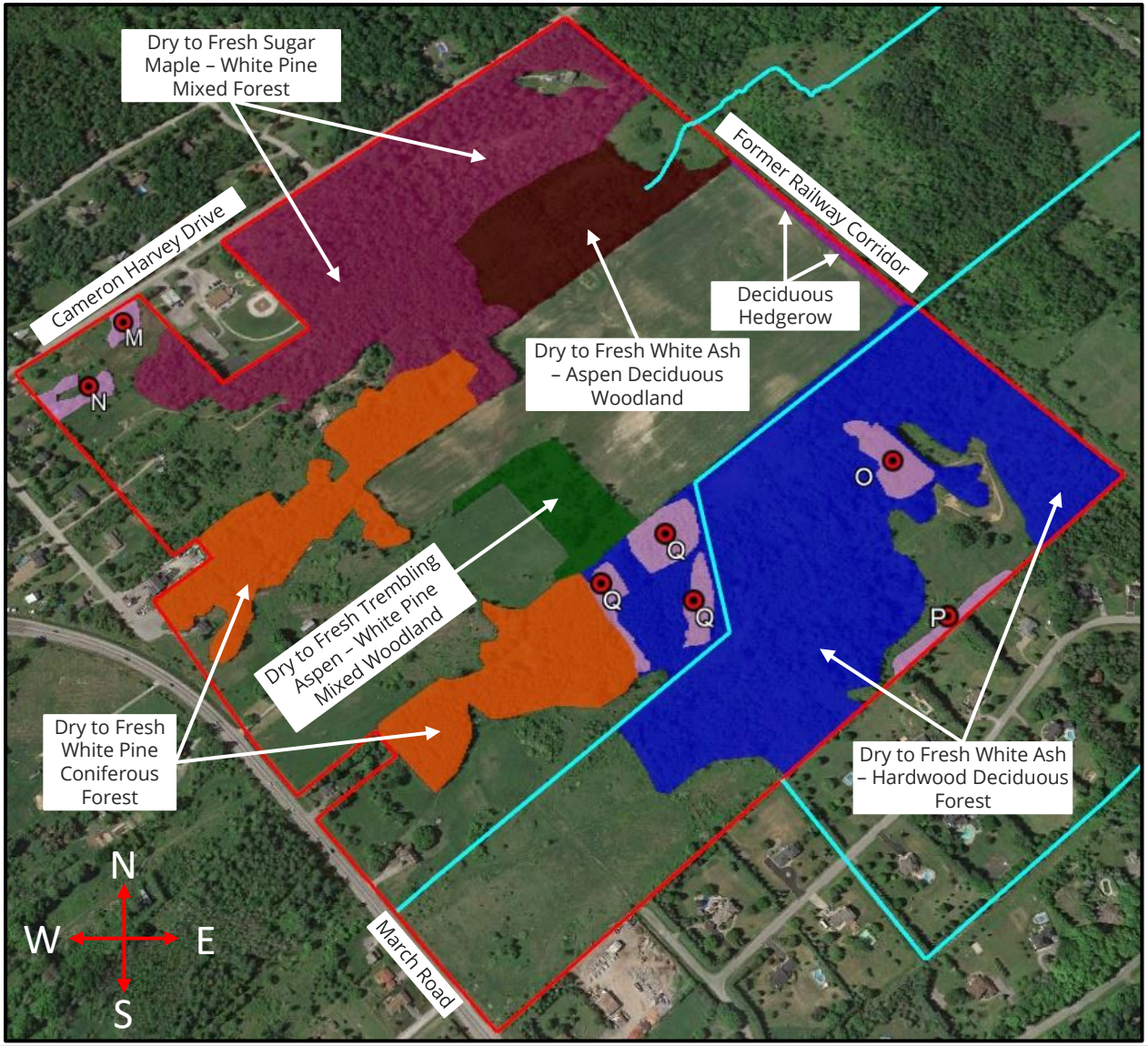
# FIGURE 10: NORTHEAST SEGMENT – TREED HABITATS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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- Study Area - Watercourse - Headwaters Drainage Feature A - Tree Stand

Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

**Photograph 62**: Looking southeast from Cameron Harvey Drive at the edge of the Dry to Fresh Sugar Maple – White Pine Mixed Forest (April 27th, 2023).

**Photograph 63**: The interior of the Dry to Fresh Sugar Maple – White Pine Mixed Forest (May 24th, 2023).


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**Photograph 64**: Looking southeast at the southeastern patch of Dry to Fresh White Pine Coniferous Forest (April 27th, 2023).

**Photograph 65**: The interior of the southeastern patch of Dry to Fresh White Pine Coniferous Forest (April 27th, 2023).

**Photograph 66**: Looking southeast at the edge of the Dry to Fresh White Ash – Hardwood Deciduous Forest (May 10th, 2023).

**Photograph 67**: The interior of the Dry to Fresh White Ash – Hardwood Deciduous Forest (May 10th, 2023).


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**Photograph 68**: The interior of the Dry to Fresh White Ash – Hardwood Deciduous Forest (May 24th, 2023).

**Photograph 69**: A dense stand of invasive Garlic Mustard within the Dry to Fresh White Ash – Hardwood Deciduous Forest (May 24th, 2023).


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**Photograph 70**: Looking west at the Dry to Fresh White Ash – Aspen Deciduous Woodland (April 27th, 2023).

**Photograph 71**: Looking north at the Dry to Fresh White Ash – Aspen Deciduous Woodland (May 31st, 2023).


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**Photograph 72**: Looking west at the Dry to Fresh Trembling Aspen – White Pine Mixed Woodland (May 10th, 2023).

**Photograph 73**: Looking southeast at the Deciduous Hedgerow (April 27th, 2023).


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**Photograph 74**: Looking south at Tree Stand M (April 27th, 2023).

**Photograph 75**: Looking west at Tree Stand N (April 27th, 2023).


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**Photograph 76**: Looking west at Tree Stand O (April 27th, 2023).

**Photograph 77**: Looking southwest at Tree Stand P (April 27th, 2023).


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**Photograph 78**: Looking north at Tree Stand Q (May 24th, 2023).


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## 3.3 Significant Woodlot Assessment

The City of Ottawa *Significant Woodlands: Guidelines for Identification, Evaluation, and Impact Assessment* provide an outline of the Significant Woodlot assessment process for potential urban expansion areas (City of Ottawa 2022b). The City of Ottawa (2022b) guidelines state that the identification and evaluation of Significant Woodlots within potential urban expansion areas should be completed using the same assessment criteria that apply within the existing urban area. The City of Ottawa guidelines define Significant Woodlots in the urban area as any forest and/or woodland area ≥0.8 hectares in size supporting forest and/or woodland 60 years of age or older at the time of evaluation (City of Ottawa 2022b). In addition, Section 6.4.3 of the City of Ottawa (2022b) guidelines states that the Significant Woodlot assessment process for potential urban expansion areas should take into account the condition of the woodlots in their existing state as well as the ecological functions and ecosystem services that are provided by the woodlots.

The size and age criteria are discussed below in Section 3.3.1. The condition of each forest and/or woodland area that is ≥0.8 hectares in size supporting forest and/or woodland 60 years of age or older is also discussed below in Section 3.3.1. Ecosystem services and the *Natural Heritage Reference Manual* (OMNRF 2010) Significant Woodlot criteria are discussed below in Section 3.3.2. Recommendations for tree retention have been identified through the analysis outlined below in Section 3.3.1 and Section 3.3.2.

The City of Ottawa guidelines state that the proposed removal/retention of Significant Woodlots within potential urban expansion areas should be evaluated under alternative development concepts as part of the planning process (City of Ottawa 2022b). The evaluation of alternative development concepts will be completed as part of the future urban expansion area design and approval process (e.g. the City of Ottawa Annex 4 – Secondary Plan Process), which will include the development of the South March Urban Expansion Area (SMUEA) Community Design Plan (CDP) and Environmental Management Plan (EMP). The recommendations for tree retention that have been identified through the analysis in Section 3.3.1 and Section 3.3.2 have been summarized below in Section 4.1. The recommendations for tree retention are intended to be further refined and confirmed during the future development of the SMUEA CDP and EMP (e.g. during the future Secondary Plan Process).


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### 3.3.1 Significant Woodlot Assessment – Woodlot Sizes, Ages & Condition

The woodlot size and age analysis is shown below in Figure 11, Figure 12, and Figure 13. There are several woodlots present within each segment of the Study Area. The 2024 woodlot boundaries that are shown below have been mapped by merging the contiguous forest and woodland areas that are described and mapped as distinct vegetation communities in Figure 8, Figure 9, and Figure 10 (Refer to Section 3.2.4, Section 3.2.5, and Section 3.2.6).

The available historic air photos that most closely match the 60 year age criteria were used below to estimate the woodlot ages (City of Ottawa 2023c). Historic air photos from 1976 have been overlain to estimate the woodlot ages for the Southwest Segment and the Northwest Segment. The historic air photo analysis for the Southwest Segment and the Northwest Segment identifies the portions of the 2024 woodlots that were present in 1976, indicating that those forest/woodland patches are a minimum of 48 years of age in 2024. A historic air photo from 1965 has been overlain to estimate the woodlot ages for the Northeast Segment. The historic air photo analysis for the Northeast Segment identifies the portions of the 2024 woodlots that were present in 1965, indicating that those forest/woodland patches are a minimum of 59 years of age in 2024. The woodlot age analysis should be considered conservative compared to the City of Ottawa 60 year age criteria, as the historic air photos that were used are younger than 60 years of age.

The portions of the 2024 woodlots that were shown to be ≥0.8 hectares in size in the historic air photos have been labelled as Woodlot A through Woodlot G in Figure 11, Figure 12, and Figure 13. The results of the woodlot size and age analysis and the condition of each qualifying woodlot are summarized below:

**Southwest Segment**

- **Woodlot A:** Woodlot A was approximately 4.8 hectares in size in 1976. Woodlot A is the Cultural Woodlot within the Kanata Elk Ranch Lands. As described above in Section 3.2.4, the Cultural Woodlot is a highly disturbed forest community. The feature is fragmented by an interconnected system of livestock fences and access paths, which create many forest openings. There is extensive deadfall throughout the Cultural Woodlot due to the effects of the Emerald Ash Borer (e.g. the death of the large White Ash trees), selective tree clearing, and windthrow damage. The extensive deadfall throughout the forest has also created many openings and disturbed forest patches. The Cultural Woodlot can be characterized as a highly fragmented and disturbed forest community and therefore it should not be considered a priority for tree retention.
- **Woodlot B:** Woodlot B was approximately 0.9 hectares in size in 1976. Woodlot B is a Dry to Fresh White Cedar – Hardwood Mixed Forest. As described above in Section 3.2.4, the Dry to


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Fresh White Cedar – Hardwood Mixed Forest is a comparatively healthy forest and therefore Woodlot B should be considered a candidate for tree retention.

- **Woodlot C:** Woodlot C was approximately 2.4 hectares in size in 1976. Woodlot C is a Dry to Fresh White Cedar – Hardwood Mixed Forest. As described above in Section 3.2.4, the Dry to Fresh White Cedar – Hardwood Mixed Forest is a comparatively healthy forest and therefore Woodlot C should be considered a candidate for tree retention.

**Northwest Segment**

- **Woodlot D:** Woodlot D was approximately 1.6 hectares in size in 1976. Woodlot D includes a portion of the Dry to Fresh White Pine – Hardwood Mixed Forest. As described above in Section 3.2.5, the Dry to Fresh White Pine – Hardwood Mixed Forest is a comparatively healthy forest and therefore Woodlot D should be considered a candidate for tree retention.
- **Woodlot E:** Woodlot E was approximately 4.4 hectares in size in 1976. Woodlot E includes portions of the Fresh to Moist White/Green Ash – Elm Deciduous Forest and the similar Dry to Fresh White Ash – Elm Deciduous Forest. As described above in Section 3.2.5, the majority of the mature trees in both forest communities are either dead or in poor condition due to the effects of the Emerald Ash Borer and Dutch Elm Disease. As a result of the effects of the Emerald Ash Borer and Dutch Elm Disease, both forest communities are dominated by recent regrowth. Both forest communities can be considered highly degraded features due to the extensive damage to the dominant canopy-forming tree species, and therefore Woodlot E should not be considered a priority for tree retention.
- **Woodlot F:** Woodlot F was approximately 1.3 hectares in size in 1976. Woodlot F includes a portion of the Dry to Fresh White Pine – Hardwood Mixed Forest. As described above in Section 3.2.5, the Dry to Fresh White Pine – Hardwood Mixed Forest is a comparatively healthy forest and therefore Woodlot F should be considered a candidate for tree retention.

**Northeast Segment**

- **Woodlot G:** Woodlot G includes two (2) adjacent forest stands that were each approximately 0.4 hectares in size in 1965 (approximately 0.8 hectares in total size). Woodlot G includes a portion of the Dry to Fresh Sugar Maple – White Pine Mixed Forest. As described above in Section 3.2.6, the Dry to Fresh Sugar Maple – White Pine Mixed Forest is a comparatively healthy forest and therefore Woodlot G should be considered a candidate for tree retention.

Additional tree retention recommendations have been identified through the analysis in the following section. The recommendations for tree retention are summarized below in Section 4.1.

# FIGURE 11: SOUTHWEST SEGMENT – SIGNIFICANT WOODLOT ANALYSIS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area


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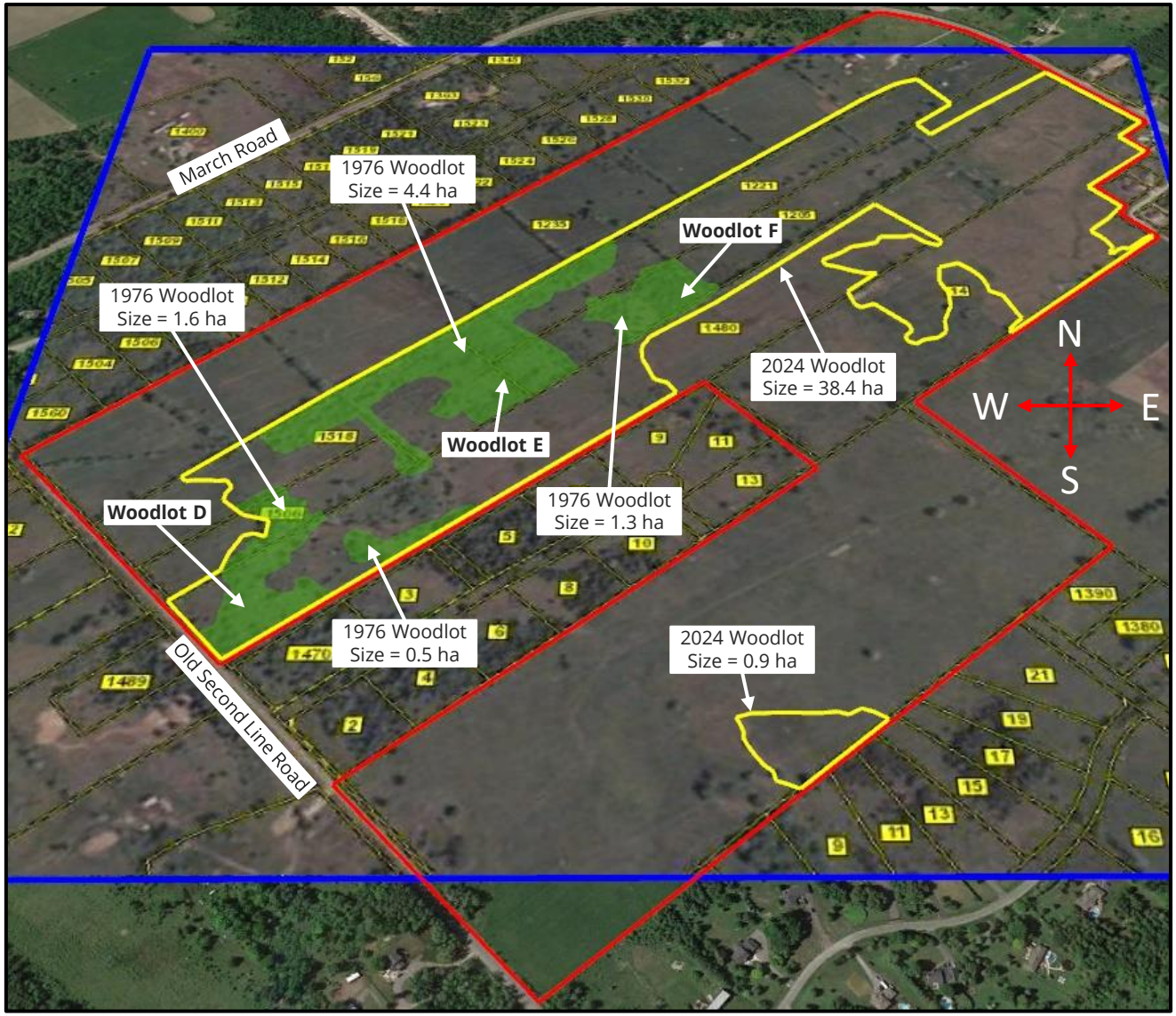
Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate. Historic air photo taken from Geo-Ottawa (City of Ottawa 2023c). Historic areas of contiguous tree cover that overlap with the 2024 Forest/Woodland Limits are highlighted in the historic air photo.

- Study Area - 2024 Forest/Woodland Limits - 1976 Forest/Woodland - Historic Air Photo Limits

October 2024

# FIGURE 12: NORTHWEST SEGMENT – SIGNIFICANT WOODLOT ANALYSIS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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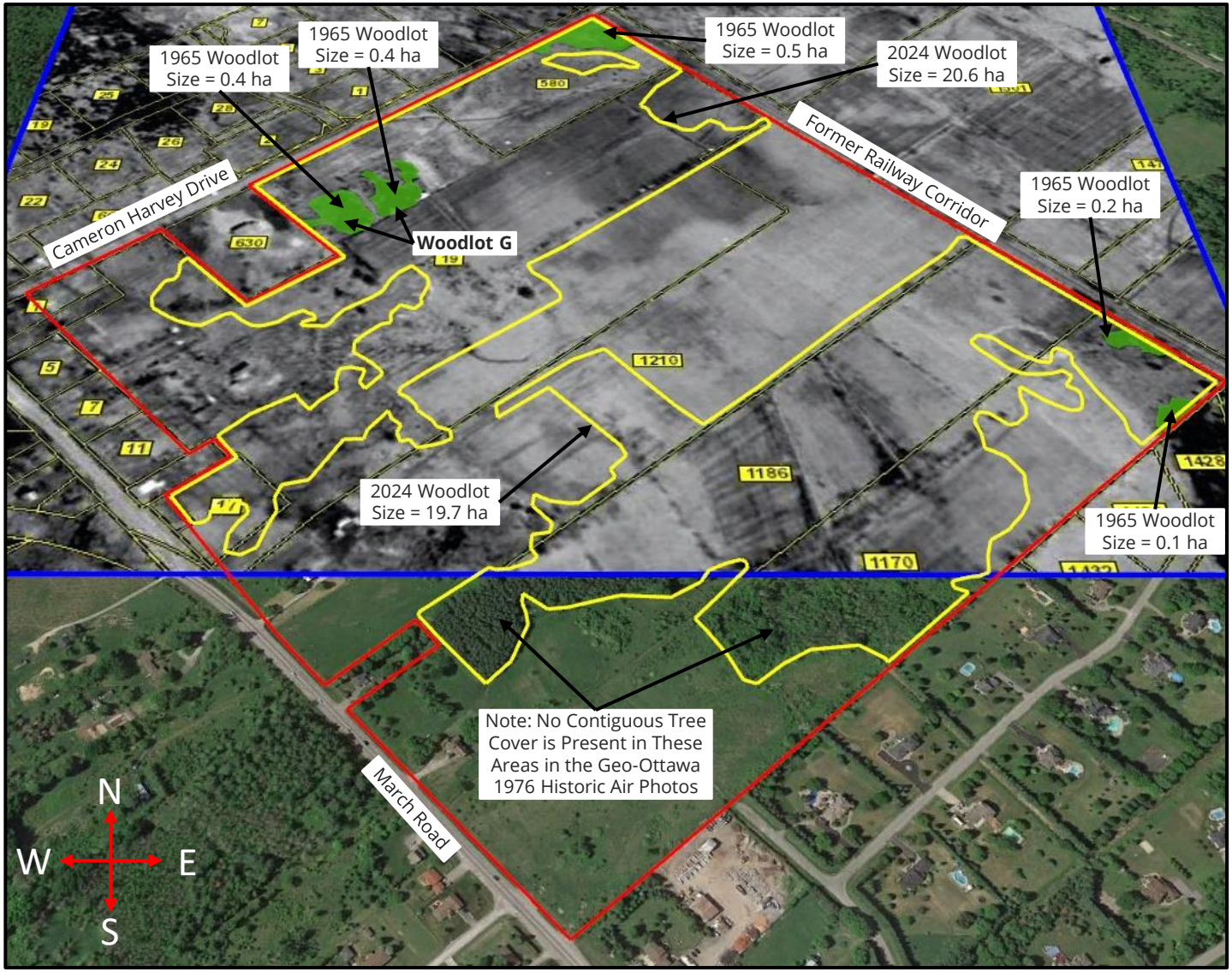
Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate. Historic air photo taken from Geo-Ottawa (City of Ottawa 2023c). Historic areas of contiguous tree cover that overlap with the 2024 Forest/Woodland Limits are highlighted in the historic air photo.

October 2024

- Study Area
- 2024 Forest/Woodland Limits
- 1976 Forest/Woodland
- Historic Air Photo Limits

# FIGURE 13: NORTHEAST SEGMENT – SIGNIFICANT WOODLOT ANALYSIS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate. Historic air photo taken from Geo-Ottawa (City of Ottawa 2023c). Historic areas of contiguous tree cover that overlap with the 2024 Forest/Woodland Limits are highlighted in the historic air photo.

- Study Area - 2024 Forest/Woodland Limits - 1965 Forest/Woodland - Historic Air Photo Limits

October 2024

### 3.3.2 Significant Woodlot Assessment – NHRM Criteria & Ecosystem Services

Section 6.4.3 of the City of Ottawa (2022b) Significant Woodlot guidelines states that the Significant Woodlot assessment process for potential urban expansion areas should take into account the condition of the woodlots in their existing state (discussed above) as well as the ecological functions and ecosystem services that are provided by the woodlots. The Ontario Ministry of Natural Resources and Forestry (OMNRF) *Natural Heritage Reference Manual* (NHRM) Significant Woodlot criteria are discussed below in order to assess the ecological functions and ecosystem services that are provided by the woodlots within the Study Area (OMNRF 2010). The NHRM criteria address the same natural heritage values that are described as ecosystem services in the City of Ottawa Significant Woodlot guidelines (e.g. water protection, social value, biodiversity, etc.) (City of Ottawa 2022b). The list of ecosystem services discussed in the City of Ottawa guidelines includes urban air quality, which is not addressed in the NHRM criteria (City of Ottawa 2022b). A heading discussing urban air quality has been added following the NHRM criteria:

- **Woodland Size Criteria** – The City of Ottawa's Significant Woodlot size and age criteria for the urban area are discussed above in the previous section. The City of Ottawa's Significant Woodlot size and age criteria for the urban area were developed to support land use planning within the City of Ottawa and therefore they should take precedence over the more permissive NHRM Woodland Size Criteria.
- **Interior Forest Habitat** – Forested areas that are ≥100 m from an opening that is ≥20 m in size are considered interior forest habitat. Although there are comparatively large forest patches within the Study Area, in each case the forest communities are surrounded by existing development, roads, and/or open habitats on all sides (Refer to Figure 8, Figure 9, and Figure 10). Forest patches that are surrounded by existing development, roads, and/or open habitats must generally be a minimum of 200 m wide in order to contain habitat at their interior that is ≥100 m from an opening (e.g. when openings occur on all sides). None of the forest patches in the Southwest Segment and the Northeast Segment are ≥200 m wide. The western part of the forest in the Northwest Segment is approximately 260 m wide, whereas the remainder of the forest within the Northwest Segment is <200 m wide. While a small portion of the western part of the forest in the Northwest Segment qualifies as interior forest habitat, the portion of the forest that is >100 m from an opening is likely too small to provide any significant interior forest habitat functions. As such, the forest throughout the Study Area is unlikely to provide any significant interior forest habitat functions.
- **Proximity to Other Woodlands/Habitats** – Woodlots within 30 m of another significant feature meet this criteria. The potential presence of designated natural heritage features within the Study Area is discussed in detail in Section 3.5. For brevity, the analysis in Section 3.5 has not been reiterated in detail in this section. In short, there are watercourses (Refer to Section 3.4),

Significant Wildlife Habitat (SWH) (Refer to Section 3.6) and Species at Risk (SAR) habitat (Refer to Section 3.7) overlapping the woodlots and/or within 30 m of the woodlots in various locations throughout the Study Area. Tree retention and mitigation recommendations that address the significant features and functions of the woodlots as they relate to other designated natural heritage features are described below in Section 4.2 (Watercourses), Section 4.3 (SWH), and Section 4.4 (SAR).

- **Water Protection** – As described below in Section 3.4.2, the North Tributary (Tributary #2) – Reach B passes through the forest communities in the Northwest Segment. The Northeast Swale (a Headwaters Drainage Feature (HDF)) passes through the forest communities in the Northeast Segment (Refer to Section 3.4.3). Tree retention and mitigation recommendations that address the significant features and functions of the woodlots as they relate to the watercourses and the HDFs are described below in Section 4.2. As described below in Section 4.2, it is recommended that the watercourses should be retained and/or enhanced within designated watercourse corridors. It is also recommended that existing trees and shrubs should be retained within the watercourse corridors wherever feasible and compatible with the future development requirements. Refer to Section 4.2 for additional details.
- **Linkages** – The linkage functions that are provided by the Study Area are discussed below in Section 3.8. As described below in Section 3.8, *Schedule C11-A – Natural Heritage System (West)* of the City of Ottawa's New Official Plan does not identify any part of the Study Area as a Natural Heritage System Linkage Area (City of Ottawa 2022a). As such, the Study Area was not identified as a significant wildlife movement corridor and/or as a significant linkage area during the analysis that was undertaken to support the development of the City of Ottawa's New Official Plan and its associated Natural Heritage System Mapping (City of Ottawa 2022a; City of Ottawa 2023a). As summarized below in Section 3.5, the Study Area does not include any of the designated natural heritage features listed in the *Residential Growth Management Strategy for the New Official Plan* (City of Ottawa 2020). Specifically, no regulated wetlands, Provincially Significant Wetlands, Natural Environment Areas, Natural Heritage System Core Areas, and/or Natural Heritage System Linkage Areas are shown to occur within the South March Urban Expansion Area (SMUEA), per *Schedule C11-A – Natural Heritage System (West)* of the City of Ottawa's New Official Plan (City of Ottawa 2022a). It is identified in Section 3.8 that the watercourses that flow through the Study Area may provide a significant wildlife movement corridor and/or linkage function. As described below in Section 4.2, it is recommended that the watercourses within the Study Area should be retained and/or enhanced within designated watercourse corridors. The retained and/or enhanced watercourse corridors will preserve the wildlife movement and linkage functions that are currently provided by the watercourses. Refer to Section 3.8 and Section 4.2 for additional details.

- **Woodlot Diversity** – The plant species composition of the forest and woodland communities is described above in Section 3.2.4, Section 3.2.5, and Section 3.2.6. None of the forest and woodland communities within the Study Area have exceptional plant diversity and no regionally rare forest plant species were observed.
- **Uncommon Characteristics** – Uncommon forest types, environmental features, or plant communities may contribute to woodlot significance. Forest stands older than 100 years of age are also considered significant. The woodlot ages are discussed above in the previous section. The historic air photo analysis described in the previous section suggests that none of the forest and/or woodland communities within the Study Area are likely to be older than 100 years of age. As described above in Section 3.2.4, Section 3.2.5, and Section 3.2.6, the forest and woodland communities within the Study Area generally consist of secondary regrowth and/or recent regrowth vegetation communities that are relatively common throughout the Ottawa region. As such, the forest and woodland communities within the Study Area are unlikely to qualify under the Uncommon Characteristics Criteria.
- **Economic and Social** – Woodlots which contribute special economic or social functions can qualify under this criteria. The Study Area occurs within a predominantly rural landscape at the edge of the existing urban area. At the current time, the woodlots within the Study Area are surrounded by undeveloped areas, agricultural land uses, roads, and low density residential housing. The woodlots that occur within the Study Area are on private property and they do not include any public trails. No significant evidence of recreational and/or cultural usage has been observed. As such, the woodlots within the Study Area are unlikely to provide significant functions that would qualify under the Economic and Social Criteria. However, it should be noted that the Kanata Montessori School (1030 Cameron Harvey Drive) occurs adjacent to the forested area in the Northeast Segment. A fence is present surrounding the Kanata Montessori School that limits public access to the adjacent forest, and no public trails were observed within the forest. However, the forest adjacent to the Kanata Montessori School may provide minor aesthetic functions and other social benefits due to its proximity to the school. Woodlot G has been identified as a candidate for tree retention adjacent to the Kanata Montessori School (Refer to Section 4.1). The retention of Woodlot G adjacent to the school would likely be sufficient to address the minor aesthetic and social functions that may be provided by the forest.
- **Urban Air Quality** – The results of the National Capital Air Quality Mapping Pilot Project indicate that the City of Ottawa's air quality is within the Canadian and World Health Organization standards most of the time (City of Ottawa 2009). The City of Ottawa (2009) pilot project noted that the results of the study were not sufficiently detailed to pinpoint air quality hotspots within the City. The City of Ottawa (2009) pilot project further notes that urban air quality is influenced by a wide variety of factors (e.g. industrial output, transportation activity, home heating, weather patterns, climate, etc.), of which tree coverage is unlikely to be the most significant. The Study

Area is within the Ottawa West Minor Watershed, which has approximately 38% forest cover (City of Ottawa 2011). The Ottawa West Minor Watershed is approximately 31,700 ha in size with approximately 12,000 ha of forest cover (38%) (City of Ottawa 2011). The entire Study Area is approximately 225 hectares in size and much of that area does not include forest and/or woodland habitats. As such, the future development of the Study Area is unlikely to significantly impact the total forest cover in the region within the context of the subwatershed. By extension, the potential loss of forest cover associated with the future development of the Study Area is unlikely to have a significant impact on urban air quality.

The recommendations for tree retention are summarized below in Section 4.1.


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## 3.4 Tributaries & Fish Habitat

### 3.4.1 Tributaries & Fish Habitat (Southwest)

The tributaries that are present within the Southwest Segment are shown below in Figure 14. The tributaries that flow through the Southwest Segment include the following:

- **Shirley's Brook - North Branch (Tributary #3):** The North Branch of Shirley's Brook flows in an approximately southwest to northeast direction through the northern part of the Southwest Segment. The North Branch of Shirley's Brook is referred to as Tributary #3 in the approved Kanata North Urban Expansion Area (KNUEA) Community Design Plan (CDP) (Novatech 2016a). The North Branch (Tributary #3) was observed to have a wetted width of 1 m to 3 m during the early spring, with moderate flow volumes and water depths up to 30 cm (observed April 20th, 2023). The watercourse was predominantly dry by the early summer and has been observed to dry out in the summer season in most years (MEP 2016; Novatech 2016b; MES 2020). The bankfull channel width is approximately 3 m to 5 m throughout the Southwest Segment. The channel is well defined throughout the majority of the Southwest Segment, although it was predominantly overgrown with terrestrial vegetation by the early summer (e.g. the adjacent Graminoid Meadow – Refer to Section 3.2.1). Very few aquatic and/or wetland plants were found growing within the channel, indicating that the feature is dry throughout the majority of the growing season. Five (5) species of fish have been documented seasonally within the downstream portion of the North Branch (Tributary #3) (MEP 2016; Novatech 2016b). The fish species that have been observed within the North Branch (Tributary #3) during previous surveys include Central Mudminnow, Northern Redbelly Dace, Finescale Dace, Blacknose Dace, and Creek Chub (MEP 2016; Novatech 2016b). The previous fish survey results indicate that the North Branch (Tributary #3) provides low quality intermittent fish habitat for a warm water fish community.
- **Shirley's Brook - Southern Swale:** The Shirley's Brook - Southern Swale is a Headwaters Drainage Feature (HDF) that flows in an approximately southeast to northwest direction through the southern part of the Southwest Segment. The Shirley's Brook – Southern Swale intersects with the North Branch (Tributary #3). The Southern Swale was observed to have a wetted width of 1 m to 2 m during the early spring, with minor flow volumes and water depths up to 20 cm (observed April 20th, 2023). The HDF was observed to be predominantly dry throughout most of the growing season, and is likely hydrated only following the spring melt and after major storm events. The Southern Swale has a comparatively poorly defined channel, which appears as a shallow swale throughout the majority of the Southwest Segment. The bankfull channel width is approximately 2 m to 3 m throughout the Southwest Segment. The Southern Swale is predominantly overgrown with terrestrial vegetation (e.g. the adjacent Graminoid Meadow –

Refer to Section 3.2.1), and very few aquatic and/or wetland plants were observed. The Southern Swale can be characterized as an agricultural drainage swale, and it does not appear to provide any significant aquatic habitat functions. The feature is degraded and ephemeral, and therefore it is unlikely to provide significant fish habitat functions.


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# FIGURE 14: SOUTHWEST SEGMENT – TRIBUTARIES

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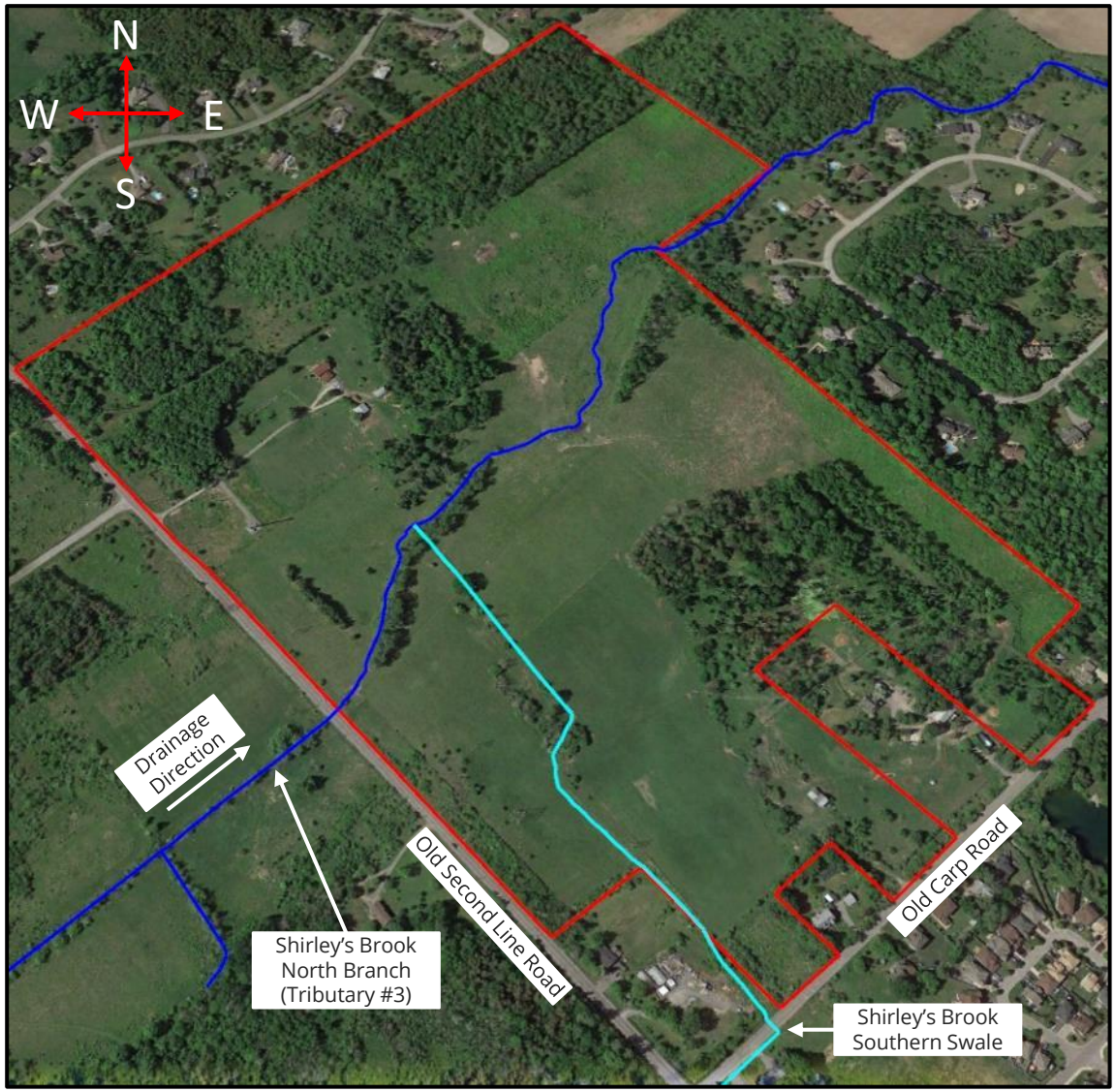
## South March Urban Expansion Area

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

**Photograph 79**: Looking east at the North Branch (Tributary #3) in the spring (adjacent to Tree Stand G) (May 8th, 2023).

**Photograph 80**: Looking east at the North Branch (Tributary #3) in the early summer (adjacent to Tree Stand E). Note that the channel is mostly dry and overgrown with Reed Canary Grass (June 14th, 2023).


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**Photograph 81**: Looking east at the North Branch (Tributary #3) from Old Second Line Road in the early spring (April 20th, 2023).


**Photograph 82**: Looking south at the Southern Swale in the late summer. The portion of the Southern Swale that is south of Old Carp Road is shown. Note that the channel is completely dry and poorly defined (August 13th, 2020).


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**Photograph 83**: Looking north at the Southern Swale from Old Carp Road in the early spring (April 20th, 2023).

**Photograph 84**: Looking north at the Southern Swale within the western part of the Southwest Segment (May 8th, 2023).


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**Photograph 85**: Looking south at the Southern Swale within the western part of the Southwest Segment. Note that the channel is completely dry in the late summer (August 13th, 2020).


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### 3.4.2 Tributaries & Fish Habitat (Northwest)

The tributaries that are present within the Northwest Segment are shown below in Figure 15. The North Tributary of Shirley's Brook flows through the Northwest Segment. The North Tributary of Shirley's Brook is referred to as Tributary #2 in the approved Kanata North Urban Expansion Area (KNUEA) Community Design Plan (CDP) (Novatech 2016a). Within the Northwest Segment, the North Tributary (Tributary #2) branches into three (3) connected reaches. The flow of all three (3) reaches intersects within the adjacent Copperwood Estate subdivision (located immediately southeast of the Northwest Segment). It should be noted that the North Tributary (Tributary #2) has been realigned into a 40 m wide corridor immediately downstream from the Study Area. The 40 m wide corridor extends from the southeast edge of the Northwest Segment to March Road (through the Copperwood Estate subdivision) (MES 2019). The realignment of the North Tributary (Tributary #2) through the Copperwood Estate subdivision included the installation of a variety of habitat enhancement and restoration features (MES 2019).

Detailed fish surveys have been completed within the North Tributary (Tributary #2) immediately downstream of the Northwest Segment (e.g. within the adjacent Copperwood Estate subdivision). A single pass electrofishing survey was completed on June 12th, 2018 (MES 2019). Five (5) species of fish were observed downstream of the Northwest Segment. The fish species that were observed during the previous fish surveys included Brook Stickleback, Creek Chub, Blacknose Dace, Finescale Dace, and Longnose Dace (MES 2019). The previous survey results indicate that the North Tributary (Tributary #2) provides low quality intermittent fish habitat for a warm water fish community (MEP 2016; MES 2019). The three (3) reaches of the North Tributary (Tributary #2) include the following habitat characteristics:

- **Shirley's Brook - North Tributary (Tributary #2) – Reach A:** The North Tributary (Tributary #2) – Reach A passes through open habitats (e.g. the Fallow Agricultural Fields and Graminoid Meadow described above in Section 3.2.2). The majority of the North Tributary (Tributary #2) – Reach A was observed to have a wetted width of 1 m to 3 m during the early spring, with moderate flow volumes and water depths up to 30 cm (observed April 20th, 2023). The bankfull channel width is approximately 5 m to 8 m throughout the majority of the Northwest Segment. However, a deeper and wider channel section is present in the southwestern part of the Northwest Segment, where the wetted width expands to approximately 5 m, the water depth was approximately 50 cm, and the bankfull channel width expands to approximately 10 m (observed April 20th, 2023). The watercourse was predominantly dry by the early summer and has been observed to dry out in the summer season in most years (MEP 2016; Novatech 2016b; MES 2019). The channel is well defined throughout the majority of the Northwest Segment. Aquatic/wetland plants occur sporadically throughout the channel including Spotted Joe Pye

Weed, Spotted Touch Me Not, Blue Vervain, Canada Anemone, and Common Cattail. However, the majority of the channel is dominated by dense Reed Canary Grass growing in a silt substrate. Portions of the channel substrate consist of exposed bedrock in the southwestern part of the Northwest Segment.

- **Shirley's Brook - North Tributary (Tributary #2) – Reach B:** The North Tributary (Tributary #2) – Reach B passes through a Deciduous Hedgerow in the northwestern corner of the Northwest Segment before flowing along the edge of the Fresh to Moist White/Green Ash – Elm Deciduous Forest. The North Tributary (Tributary #2) – Reach B flows through the Fresh to Moist White/Green Ash – Elm Deciduous Forest, the Dry to Fresh White Pine – Hardwood Mixed Forest, the Deciduous Shrub Thicket, and the Fallow Agricultural Field (Refer to Section 3.2.2 and Section 3.2.5 for a description of the adjacent vegetation communities). The portion of the North Tributary (Tributary #2) – Reach B that passes through the northwestern part of the Northwest Segment is heavily shaded by adjacent woody vegetation, resulting in a channel that mostly consists of silt and woody debris with relatively little instream aquatic/wetland plant growth. Reed Canary Grass dominates the channel substrate in areas where openings exist. In the northwestern part of the Northwest Segment, the North Tributary (Tributary #2) – Reach B was observed to have a wetted width of 2 m to 4 m during the early spring, with moderate flow volumes and water depths up to 30 cm (observed April 26th, 2023). The bankfull channel width is approximately 2 m to 5 m in the northwestern part of the Northwest Segment. The portions of the North Tributary (Tributary #2) – Reach B that pass through the central and southeastern parts of the Northwest Segment include more open channel conditions with greater light penetration. The portions of the channel that pass through the central and southeastern parts of the Northwest Segment are dominated by silty substrate with Reed Canary Grass, Blue Vervain, Spotted Joe Pye Weed, Spotted Touch Me Not, Canada Anemone, Common Stinging Nettle, and occasional Common Cattail growth. Some channel sections include cobble substrate, although the majority of the substrate consists of silt. The portions of the North Tributary (Tributary #2) – Reach B that pass through the central and southeastern parts of the Northwest Segment were observed to have a wetted width between 2 m and 4 m, a bankfull channel width of 4 m to 5 m, moderate flow volumes, and water depths up to 30 cm (observed April 20th, 2023). The North Tributary (Tributary #2) – Reach B was heavily overgrown and mostly dry by the mid-summer.
- **Shirley's Brook - North Tributary (Tributary #2) – Reach C:** The North Tributary (Tributary #2) – Reach C flows in an approximately northwest to southeast direction through the northern part of the Northwest Segment before intersecting with Reach B. The North Tributary (Tributary #2) – Reach C is partially shaded by the adjacent Deciduous Hedgerow. However, the adjacent Deciduous Hedgerow is relatively sparse, mostly consisting of Common Buckthorn and American Elm stems <20 cm diameter at breast height (dbh) in size. The Deciduous Hedgerow is confined

to the west side of the watercourse, and therefore Reach C is only partially shaded. The channel substrate is dominated by silt overgrown with Reed Canary Grass. The North Tributary (Tributary #2) – Reach C has a broad and shallow channel. The wetted width was observed to be between 3 m and 5 m during the early spring, with minor flow volumes and water depths of <20 cm (observed April 26th, 2023). The bankfull channel width is approximately 4 m to 6 m. The North Tributary (Tributary #2) – Reach C was predominantly dry by the early summer.


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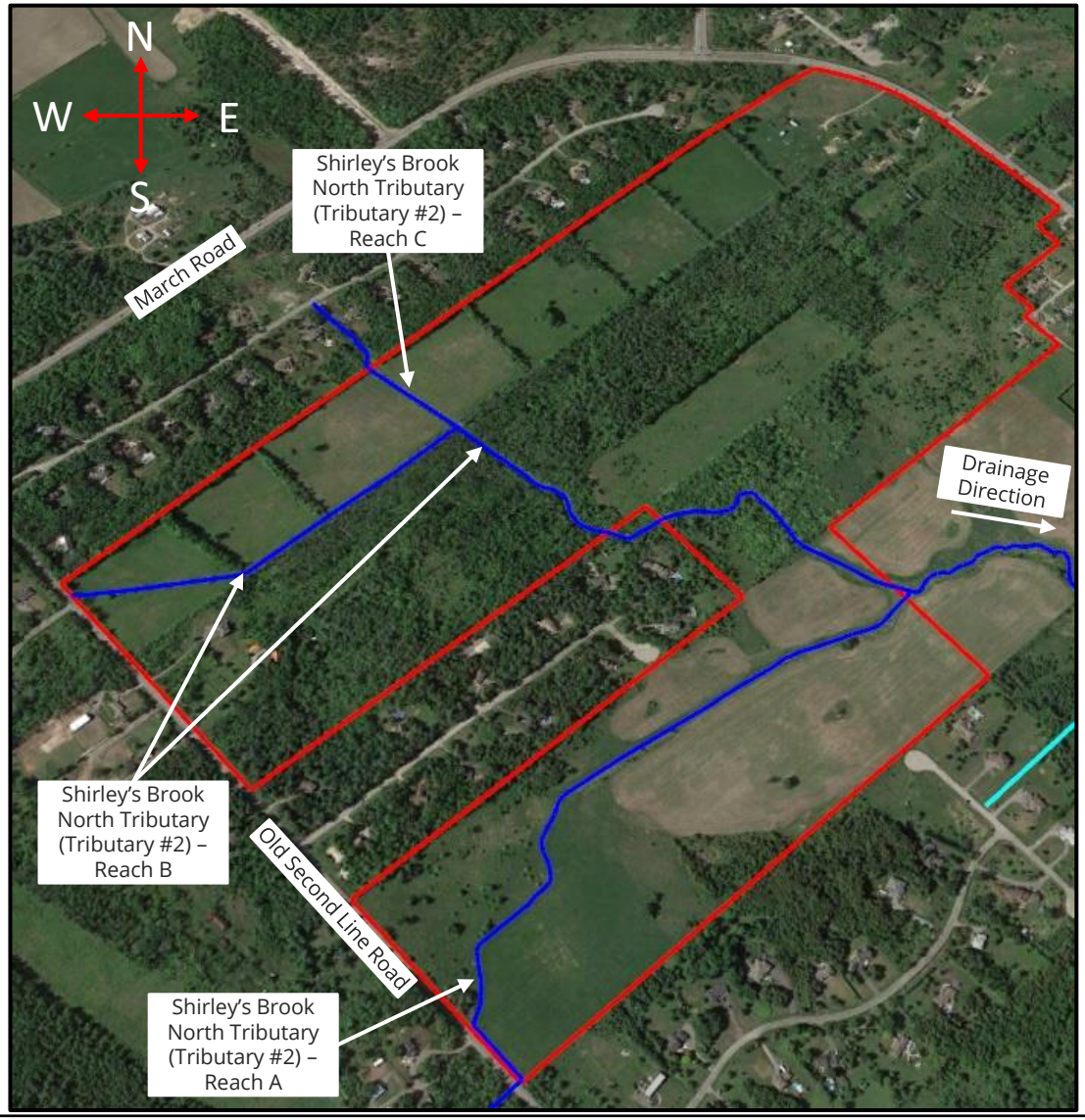
# FIGURE 15: NORTHWEST SEGMENT – TRIBUTARIES

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area




- Study Area - Watercourse - Headwaters Drainage Feature

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

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**Photograph 86**: Looking west at the North Tributary (Tributary #2) – Reach A in the southeastern part of the Northwest Segment (within the Fallow Agricultural Field) (April 20th, 2023).

**Photograph 87**: Looking east at the North Tributary (Tributary #2) – Reach A in the southeastern part of the Northwest Segment (within the Fallow Agricultural Field). Note that the channel is mostly dry and overgrown with Reed Canary Grass by the early summer (June 14th, 2023).


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**Photograph 88**: Looking east at the portion of the North Tributary (Tributary #2) – Reach A that has a wider channel. The area that is shown is in the southwestern part of the Northwest Segment (within the Graminoid Meadow) (April 20th, 2023).

**Photograph 89**: Looking west at the North Tributary (Tributary #2) – Reach A adjacent to Old Second Line Road. Tree Stand H is visible at the right (April 20th, 2023).

**Photograph 90**: Looking northeast at the North Tributary (Tributary #2) – Reach A adjacent to Old Second Line Road. Note that the channel was overgrown with Reed Canary Grass by the late spring. Tree Stand H is visible at the left (May 25th, 2023).


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**Photograph 91**: Looking west at the North Tributary (Tributary #2) – Reach A adjacent to Old Second Line Road. Tree Stand H is visible at the right. Note that the channel is mostly dry and overgrown with Reed Canary Grass by the early summer (June 14th, 2023).


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**Photograph 92**: Looking south at the North Tributary (Tributary #2) – Reach B in the central part of the Northwest Segment. The portion of the North Tributary (Tributary #2) – Reach B that passes through the Deciduous Shrub Thicket is shown (April 20th, 2023).


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**Photograph 93**: Looking south at the North Tributary (Tributary #2) – Reach B in the central part of the Northwest Segment. The portion of the North Tributary (Tributary #2) – Reach B that passes through the Fresh to Moist White/Green Ash – Elm Deciduous Forest is shown (May 8th, 2023).


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**Photograph 94**: Looking south at the North Tributary (Tributary #2) – Reach B in the central part of the Northwest Segment. The portion of the North Tributary (Tributary #2) – Reach B that passes through the Fresh to Moist White/Green Ash – Elm Deciduous Forest is shown. Note that the channel is mostly dry by the early summer (June 14th, 2023).


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**Photograph 95**: Looking east at the North Tributary (Tributary #2) – Reach B where the watercourse flows along the edge of the Fresh to Moist White/Green Ash – Elm Deciduous Forest (April 26th, 2023).

**Photograph 96**: Looking east at the North Tributary (Tributary #2) – Reach B within the northwest corner of the Northwest Segment (April 26th, 2023).

**Photograph 97**: Looking northwest at the North Tributary (Tributary #2) – Reach B within the northwest corner of the Northwest Segment. Note that the channel is mostly dry and overgrown with Reed Canary Grass by the early summer (June 14th, 2023).

**Photograph 98**: Looking southeast at the North Tributary (Tributary #2) – Reach C (April 26th, 2023).


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### 3.4.3 Tributaries & Fish Habitat (Northeast)

The tributaries that are present within the Northeast Segment are shown below in Figure 16. There are two (2) Headwaters Drainage Features (HDFs) within the Northeast Segment. The tributaries that flow through the Northeast Segment include the following:

- **Northeast Swale:** The Northeast Swale is a channelized Headwaters Drainage Feature (HDF) that conveys surface runoff from March Road to the Former Beachburg Railway Corridor. The Northeast Swale passes through the Cultural Meadow and the Canada Goldenrod - Forb Meadow in the southwestern part of the Northeast Segment (described above in Section 3.2.3). The Northeast Swale then flows through the Dry to Fresh White Ash – Hardwood Deciduous Forest to the eastern boundary of the Northeast Segment (described above in Section 3.2.6). In the southwestern part of the Northeast Segment, the Northeast Swale was observed to have a wetted width of 1 m to 2 m during the early spring, with minor flow volumes and water depths of <10 cm (observed April 27th, 2023). In the southwestern part of the Northeast Segment, the bankfull channel width was approximately 2 m to 4 m and the channel was heavily overgrown with Reed Canary Grass and Spotted Joe Pye Weed. Where the Northeast Swale flows through the Dry to Fresh White Ash – Hardwood Deciduous Forest, the wetted width was 1 m to 3 m during the early spring, with minor flow volumes and water depths of <10 cm (observed April 27th, 2023). Within the Dry to Fresh White Ash – Hardwood Deciduous Forest, the bankfull channel width was 2 m to 5 m and the channel substrate predominantly consisted of silt with woody debris and detritus. The Northeast Swale was observed to be predominantly dry by the early summer (June 7th) and is likely hydrated only following the spring melt and after major storm events. The Northeast Swale can be characterized as a channelized drainage swale, and it does not appear to provide any significant aquatic habitat functions. The feature is degraded and ephemeral, and therefore it is unlikely to provide significant fish habitat functions.
- **Shirley's Brook – Northeast Tributary:** The Shirley's Brook – Northeast Tributary occurs within the northeast corner of the Northeast Segment. Within the limits of the Study Area, the Shirley's Brook - Northeast Tributary consists of a minor Headwaters Drainage Feature (HDF). The Shirley's Brook – Northeast Tributary was observed to have a wetted width of 1 m to 2 m during the early spring, with minor flow volumes and water depths of <10 cm (observed April 27th, 2023). The bankfull channel width was approximately 2 m to 4 m and the channel was heavily overgrown with shrubs including Red Osier Dogwood, Speckled Alder, and Slender Willow. The HDF was observed to be predominantly dry by the early summer (June 7th) and is likely hydrated only following the spring melt and after major storm events. The Shirley's Brook – Northeast Tributary can be characterized as a minor HDF that is unlikely to provide any significant aquatic habitat functions, other than minor flow contributions to downstream areas. The HDF has a very limited hydro-period, and therefore it is unlikely to provide significant fish habitat functions.


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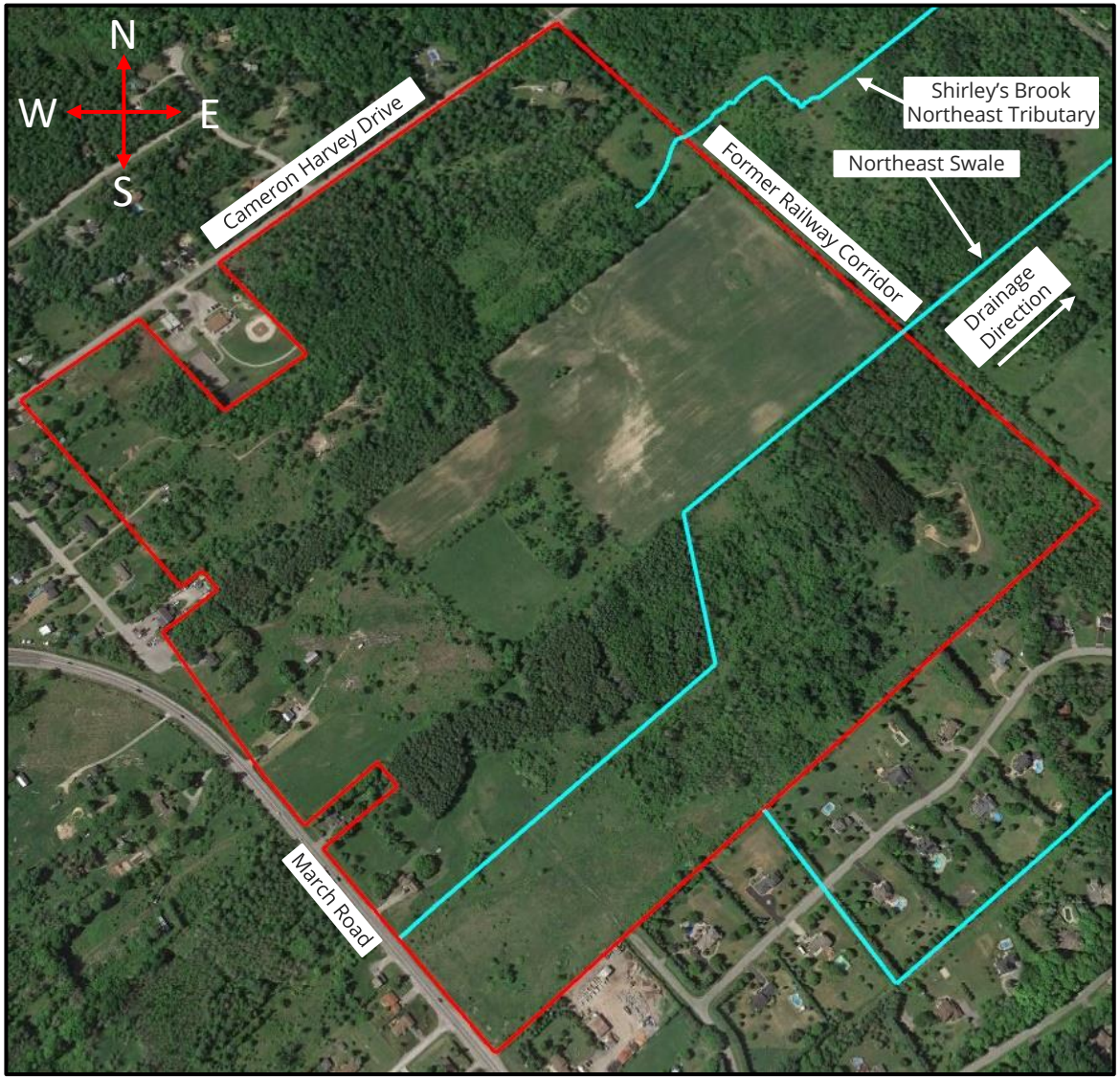
# FIGURE 16: NORTHEAST SEGMENT – TRIBUTARIES

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area




- Study Area - Watercourse - Headwaters Drainage Feature

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

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**Photograph 99**: Looking west at the Northeast Swale at the eastern edge of the Northeast Segment. Note that the channel is predominantly dry by the early summer (June 7th, 2023).

**Photograph 100**: Looking southwest at the Northeast Swale where it passes through the Dry to Fresh White Ash – Hardwood Deciduous Forest (April 27th, 2023).


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**Photograph 101**: Looking northeast at the Northeast Swale where it passes through the Dry to Fresh White Ash – Hardwood Deciduous Forest. Note that the channel is predominantly dry by the early summer (June 7th, 2023).

**Photograph 102**: Looking northeast at the Northeast Swale where it passes through the Cultural Meadow (left) and the Canada Goldenrod – Forb Meadow (right) (April 27th, 2023).


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**Photograph 103**: Looking southwest at the Northeast Swale. Note that the channel is predominantly dry by the early summer (June 7th, 2023).

**Photograph 104**: Looking southwest at the Northeast Swale. March Road is visible in the background (May 10th, 2023).


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**Photograph 105**: Looking southwest at the Northeast Swale. March Road is visible in the background (May 24th, 2023).

**Photograph 106**: Looking east at the Shirley's Brook – Northeast Tributary (April 27th, 2023).

**Photograph 107**: Looking west at the Shirley's Brook – Northeast Tributary. Note that the channel is predominantly dry by the early summer (June 7th, 2023).


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## 3.5 Summary of Designated Natural Heritage Features

The South March Urban Expansion Area (SMUEA) does not include any of the designated natural heritage features listed in the *Residential Growth Management Strategy for the New Official Plan* (City of Ottawa 2020). Specifically, no regulated wetlands, Provincially Significant Wetlands, Natural Environment Areas, Natural Heritage System Core Areas, and/or Natural Heritage System Linkage Areas are shown to occur within the SMUEA, per *Schedule C11-A – Natural Heritage System (West)* of the City of Ottawa's New Official Plan (City of Ottawa 2022a). Some of the forest communities that are found within the Study Area are shown as Natural Heritage Features Overlay in the City of Ottawa Natural Heritage System mapping (City of Ottawa 2022a). The City of Ottawa Natural Heritage System mapping also identifies the presence of the tributaries within the Study Area. The forest communities within the Study Area are discussed above as part of the Significant Woodlot Assessment (refer to Section 3.3). The tributaries are described above in Section 3.4. The potential presence of Significant Wildlife Habitat (SWH) and Species at Risk (SAR) habitat is discussed below in Section 3.6 and Section 3.7 (respectively).

A small unevaluated wetland feature (<0.5 ha in size) is shown to exist within the Cultural Woodlot in the Southwest Segment of the Study Area (City of Ottawa 2023c; MVCA 2023; OMNRF 2024). It should be noted that the feature that is shown as an 'unevaluated wetland' is a feeding and watering area for the elk herds within the Kanata Elk Ranch lands. The surface water that is sometimes present in the area consists of several troughs and depressions that are filled with a hose to provide water for the elk herds. The feature is not a natural vegetation community and its inclusion as an 'unevaluated wetland' should be considered a mapping error. There are no other wetland features shown to exist within the Study Area and/or immediately adjacent to the Study Area (City of Ottawa 2023c; MVCA 2023; OMNRF 2024). The South March Highlands Provincially Significant Wetland (SMHPSW) is located southwest of the Study Area. However, at its closest point the SMHPSW is >120 m from the southwest corner of the Study Area.

Floodplain areas are shown to exist around the North Tributary (Tributary #2) – Reach B and the North Tributary (Tributary #2) – Reach C within the Northwest Segment of the Study Area (City of Ottawa 2023c; MVCA 2023). There are no Areas of Natural and Scientific Interest (ANSI) shown to exist within the Study Area and/or within 120 m of the Study Area (OMNRF 2024).

## 3.6 Wildlife & Significant Wildlife Habitat

The bird and wildlife species that were observed during the surveys of the Study Area are listed in Appendix B. A total of fifty six (56) bird species were found within the Study Area. The majority of the birds that were observed within the Study Area are common species that frequently occur in suburban and rural areas throughout the Ottawa region. Several Species at Risk (SAR) birds were observed within the Study Area including Bobolink (threatened) (Refer to Section 3.7.1), Eastern Wood Pewee (special concern) (Refer to Section 3.7.2), Wood Thrush (special concern) (Refer to Section 3.7.2), and Barn Swallow (special concern) (Refer to Section 3.7.7). The potential presence of additional SAR birds is discussed below in Section 3.7.7.

It should be noted that the habitat of SAR qualifies as Significant Wildlife Habitat (SWH) and therefore the features that have been identified as SAR habitat overlap with the SWH designation (OMNRF 2015b). For brevity, the SAR habitat features are discussed below in Section 3.7 and are not re-iterated in this section.

The mammal species that were observed during the surveys of the Study Area include Coyote, Common Porcupine, Groundhog, White Tailed Deer, Common Raccoon, Eastern Grey Squirrel, Red Squirrel, Eastern Cottontail, and Eastern Chipmunk. The potential presence of bat hibernacula and bat maternity roosting habitat is discussed below in Section 3.7.7 in relation to the SAR bats.

American Toad, Grey Tree Frog, Green Frog, Northern Leopard Frog, Wood Frog, and Spring Peeper were observed and/or heard calling within the Study Area. Amphibian calling activity was recorded during the Eastern Whip Poor Will Call Surveys. The amphibian call observations are summarized below in Table C (Refer to Section 3.7.6). Small numbers of frogs were heard calling in the North Tributary (Tributary #2) – Reach A and the North Tributary (Tributary #2) – Reach B (Northwest Segment). Small numbers of frogs were also heard calling in the North Branch (Tributary #3) (Southwest Segment). As described above in Section 3.4.1 and Section 3.4.2, the watercourses in the Southwest Segment and the Northwest Segment also provide low quality intermittent fish habitat for a warm water fish community.

Midland Painted Turtle and Common Garter Snake were the only reptile species observed within the Study Area. The potential presence of turtle nesting habitat and turtle overwintering habitat is discussed below in Section 3.7.5. A large rock pile is present within the eastern part of the Graminoid Meadow in the Northeast Segment. The rock pile was identified as a potential snake hibernacula feature. The rock pile was surveyed to assess the potential presence of snakes during each Blanding's Turtle Basking Survey within the Northeast Segment. The survey dates and weather

conditions are summarized below in Table B (Refer to Section 3.7.5). A total of five (5) survey visits were completed during appropriate weather conditions between mid-April and mid-June. No snakes and/or snake skins were observed within the vicinity of the rock pile. The Common Garter Snakes that were observed within the Study Area were not observed in close proximity to the rock pile. No evidence of snakes utilizing the rock pile was observed and therefore the rock pile is unlikely to function as a snake hibernacula habitat feature.

There were no other potential SWH features observed within the Study Area (other than the features described above). No evidence was observed within the Study Area of migratory bird stopover areas, stick nests, colonially nesting breeding birds, heron rookeries, wetlands, caves, bedrock fissures, rare vegetation communities, deer wintering yards, or any other features which may qualify as SWH (OMNRF 2015b).

**Photograph 108**: Looking west across the rock pile within the eastern part of the Graminoid Meadow (Northeast Segment) (April 27th, 2023).


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**Photograph 109**: Looking south across the rock pile within the eastern part of the Graminoid Meadow (Northeast Segment) (June 7th, 2023).


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## 3.7 Species at Risk

### 3.7.1 Bobolink & Eastern Meadowlark

Bobolink (threatened) and Eastern Meadowlark (threatened) are typically found nesting in grasslands, old pastures, hayfields, and meadows (SARO 2024). Both species prefer open habitat dominated by graminoid plants (e.g. grasses) (OMNRF 2021a; OMNRF 2021b). As described above in Section 3.2.1, Section 3.2.2, and Section 3.2.3, Graminoid Meadow is present within each segment of the Study Area (Refer to Figure 5, Figure 6, and Figure 7). The Breeding Bird Survey points are shown below in Figure 17, Figure 18, and Figure 19. The Breeding Bird Survey results are summarized below in Table A.

No Eastern Meadowlarks were observed or heard calling within the Study Area during the Breeding Bird Surveys. As such, Eastern Meadowlark are unlikely to be a significant concern during the future development of the Study Area.

The following is a summary of the Bobolink occurrences within the Study Area:

- **Southwest Segment:** A single Bobolink was heard calling on June 1st in the southwestern part of the Graminoid Meadow (adjacent to Bird Survey Point #2). Two (2) observations of a bird displaying territorial and/or nesting behavior during the breeding season are generally required to confirm breeding activity (Birds Ontario 2021). Although a Bobolink was observed within the Southwest Segment, the bird was only observed once, and therefore breeding activity was not confirmed. It should be noted that the *Bobolink General Habitat Description* only identifies the presence of regulated Bobolink habitat in areas where there is confirmed breeding activity (e.g. a defended territory and/or nest) (OMNRF 2021a).
- **Northwest Segment:** Multiple Bobolink were observed in the Graminoid Meadow in the southwestern part of the Northwest Segment during each Breeding Bird Survey (adjacent to Bird Survey Point #6 and #7). Multiple breeding territories and/or nests were likely to be present adjacent to Bird Survey Point #6 and #7. A Bobolink was also observed in the Graminoid Meadow in the northeastern part of the Northwest Segment during each Breeding Bird Survey (adjacent to Bird Survey Point #10). A single Bobolink territory and/or nest was likely to be present adjacent to Bird Survey Point #10. The existence of breeding territories and/or nests in the vicinity of Bird Survey Points #6, #7, and #10 indicate the presence of regulated Bobolink habitat in those areas of the Northwest Segment (OMNRF 2021a). The recommended Bobolink mitigation and regulatory requirements are discussed below in Section 4.4. Two (2) Bobolink were observed in flight adjacent to Bird Survey Point #11 on June 14th. However, there were no

additional observations of Bobolink adjacent to Bird Survey Point #11, and therefore breeding activity was not confirmed adjacent to Bird Survey Point #11.

- **Northeast Segment:** No Bobolink were observed or heard calling within the Northeast Segment during the Breeding Bird Surveys.

**Photograph 110**: A Bobolink observed adjacent to Bird Survey Point #2 (Southwest Segment) (June 1st, 2023).


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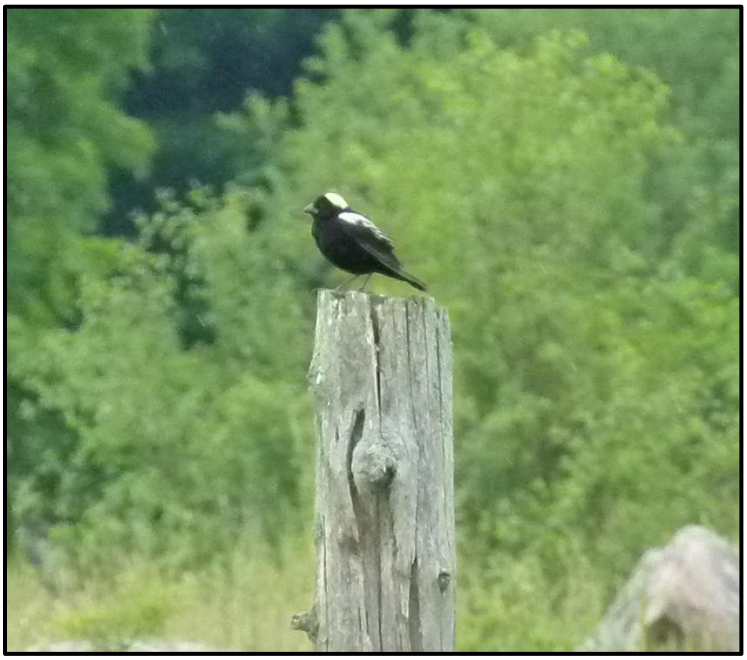

**Photograph 111**: A Bobolink observed adjacent to Bird Survey Point #6 (Northwest Segment) (June 14th, 2023).

**Photograph 112**: A Bobolink observed west of Bird Survey Point #7 (Northwest Segment) (May 25th, 2023).


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**Photograph 113**: A Bobolink observed east of Bird Survey Point #10 (Northwest Segment) (May 25th, 2023).


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### 3.7.2 Eastern Wood Pewee & Wood Thrush

Eastern Wood Pewee (special concern) and Wood Thrush (special concern) nest in deciduous and mixed forests (SARO 2024). A single observation of Wood Thrush was recorded in the western part of the Northeast Segment adjacent to Bird Survey Point #15 (on May 31st). There were no other observations of Wood Thrush within the Study Area. Two (2) observations of a bird displaying territorial and/or nesting behavior during the breeding season are generally required to confirm breeding activity (Birds Ontario 2021). Although a Wood Thrush was heard calling within the Northeast Segment, the bird was only observed once, and therefore breeding activity was not confirmed. No Wood Thrush were confirmed to be breeding within the Study Area and therefore Wood Thrush are unlikely to be a significant concern during the future development of the Study Area.

The following is a summary of the Eastern Wood Pewee occurrences within the Study Area:

- **Southwest Segment:** An Eastern Wood Pewee was heard calling within the Cultural Woodlot in the Southwest Segment during each Breeding Bird Survey (adjacent to Bird Survey Point #1).
- **Northwest Segment:** There were no observations of Eastern Wood Pewee within the Northwest Segment.
- **Northeast Segment:** An Eastern Wood Pewee was heard calling on May 31st and June 7th within the Dry to Fresh Sugar Maple – White Pine Mixed Forest in the Northeast Segment (adjacent to Bird Survey Point #17). A second Eastern Wood Pewee was heard calling on May 24th and May 31st within the Dry to Fresh White Ash – Hardwood Deciduous Forest in the Northeast Segment (adjacent to Bird Survey Point #18).

The Breeding Bird Survey results indicate that Eastern Wood Pewee were likely breeding in the Southwest Segment within the Cultural Woodlot (Bird Survey Point #1) and in the Northeast Segment within the Dry to Fresh Sugar Maple – White Pine Mixed Forest (Bird Survey Point #17) and within the Dry to Fresh White Ash – Hardwood Deciduous Forest (Bird Survey Point #18). In each case, a single breeding territory and/or nest was likely present at each location. It should be noted that Eastern Wood Pewee are a species of special concern, and therefore their habitat is not protected by the rules and regulations of the Ontario Endangered Species Act. The recommended Eastern Wood Pewee mitigation and regulatory requirements are discussed below in Section 4.4.


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# FIGURE 17: SOUTHWEST SEGMENT – BIRD SURVEY POINTS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area


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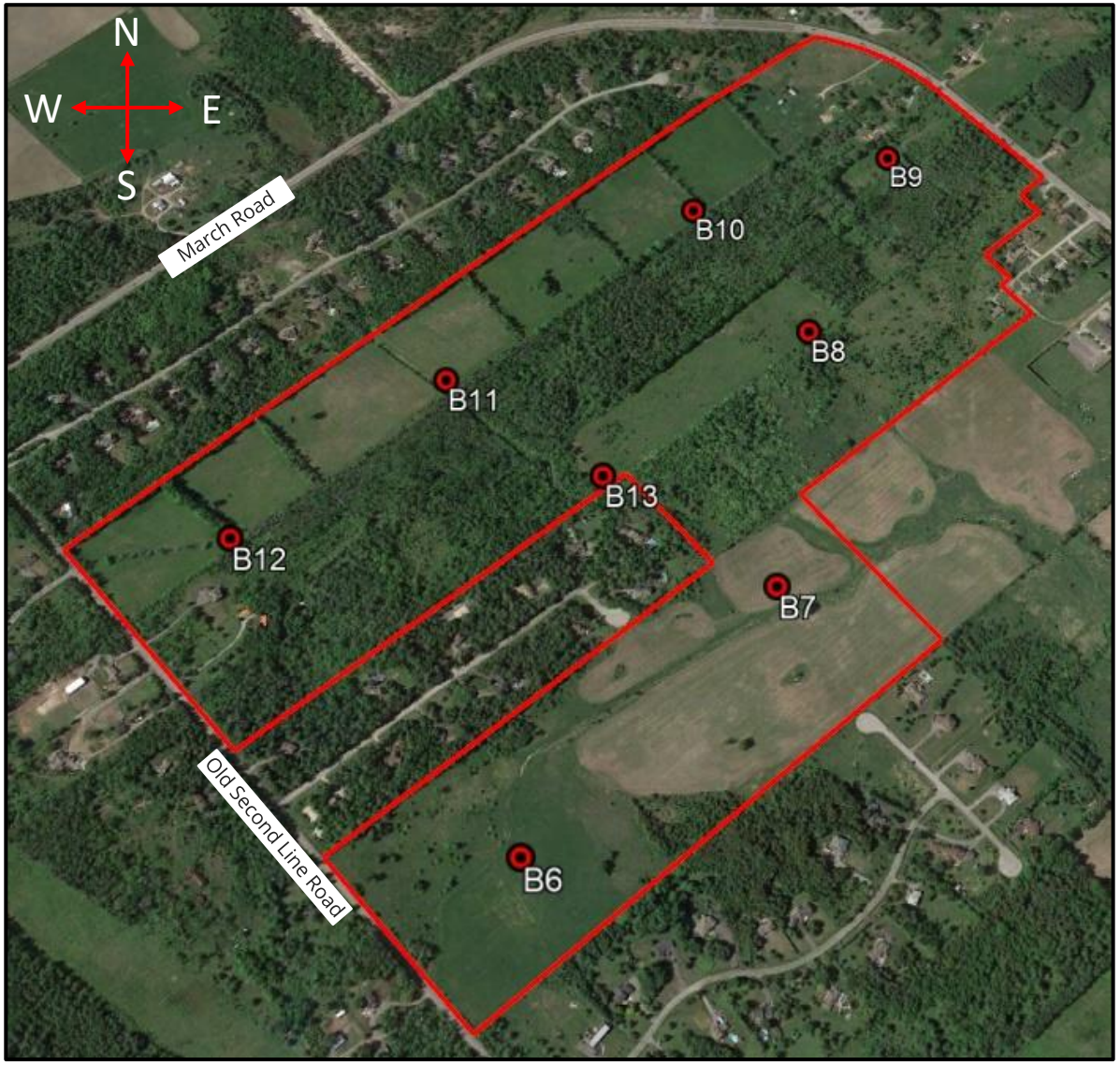
Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

October 2024

# FIGURE 18: NORTHWEST SEGMENT – BIRD SURVEY POINTS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area




- Study Area
B1 - Bird Survey Points

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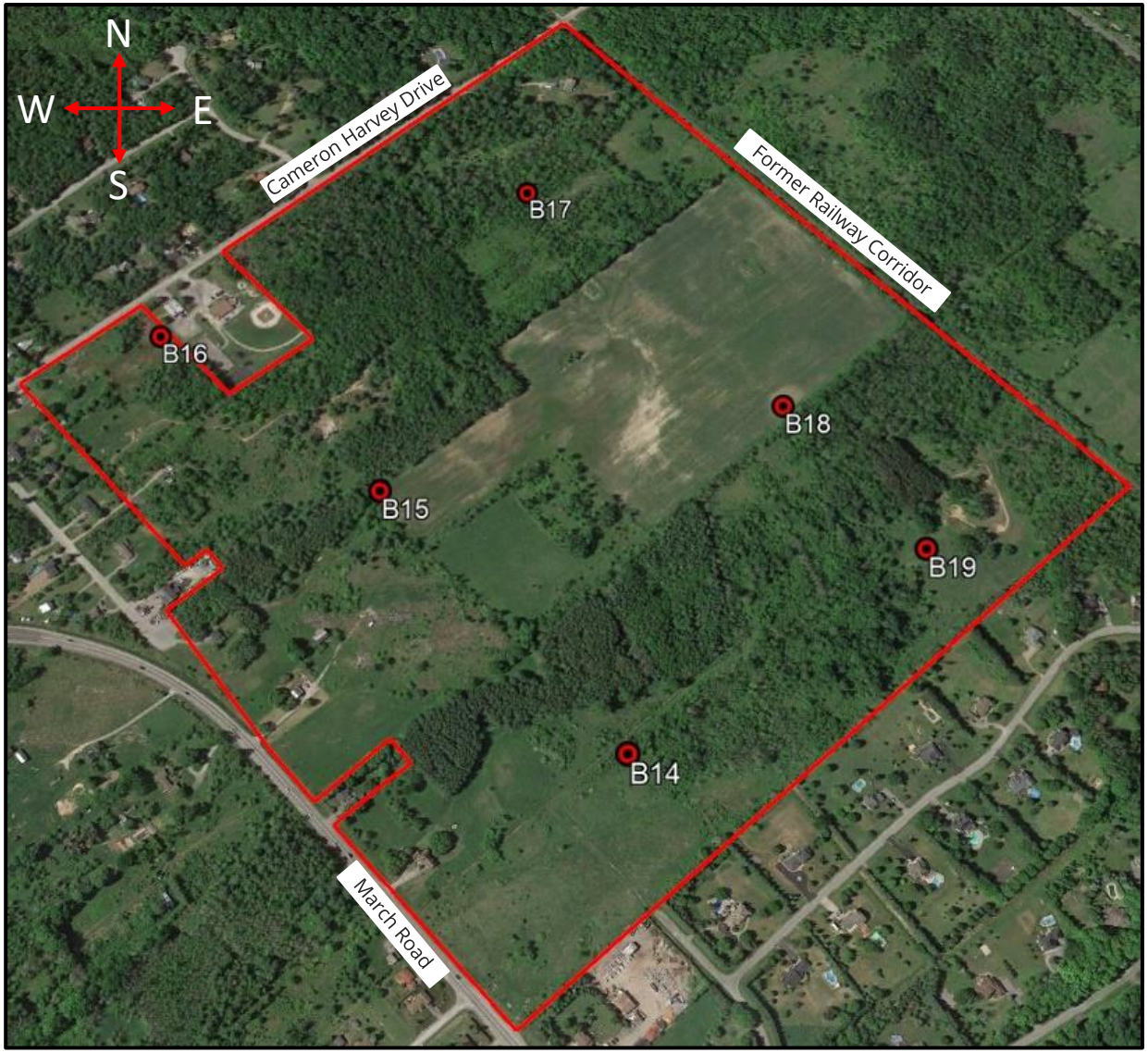
Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

October 2024

# FIGURE 19: NORTHEAST SEGMENT – BIRD SURVEY POINTS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area




- Study Area
B1 - Bird Survey Points

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

October 2024

| TABLE A: BREEDING BIRD SURVEY RESULTS | | | | | |
|---|---|---|---|---|---|
| **Survey Date** | **Survey Points** | **Start Temperature** | **Conditions** | **Start Time** | **Species at Risk Bird Sightings** |
| May 24th, 2023 | B14 to B19 | 14ºC | Mostly Sunny | 9:00 AM | 1x Eastern Wood Pewee Calling Southeast of B18 |
| May 25th, 2023 | B1 to B13 | 10ºC | Full Sun | 8:00 AM | 1x Eastern Wood Pewee Calling in Cultural Woodlot Northwest of B1<br>2x Barn Swallows Foraging and Nesting in Structures East of B4 (1310 Old Second Line Road)<br>Multiple Bobolink Calling in Meadow Between B6 & B7<br>1x Bobolink Calling in Meadow East of B10 |
| May 31st, 2023 | B14 to B19 | 16ºC | Full Sun | 8:00 AM | 1x Wood Thrush Calling Northeast of B15<br>1x Eastern Wood Pewee Calling West of B17<br>1x Eastern Wood Pewee Calling Southeast of B18 |
| June 1st, 2023 | B1 to B13 | 21ºC | Full Sun | 7:00 AM | 1x Eastern Wood Pewee Calling in Cultural Woodlot Northwest of B1<br>1x Bobolink Calling in Meadow Adjacent to B2<br>Multiple Bobolink Calling in Meadow Between B6 & B7<br>1x Bobolink Calling in Meadow East of B10 |
| June 7th, 2023 | B14 to B19 | 17ºC | Mostly Sunny | 8:00 AM | 1x Eastern Wood Pewee Calling West of B17 |
| June 14th, 2023 | B1 to B13 | 14ºC | Mostly Sunny | 7:30 AM | 1x Eastern Wood Pewee Calling in Cultural Woodlot Northwest of B1<br>5x Barn Swallows Foraging in Meadow North of B2<br>2x Barn Swallows Foraging and Nesting in Structures East of B4 (1310 Old Second Line Road)<br>Multiple Bobolink Calling in Meadow Around B6<br>1x Bobolink Calling in Hedgerow North of B10<br>2x Bobolink Flying/Calling Northeast of B11<br>5x Barn Swallows Foraging in Meadow West of B11 |


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### 3.7.3 Butternut Trees

Butternut Trees (endangered) occur in the Ottawa area in a wide variety of treed habitats (SARO 2024). Butternut Trees were found in varying densities in the treed habitats throughout the Study Area. In many cases, the Butternut Trees were observed to be in very poor condition and/or dead due to the effects of the Butternut Canker disease. The locations of the Butternut Trees are shown below in Figure 20, Figure 21, and Figure 22.

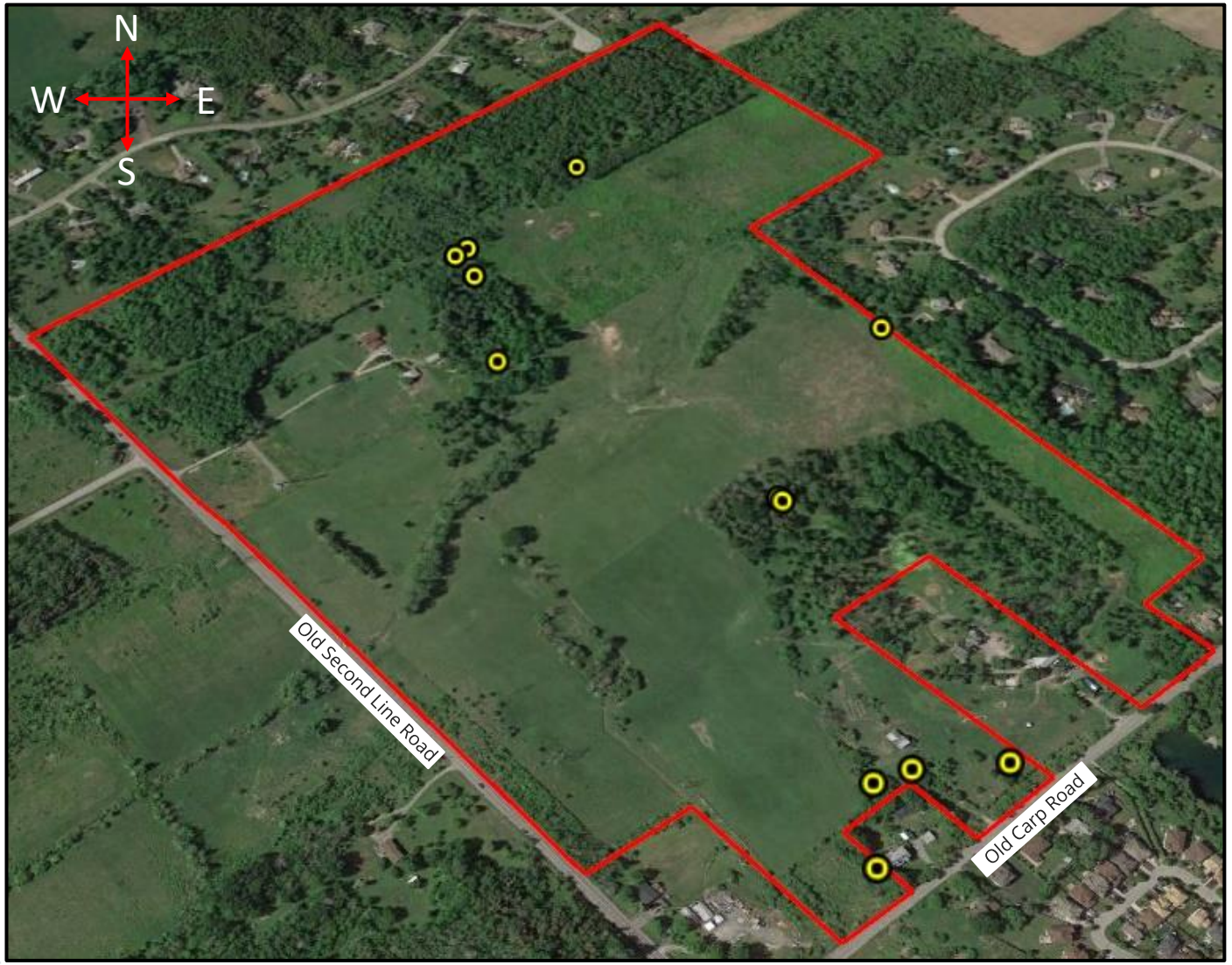
The following is a summary of the occurrence of Butternut Trees within the Study Area:

- **Southwest Segment:** Butternut Trees were found to occur in low density stands or as individual trees within the Southwest Segment. Several Butternut Trees were observed around the edges of the Southwest Segment, in association with Tree Stand A and Tree Stand B, and within both the Cultural Woodlot and the Dry to Fresh White Cedar – Hardwood Mixed Forest.
- **Northwest Segment:** Butternut Trees were found to occur in medium to high density stands along the edges of the Fresh to Moist White/Green Ash – Elm Deciduous Forest, within the northeastern part of the Dry to Fresh White Ash – Elm Deciduous Forest, and within the Deciduous Hedgerows in the northeastern part of the Northwest Segment.
- **Northeast Segment:** Butternut Trees were found to occur in low density stands or as individual trees in the central part of the Northeast Segment, as well as within the Dry to Fresh Sugar Maple – White Pine Mixed Forest and along the Former Beachburg Railway Corridor. Butternut Trees were also found to occur in very high density stands southwest of the Dry to Fresh Trembling Aspen – White Pine Mixed Woodland and within the Dry to Fresh White Ash – Hardwood Deciduous Forest. It should be noted that a very high concentration of Butternut Trees was observed throughout the southeastern part of the Northeast Segment.

All Butternut Trees that were encountered within the Study Area during the plant surveys were recorded in order to describe the presence/absence of Butternut Trees within each treed community and to describe the general density of the Butternut Trees. However, it should be noted that a detailed tree inventory has not been completed, and therefore the Butternut Tree survey results should not be considered comprehensive. It is likely that additional Butternut Trees will be found within the Study Area, in addition to the occurrences that are shown in Figure 20, Figure 21, and Figure 22. As described below in Section 4.4, Butternut Health Expert's (BHE) Reports will be required at the Draft Plan of Subdivision and/or Site Plan Application stage in order to provide a comprehensive inventory of the Butternut Trees and a full evaluation of their health status. The recommended mitigation and regulatory requirements for the Butternut Trees are discussed below in Section 4.4.

# FIGURE 20: SOUTHWEST SEGMENT – BUTTERNUT OCCURRENCES

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area




Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate. The field surveying did not include a comprehensive tree inventory and therefore it should be assumed that additional Butternut Trees could exist within the Study Area. A Butternut Health Expert's (BHE) Report will be required to provide a comprehensive inventory of the Butternut Trees.

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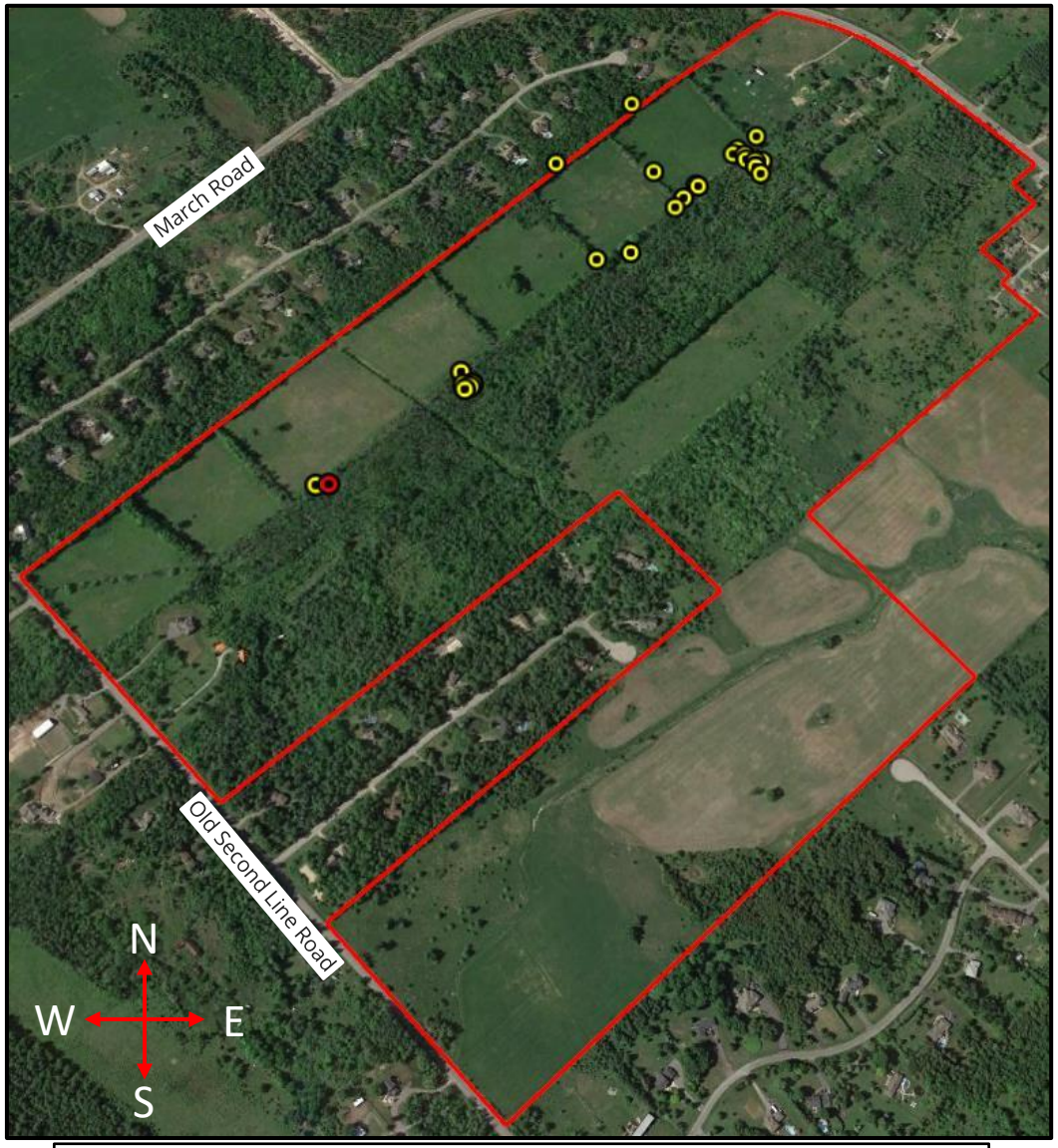
# FIGURE 21: NORTHWEST SEGMENT – BUTTERNUT & BLACK ASH OCCURRENCES

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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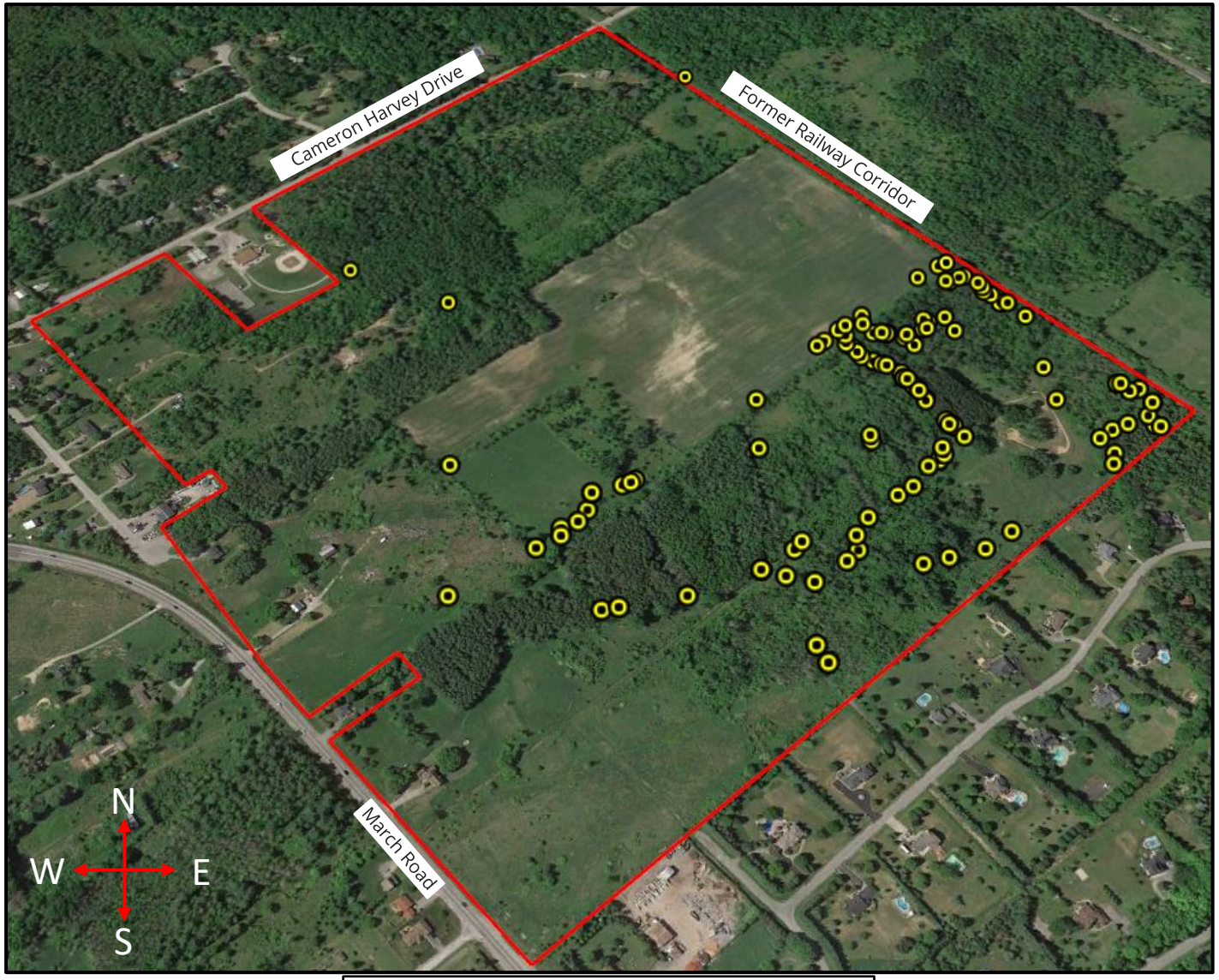
Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate. The field surveying did not include a comprehensive tree inventory and therefore it should be assumed that additional Butternut Trees and Black Ash Trees could exist within the Study Area. A Butternut Health Expert's (BHE) Report will be required to provide a comprehensive inventory of the Butternut Trees.

# FIGURE 22: NORTHEAST SEGMENT – BUTTERNUT OCCURRENCES

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate. The field surveying did not include a comprehensive tree inventory and therefore it should be assumed that additional Butternut Trees could exist within the Study Area. A Butternut Health Expert's (BHE) Report will be required to provide a comprehensive inventory of the Butternut Trees.

**Photograph 114**: A Butternut Tree within Tree Stand B in the southern part of the Southwest Segment (August 13th, 2020).

**Photograph 115**: A Butternut Tree within Tree Stand B in the southern part of the Southwest Segment (August 13th, 2020).


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**Photograph 116**: A Butternut Tree in the Fresh – Moist White/Green Ash – Elm Deciduous Forest within the Northwest Segment (April 26th, 2023).

**Photograph 117**: A Butternut Tree in the Dry to Fresh White Ash – Elm Deciduous Forest within the Northwest Segment (April 26th, 2023).


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**Photograph 118**: A Butternut Tree at the edge of the Dry to Fresh Sugar Maple – White Pine Mixed Forest within the Northeast Segment (April 27th, 2023).

**Photograph 119**: A Butternut Tree at the edge of the Dry to Fresh White Pine Coniferous Forest within the Northeast Segment (April 27th, 2023).


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**Photograph 120**: A row of Butternut Trees along the southern edge of the Dry to Fresh Trembling Aspen – White Pine Mixed Woodland within the Northeast Segment (May 10th, 2023).


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### 3.7.4 Black Ash Trees

Black Ash Trees (endangered) are typically found growing in wetlands, floodplains, and riparian habitat (SARO 2024). As described above in Section 3.5, there are no wetlands within the Study Area. Within the Study Area, potentially suitable Black Ash habitat is limited to the treed floodplain areas surrounding the North Tributary (Tributary #2) – Reach B and the North Tributary (Tributary #2) – Reach C. As described above in Section 3.4.1 and Section 3.4.2, the majority of the North Tributary (Tributary #2) – Reach A and the North Branch (Tributary #3) flow through open areas that are either devoid of mature tree cover or which include limited tree stands. There is very limited riparian habitat and/or floodplain surrounding the Headwaters Drainage Features (HDFs), and therefore the HDFs are unlikely to provide suitable Black Ash habitat.

Any Black Ash Trees that were encountered within the Study Area during the plant surveys were recorded. A single stand of regrowth Black Ash was found within the riparian zone surrounding the North Tributary (Tributary #2) – Reach B within the northern part of the Fresh to Moist White/Green Ash – Elm Deciduous Forest (Northwest Segment). The location of the Black Ash stand is shown above in Figure 21. All of the mature Black Ash Trees within the Black Ash stand have been killed by the Emerald Ash Borer, and the living Black Ash stems that remain in the area are limited to young recent regrowth saplings (<8 cm diameter at breast height (dbh) in size). The rules and regulations of the Ontario Endangered Species Act (ESA) do not protect individual Black Ash Trees that are <8 cm dbh in size (MECP 2024).

A detailed tree inventory has not been completed and therefore the Black Ash Tree survey results should not be considered comprehensive. As described below in Section 4.4, Black Ash Health Assessments may be required at the Draft Plan of Subdivision and/or Site Plan Application stage in order to provide a comprehensive inventory of the Black Ash Trees and a full evaluation of their health status. The recommended mitigation and regulatory requirements for the Black Ash Trees are described below in Section 4.4.


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**Photograph 121**: A recent regrowth Black Ash stem within the Fresh to Moist White/Green Ash - Elm Deciduous Forest (Northwest Segment) (May 25th, 2023).


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### 3.7.5 Blanding's Turtle

The Blanding's Turtle (threatened) Basking Survey results are summarized below in Table B. No Blanding's Turtles were encountered within the Study Area during the Blanding's Turtle Basking Surveys. The only turtle that was observed within the Study Area during the surveys was a single Midland Painted Turtle.

The *General Habitat Description for the Blanding's Turtle (Emydoidea blandingii)* (OMNRF 2021c) establishes three (3) types of Blanding's Turtle habitat:

- **Category 1 Habitat:** Category 1 Blanding's Turtle habitat includes features where Blanding's Turtles overwinter and nesting areas. Blanding's Turtles typically overwinter in wetlands and ponds (as opposed to flowing watercourses) (OMNRF 2021c). As described above in Section 3.5, there are no wetlands and/or ponds within the Study Area. As such, there are no features known to exist within the Study Area that may provide Category 1 overwintering habitat for Blanding's Turtles. Blanding's Turtle nesting habitat typically includes areas of loose sandy fill or gravel where turtles can dig into the substrate to lay their eggs (OMNRF 2021c). There are no significant areas of natural exposed sand or gravel, and no artificial stockpiles within the Study Area. As such, there are no features known to exist within the Study Area that are likely to qualify as Category 1 Blanding's Turtle habitat.
- **Category 2 Habitat:** Category 2 Blanding's Turtle habitat includes wetlands and watercourses that are used by Blanding's Turtles as core foraging, basking, and living areas (OMNRF 2021c). The *General Habitat Description for the Blanding's Turtle (Emydoidea blandingii)* (OMNRF 2021c) identifies that all suitable wetlands and watercourses qualify as Category 2 habitat if they are within 2 km of known Blanding's Turtle occurrences (OMNRF 2021c). Although no Blanding's Turtles were observed within the Study Area during the Blanding's Turtle Basking Surveys, there are documented occurrences of the species within 2 km of the Study Area to the northeast (e.g. adjacent to Shirley's Bay and its surrounding wetlands), to the southeast (e.g. within the Kanata North Urban Expansion Area), and to the southwest (e.g. within the South March Highlands Provincially Significant Wetland) (OMNRF 2024). The watercourses within the Southwest Segment and the Northwest Segment qualify as Blanding's Turtle Category 2 habitat due to the documented occurrences of Blanding's Turtles in surrounding areas. The definition of Category 2 habitat includes the watercourses themselves and the surrounding terrestrial area within 30 m of the watercourses (on both sides) (OMNRF 2021c). It should be noted that the watercourses within the Southwest Segment and the Northwest Segment provide poor quality Blanding's Turtle habitat due to their limited hydro-period, the absence of nearby wetlands and/or ponds, and a history of agricultural land use in the surrounding area (Refer to Section 3.4.1 and Section

3.4.2 for additional details). The Headwaters Drainage Features (HDFs) do not provide sufficient aquatic habitat functions to support Category 2 Blanding's Turtle habitat.

- **Category 3 Habitat:** Category 3 Blanding's Turtle habitat includes terrestrial areas extending up to 250 m from the edge of wetlands and watercourses (e.g. an additional 220 m from the edge of the Category 2 habitat, which includes a 30 m wide terrestrial buffer from the watercourse edge). The main function of Category 3 habitat is to provide corridors that allow Blanding's Turtles to move overland between adjacent Category 1 and Category 2 habitat features (OMNRF 2021c).

Blanding's Turtle Category 2 and Category 3 habitat occurs within the Southwest Segment and the Northwest Segment. There are no watercourses within the Northeast Segment that qualify as Blanding's Turtle Category 2 habitat. The recommended Blanding's Turtle mitigation and regulatory requirements are discussed below in Section 4.4.


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| TABLE B: BLANDING'S TURTLE SURVEY RESULTS | | | | | | |
|---|---|---|---|---|---|---|
| **Survey Date** | **Segments Surveyed** | **Start Temperature** | **End Temperature** | **Conditions** | **Start Time** | **Turtle Sightings** |
| April 20th, 2023 | SW Segment | 10ºC | 12ºC | Full Sun | 1:00 PM | *No Turtles Found* |
| April 26th, 2023 | NW Segment | 11ºC | 11ºC | Full Sun | 3:00 PM | *No Turtles Found* |
| April 27th, 2023 | NE Segment | 13ºC | 13ºC | Mostly Sunny | 1:00 PM | *No Turtles Found* |
| May 8th, 2023 | SW & NW Segments | 16ºC | 18ºC | Full Sun | 12:00 PM | *No Turtles Found* |
| May 10th, 2023 | NE Segment | 18ºC | 20ºC | Full Sun | 12:00 PM | *No Turtles Found* |
| May 24th, 2023 | NE Segment | 14ºC | 16ºC | Mostly Sunny | 12:00 PM | *No Turtles Found* |
| May 25th, 2023 | SW & NW Segments | 11ºC | 15ºC | Full Sun | 10:00 AM | 1x Midland Painted Turtle in Pool along North Branch (Tributary #3) Immediately East of Old Second Line Road |
| May 31st, 2023 | NE Segment | 16ºC | 20ºC | Full Sun | 9:00 AM | *No Turtles Found* |
| June 1st, 2023 | SW & NW Segments | 23ºC | 26ºC | Full Sun | 9:00 AM | *No Turtles Found* |
| June 7th, 2023 | NE Segment | 17ºC | 18ºC | Mostly Sunny | 10:00 AM | *No Turtles Found* |
| June 14th, 2023 | SW & NW Segments | 17ºC | 17ºC | Mostly Sunny | 9:00 AM | *No Turtles Found* |


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### 3.7.6 Eastern Whip Poor Will & Common Nighthawk

The Eastern Whip Poor Will (threatened) Call Survey results are summarized below in Table C. The Eastern Whip Poor Will Call Survey points are shown below in Figure 23, Figure 24, and Figure 25. The *General Habitat Description for the Eastern Whip Poor Will* (OMNRF 2014b) describes Eastern Whip Poor Will breeding habitat as "…open and half treed areas (which) often exhibit a scattered distribution of treed and open space…" Suitable breeding habitats generally consist of a 'mosaic' of open, half treed, and closed conditions (Garlapow 2007). The Study Area generally does not provide the 'mosaic' of open and closed habitat where Eastern Whip Poor Will are typically found breeding. As summarized below in Table C, no Eastern Whip Poor Will were heard calling during the Eastern Whip Poor Will Call Surveys.

Common Nighthawks (special concern) are typically found nesting in open habitats with very little ground vegetation including logged or burnt areas, rock barrens, peat bogs, lakeshores, and anthropogenic sites with gravel substrates (e.g. mines, gravel roads, etc.) (SARO 2024). The Study Area does not include any habitats that would typically be considered suitable for Common Nighthawk nesting. As summarized below in Table C, no Common Nighthawks were heard calling during the Eastern Whip Poor Will Call Surveys.

No evidence of Eastern Whip Poor Will and/or Common Nighthawk breeding activity was documented within the Study Area. As such, Eastern Whip Poor Will and Common Nighthawk are unlikely to be a significant concern during the future development of the Study Area.


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# FIGURE 23: SOUTHWEST SEGMENT – WPWI SURVEY POINTS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area


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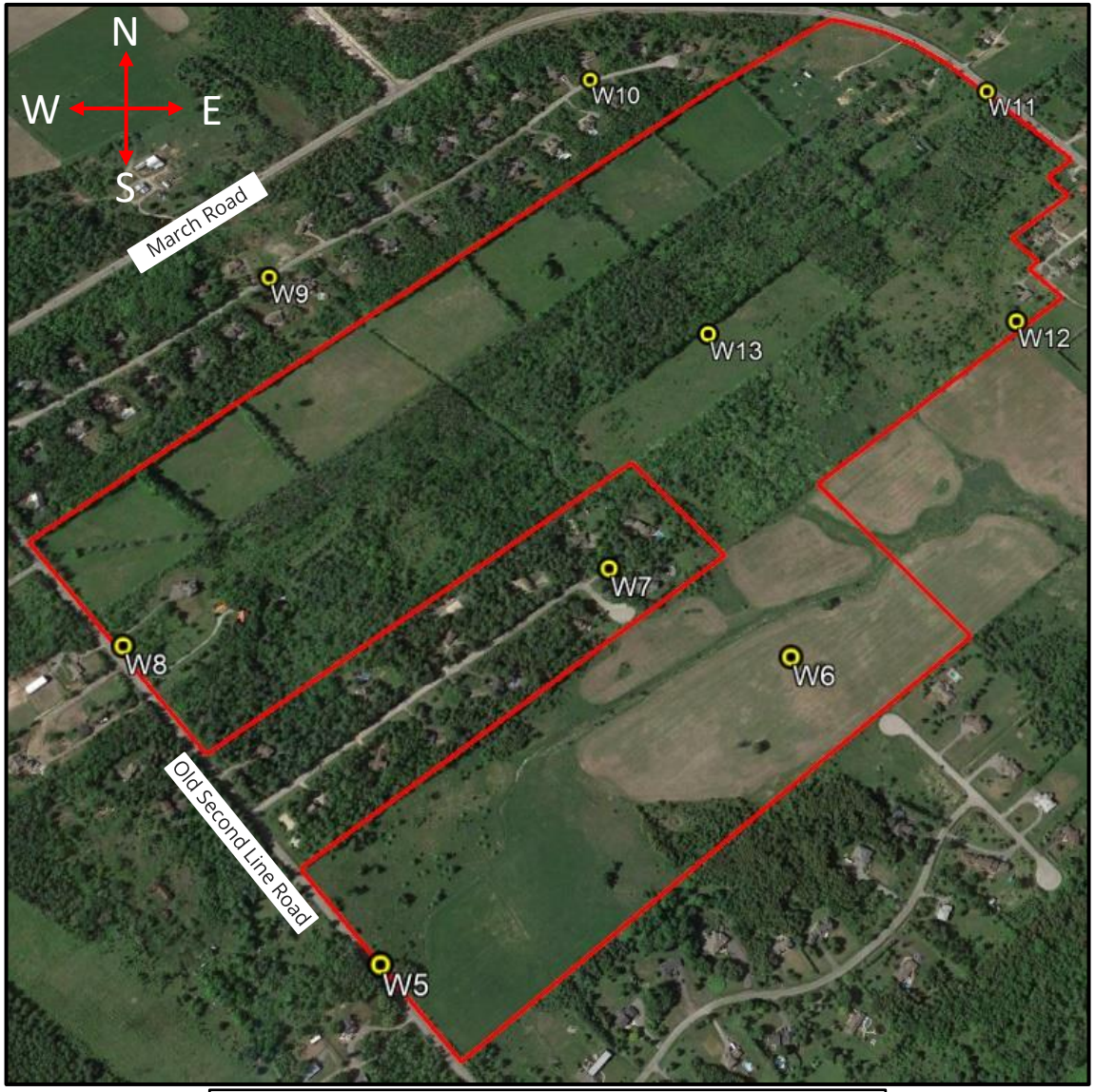
Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate. WPWI = Eastern Whip Poor Will.

# FIGURE 24: NORTHWEST SEGMENT – WPWI SURVEY POINTS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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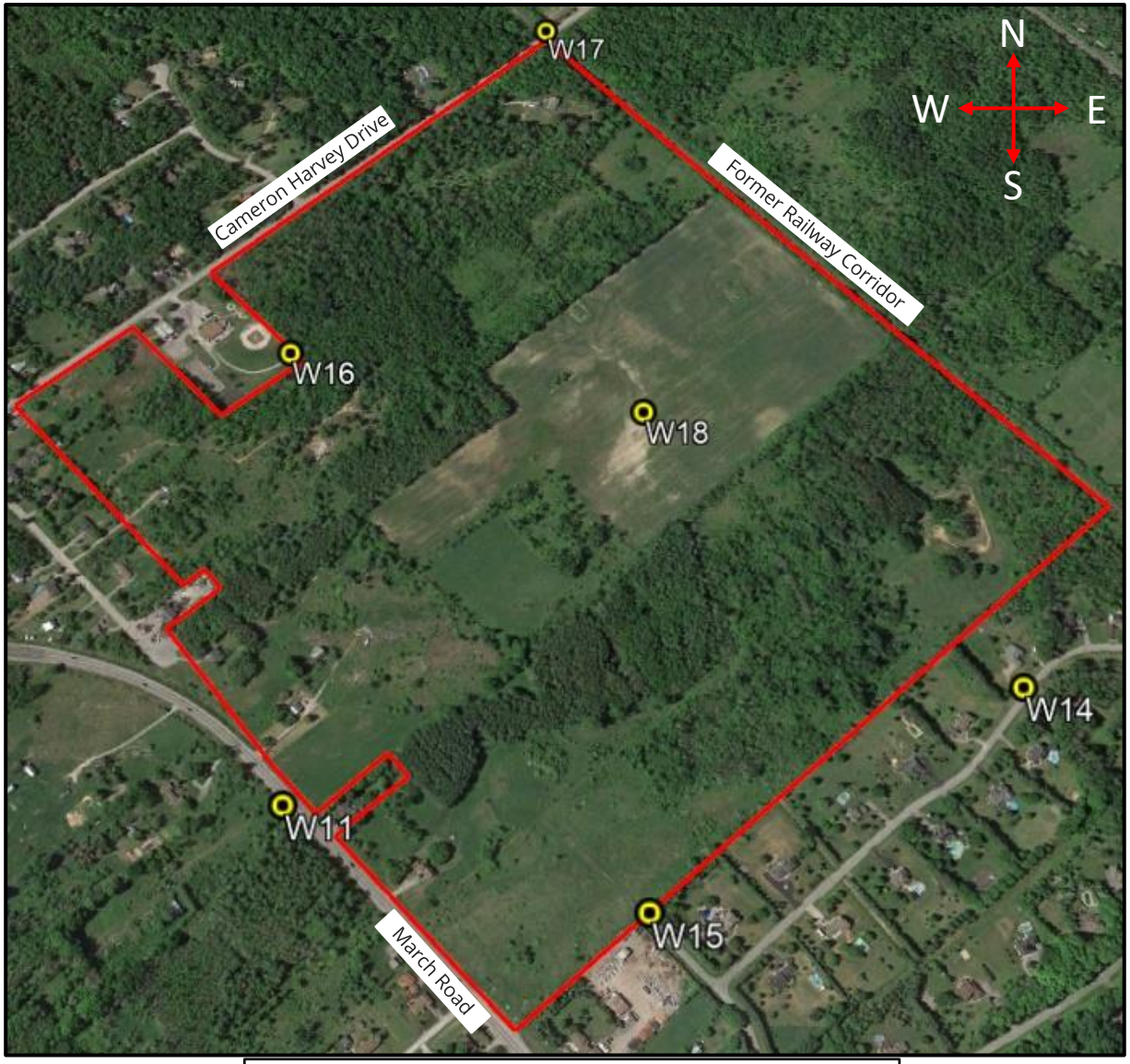
Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate. WPWI = Eastern Whip Poor Will.

October 2024

# FIGURE 25: NORTHEAST SEGMENT – WPWI SURVEY POINTS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate. WPWI = Eastern Whip Poor Will.

October 2024

| TABLE C: WHIP POOR WILL SURVEY RESULTS | | | | | | |
|---|---|---|---|---|---|---|
| **Survey Date** | **Temperature** | **Conditions** | **Wind Speed** | **Start Time** | **WPWI Calls** | **Other Species** |
| May 28th, 2023 | 23ºC | 100% Clear | 10 kph | 9:15 PM | *None* | W3 - 1x Spring Peeper in North Branch (Tributary #3) & American Woodcock<br>W5 - 2x Spring Peepers in North Tributary (Tributary #2) - Reach A & American Woodcock<br>W7 - 2x Spring Peepers in North Tributary (Tributary #2) - Reach A |
| June 4th, 2023 | 18ºC | 90% Clear | 11 kph | 9:30 PM | *None* | W6 - 1x American Toad to Southeast<br>W7 - 1x Grey Treefrog in North Tributary (Tributary #2) - Reach A |
| June 26th, 2023 | 21ºC | 90% Clear | 10 kph | 1:00 AM | *None* | W6 - 1x American Toad in North Tributary (Tributary #2) - Reach A<br>W7 - 1x American Toad in North Tributary (Tributary #2) - Reach A<br>W7 - 1x Green Frog in North Tributary (Tributary #2) - Reach B |


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### 3.7.7 Additional Species at Risk

The Natural Heritage Information Center (NHIC) records for the NHIC grids that overlap and surround the Study Area were reviewed (OMNRF 2024). The Ontario Ministry of Natural Resources and Forestry (OMNRF) Species at Risk (SAR) list for the Geographic Township of March was also reviewed (Appendix C). In addition to Bobolink, Eastern Meadowlark, Eastern Wood Pewee, Wood Thrush, Butternut Trees, Black Ash Trees, Blanding's Turtle, Eastern Whip Poor Will and Common Nighthawk (discussed above), the following additional SAR were identified as having the potential to occur within the vicinity of the Study Area:

- American Eel – Endangered
- Lake Sturgeon – Threatened
- River Redhorse – Special Concern
- Silver Lamprey – Special Concern
- Hickorynut - Endangered
- American Ginseng - Threatened
- Monarch Butterfly – Special Concern
- Rusty Patched Bumblebee – Endangered
- Transverse Lady Beetle – Endangered
- Eastern Musk Turtle – Special Concern
- Northern Map Turtle – Special Concern
- Snapping Turtle – Special Concern
- Eastern Small Footed Myotis – Endangered
- Little Brown Myotis – Endangered
- Northern Myotis – Endangered
- Tricolored Bat – Endangered
- Bank Swallow – Threatened
- Barn Swallow – Special Concern
- Black Tern – Special Concern
- Canada Warbler – Special Concern
- Chimney Swift - Threatened
- Evening Grosbeak – Special Concern
- Horned Grebe – Special Concern
- Hudsonian Godwit – Threatened
- Lesser Yellowlegs - Threatened
- Least Bittern - Threatened
- Loggerhead Shrike – Endangered
- Olive Sided Flycatcher – Special Concern


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- Peregrine Falcon – Special Concern
- Red Headed Woodpecker - Endangered
- Rusty Blackbird – Special Concern
- Short Eared Owl – Threatened

The following is a summary of the potential for these species to occur within the Study Area:

- **American Eel, Lake Sturgeon, River Redhorse, Silver Lamprey, and Hickorynut:** American Eel and Lake Sturgeon are fish species that are found in association with the Ottawa River (SARO 2024). River Redhorse and Silver Lamprey are also fish species which are primarily found in riverine environments and major tributaries (SARO 2024). Hickorynut is a freshwater mussel found in association with the Ottawa River (SARO 2024). The Study Area does not occur in close proximity to a riverine environment. The watercourses that occur within the Study Area are small streams that are too small to support riverine species (Refer to Section 3.4.1, Section 3.4.2, and Section 3.4.3 for additional details). Therefore, American Eel, Lake Sturgeon, River Redhorse, Silver Lamprey, and Hickorynut are unlikely to be a significant concern during the future development of the Study Area.
- **American Ginseng:** American Ginseng are found in association with mature deciduous forests (SARO 2024). As described above in Section 3.2.4, Section 3.2.5, and Section 3.2.6, there are deciduous forest communities within each segment of the Study Area. It should be noted that American Ginseng are exceedingly rare and prone to overharvesting, and are typically only found in Ontario in relatively remote and/or undisturbed forest areas. The Study Area occurs at the edge of an urban area adjacent to major roads. As such, it is relatively unlikely that American Ginseng would be found within the Study Area. No American Ginseng were observed within the Study Area during the plant surveys. Therefore, American Ginseng are unlikely to be a significant concern during the future development of the Study Area.
- **Monarch Butterfly:** Monarch Butterflies are found in meadow and grassland habitats in association with their Milkweed host plants (SARO 2024). As described above in Section 3.2.1, Section 3.2.2, and Section 3.2.3, Common Milkweed was found within the Graminoid Meadow and Forb Meadow communities within each segment of the Study Area. Although Common Milkweed is present in the Graminoid Meadow and Forb Meadow communities throughout the Study Area, no Monarch Butterflies were observed within the Study Area during the Species at Risk (SAR) surveys. Monarch Butterflies are a species of special concern, and therefore their habitat is not protected under the rules and regulations of the Ontario Endangered Species Act (ESA). Recommended mitigation measures to minimize potential impacts to SAR during vegetation clearing are described below in Section 4.4.

- **Rusty Patched Bumblebee and Transverse Lady Beetle:** Rusty Patched Bumblebees are exceedingly rare in Ontario and the only sightings of the species in the province since 2002 have been at the Pinery Provincial Park on Lake Huron (SARO 2024). There have been no records of Transverse Lady Beetles in Ontario since 1990 (SARO 2024). As such, Rusty Patched Bumblebees and Transverse Lady Beetles are unlikely to be a significant concern during the future development of the Study Area.
- **Eastern Musk Turtle, Northern Map Turtle, and Snapping Turtle**: Eastern Musk Turtle, Northern Map Turtle, and Snapping Turtle are species of special concern, and therefore their habitat is not protected under the rules and regulations of the Ontario ESA. Eastern Musk Turtle and Northern Map Turtle are primarily riverine species (SARO 2024). There are no riverine habitats located within close proximity to the Study Area, and therefore Eastern Musk Turtles and Northern Map Turtles are unlikely to be a significant concern during the future development of the Study Area. Snapping Turtles are generally common in many aquatic habitats throughout the Ottawa area (SARO 2024). During the Blanding's Turtle Basking Surveys, one (1) Midland Painted Turtle was observed within a pool along the North Branch (Tributary #3) immediately east of Old Second Line Road (Refer to Table B). While only one (1) turtle was observed within the Study Area during the Blanding's Turtle Basking Surveys, it is likely that the watercourses within the Southwest Segment and the Northwest Segment provide habitat for both Midland Painted Turtles and Snapping Turtles, as both species are generally common in suitable habitat throughout the Ottawa area. Recommended retention and mitigation measures that are designed to protect the ecological functions of the watercourses are described below in Section 4.2. Recommended mitigation measures to minimize potential impacts to wildlife during in-water work are also described below in Section 4.2. Lastly, the Blanding's Turtle mitigation measures described below in Section 4.4 will also mitigate potential impacts to Midland Painted Turtles and Snapping Turtles (special concern).
- **Eastern Small Footed Myotis, Little Brown Myotis, Northern Myotis, and Tricolored Bat**: No caves, bedrock fissures, mining shafts, abandoned buildings, or other features which may function as bat hibernacula habitat were observed within the Study Area. The OMNRF (2017a) guidelines for bat surveying state that deciduous and mixed forest habitats have the potential to provide maternity roosting sites. As described above in Section 3.2.4, Section 3.2.5, and Section 3.2.6, there are deciduous and mixed forest communities within each segment of the Study Area. The potential presence of bat maternity roosting habitat was not assessed as part of this Natural Environment Existing Conditions Report (NEECR). As described below in Section 4.4, Bat Cavity and Snag Tree Surveys following the OMNRF (2017a) bat surveying guidelines will be required in order to assess the potential presence of bat maternity roosting habitat. The Bat Cavity and Snag Tree Surveys are typically completed in conjunction with the forest sampling plots that will be required to complete tree inventories for the future Tree Conservation Reports.

As such, the Bat Cavity and Snag Tree Surveys should be completed in the future in conjunction with the field surveying for the Tree Conservation Reports (e.g. at the Draft Plan of Subdivision and/or Site Plan Application stage). The recommended mitigation measures and regulatory requirements for the SAR bats are discussed in greater detail in Section 4.4.

- **Bank Swallow:** Bank Swallows nest in natural and artificial deposits of sand and silt with vertical faces (SARO 2024). There are no significant areas of exposed sand or silt within the Study Area and no stockpiles currently exist. There were no Bank Swallows observed within the Study Area during the Breeding Bird Surveys. As such, Bank Swallows are unlikely to be a significant concern during the future development of the Study Area.
- **Barn Swallow:** Barn Swallows nest in anthropogenic structures including old barns, sheds, abandoned houses with openings, old silos, large culverts, under bridges, etc. (SARO 2024). As summarized above in Table A, several Barn Swallows were observed foraging within the Southwest Segment and the Northwest Segment. Barn Swallows were also observed to be entering and exiting the agricultural structures that are present within the 1310 Old Second Line Road property, indicating that Barn Swallows were likely nesting at that location. It should be noted that Barn Swallows were downgraded from threatened to special concern in January 2023 (SARO 2024). As a result, the habitat of Barn Swallows is no longer protected under the rules and regulations of the Ontario ESA, and it is no longer necessary to obtain an Ontario ESA authorization prior to demolishing structures that contain Barn Swallow nests. Recommended mitigation measures to address the potential presence of nesting Barn Swallows are described below in Section 4.4.
- **Black Tern**: Black Terns build their nests in shallow marshes (SARO 2024). As described above, there are no marshes within the Study Area and/or immediately adjacent to the Study Area. Therefore, Black Terns are unlikely to be a significant concern during the future development of the Study Area.
- **Canada Warbler**: Canada Warblers breed in deciduous and coniferous forest habitats with dense shrub cover (SARO 2024). Potentially suitable forest habitat exists within each segment of the Study Area. However, no Canada Warblers were observed within the Study Area during the Breeding Bird Surveys. As such, Canada Warblers are unlikely to be a significant concern during the future development of the Study Area.
- **Chimney Swift:** Chimney Swifts nest in suitable uncapped chimneys (SARO 2024). As described above in Section 1.1, this NEECR addresses the portions of the South March Urban Expansion Area (SMUEA) that have not been previously developed (e.g. excluding existing rural estate subdivisions, developed residential lots, and roads). No buildings with suitable uncapped chimneys were found within the undeveloped portions of the SMUEA (e.g. within the Study Area). There were no Chimney Swifts observed within the Study Area during the Breeding Bird Surveys. While no potentially suitable Chimney Swift nesting sites have been identified within the

undeveloped portions of the SMUEA (e.g. the Study Area), it is possible that uncapped chimneys may be present within the existing developed portions of the SMUEA and/or in nearby areas. Recommended mitigation measures to address the potential presence of nesting Chimney Swifts are described below in Section 4.4.

- **Evening Grosbeak**: Evening Grosbeaks breed in mature mixed forests dominated by Fir trees, White Spruce, and/or Trembling Aspen (SARO 2024). None of the mature mixed forest communities that are found within the Study Area are dominated by Fir trees, White Spruce, and/or Trembling Aspen (Refer to Section 3.2.4, Section 3.2.5, and Section 3.2.6). As such, the Study Area is unlikely to provide suitable breeding habitat for Evening Grosbeak. There were no Evening Grosbeaks observed within the Study Area during the Breeding Bird Surveys. Therefore, Evening Grosbeaks are unlikely to be a significant concern during the future development of the Study Area.
- **Horned Grebe**: Horned Grebes build their nests in marshes, ponds, and shallow bays (SARO 2024). As described above, there are no marshes, ponds, or shallow bays within the Study Area. Therefore, Horned Grebes are unlikely to be a significant concern during the future development of the Study Area.
- **Hudsonian Godwit and Lesser Yellowlegs**: Hudsonian Godwit and Lesser Yellowlegs are shorebird species. Hudsonian Godwit and Lesser Yellowlegs occur within the Ottawa area as rare migrants, and both species are occasionally found foraging on beaches, mudflats, and in coastal lagoons (SARO 2024). The Study Area does not provide beach, mudflat, and/or lagoon habitat. As such, Hudsonian Godwit and Lesser Yellowlegs are unlikely to be a significant concern during the future development of the Study Area.
- **Least Bittern:** Least Bitterns breed in open marshes and wetlands (SARO 2024). As described above, there are no marshes and/or wetlands within the Study Area and/or immediately adjacent to the Study Area. As such, Least Bitterns are unlikely to be a significant concern during the future development of the Study Area.
- **Loggerhead Shrike:** Loggerhead Shrikes are found nesting in large pastures and grasslands with scattered low trees and thorny shrubs. They also nest and forage in alvars (SARO 2024). The Graminoid Meadow communities that are found within the Study Area are too small to be likely to support Loggerhead Shrike nesting. There were no Loggerhead Shrikes observed within the Study Area during the Breeding Bird Surveys. As such, Loggerhead Shrikes are unlikely to be a significant concern during the future development of the Study Area.
- **Olive Sided Flycatcher:** Olive Sided Flycatchers typically breed in coniferous and mixed forest habitats adjacent to rivers and wetlands (SARO 2024). As described above, there are no rivers or wetlands within the Study Area and/or immediately adjacent to the Study Area. There were no Olive Sided Flycatchers observed within the Study Area during the Breeding Bird Surveys. As

such, Olive Sided Flycatchers are unlikely to be a significant concern during the future development of the Study Area.

- **Peregrine Falcon:** Peregrine Falcons nest on steep cliff edges and at the top of tall buildings in urban areas (SARO 2024). There are no potentially suitable nest sites for Peregrine Falcons within the Study Area. As such, Peregrine Falcons are unlikely to be a significant concern during the future development of the Study Area.
- **Red Headed Woodpecker**: Red Headed Woodpeckers are primarily found in association with open woodlands and woodland edges (SARO 2024). Potentially suitable woodland habitat exists within the Northwest Segment and the Northeast Segment of the Study Area. However, no Red Headed Woodpeckers were observed within the Study Area during the Breeding Bird Surveys. As such, Red Headed Woodpeckers are unlikely to be a significant concern during the future development of the Study Area.
- **Rusty Blackbird**: Rusty Blackbirds breed in coniferous forest near wetlands (SARO 2024). As described above, there are no wetlands within the Study Area and/or immediately adjacent to the Study Area. There were no Rusty Blackbirds observed within the Study Area during the Breeding Bird Surveys. As such, Rusty Blackbirds are unlikely to be a significant concern during the future development of the Study Area.
- **Short Eared Owl**: Short Eared Owls are found in areas with large tracts of open habitat including grasslands, marshes, and tundra (SARO 2024). The open habitats within the Study Area are too small to be likely to provide suitable foraging habitat for Short Eared Owls. There were no Short Eared Owls observed within the Study Area during the Breeding Bird Surveys. As such, Short Eared Owls are unlikely to be a significant concern during the future development of the Study Area.


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## 3.8 Linkages

*Schedule C11-A – Natural Heritage System (West)* of the City of Ottawa's New Official Plan does not identify any part of the Study Area as a Natural Heritage System Linkage Area (City of Ottawa 2022a). As such, the Study Area was not identified as a significant wildlife movement corridor and/or as a significant linkage area during the analysis that was undertaken to support the development of the City of Ottawa's New Official Plan and its associated Natural Heritage System Mapping (City of Ottawa 2022a; City of Ottawa 2023a).

Watercourse corridors surrounding the North Tributary (Tributary #2) and the North Branch (Tributary #3) have been retained and/or enhanced throughout the Kanata North Urban Expansion Area (KNUEA). The retained and/or enhanced watercourse corridors were designed to provide wildlife movement corridors through the KNUEA for Blanding's Turtles and other wildlife (in addition to providing other ecological functions) (Novatech 2016a; Novatech 2016b). As described below in Section 4.2, it is recommended that the watercourses within the current Study Area should be retained and/or enhanced within designated watercourse corridors. The retained and/or enhanced watercourse corridors will preserve the wildlife movement and linkage functions that are currently provided by the watercourses. Refer to Section 4.2 for additional details.


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# 4.0 RECOMMENDATIONS & REGULATORY REQUIREMENTS

## 4.1 Tree Retention & Tree Protection

The City of Ottawa Significant Woodlot guidelines state that the proposed removal/retention of Significant Woodlots within potential urban expansion areas should be evaluated under alternative development concepts as part of the planning process (City of Ottawa 2022b). The evaluation of alternative development concepts will be completed as part of the future urban expansion area design and approval process (e.g. the City of Ottawa Annex 4 – Secondary Plan Process), which will include the development of the South March Urban Expansion Area (SMUEA) Community Design Plan (CDP) and Environmental Management Plan (EMP). Section 3.3.1 and Section 3.3.2 include an analysis of the size, age, and condition of the woodlots, as well as a discussion of the ecological functions and ecosystem services provided by the woodlots. The recommendations for tree retention that have been identified through the analysis in Section 3.3.1 and Section 3.3.2 are intended to be further refined and confirmed during the future development of the SMUEA CDP and EMP (e.g. during the future Secondary Plan Process). The following tree retention recommendations were identified in Section 3.3.1 and Section 3.3.2:

**Southwest Segment**

- Woodlot B and Woodlot C should be considered as candidates for tree retention. The limits of Woodlot B and Woodlot C were determined using the 1976 historic air photo (refer to Figure 26 (below)); and
- As described below in Section 4.2, it is recommended that the North Branch (Tributary #3) should be retained and/or enhanced within a designated watercourse corridor. Existing trees and shrubs should be retained within the watercourse corridor wherever feasible and compatible with the future development requirements. Refer to Section 4.2 for additional details.

**Northwest Segment**

- Woodlot D and Woodlot F should be considered as candidates for tree retention. The limits of Woodlot D and Woodlot F were determined using the 1976 historic air photo (refer to Figure 26 (below)); and
- As described below in Section 4.2, it is recommended that the three (3) reaches of the North Tributary (Tributary #2) should be retained and/or enhanced within designated watercourse corridors. Existing trees and shrubs should be retained within the watercourse corridors wherever feasible and compatible with the future development requirements. Refer to Section 4.2 for additional details.


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**Northeast Segment**

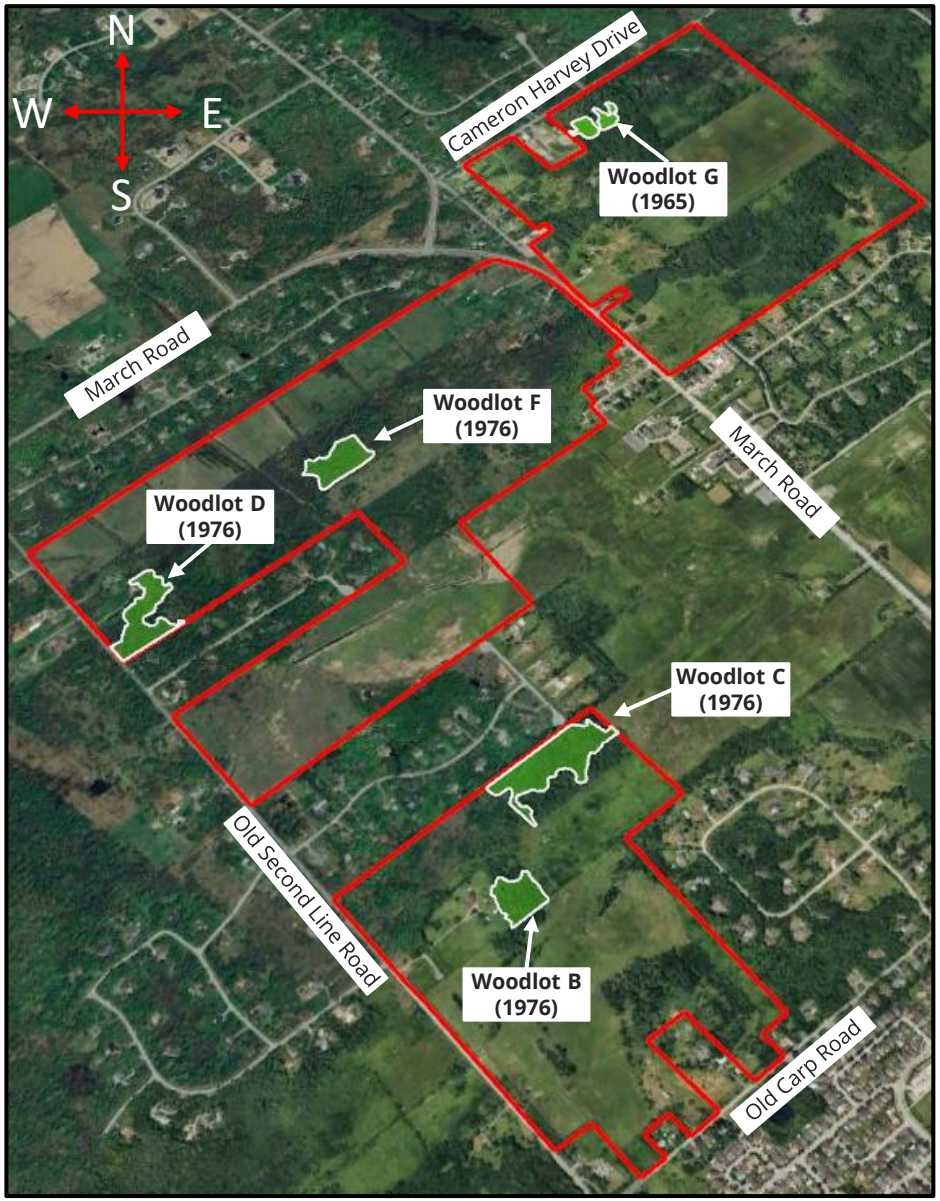
- Woodlot G should be considered as a candidate for tree retention. The limits of Woodlot G were determined using the 1965 historic air photo (refer to Figure 26 (below)); and
- As described above in Section 3.3.2, the retention of Woodlot G adjacent to the Kanata Montessori School would likely be sufficient to address the minor aesthetic and social functions that may be provided by the forest.

The following tree retention and tree protection recommendations should also be considered during the future development of the SMUEA CDP and EMP:

- **Edge Tree Retention:** The SMUEA CDP and EMP should consider the retention of healthy trees and shrubs at the edges of the future developments in any locations where the future developments will directly interface with existing residential properties. The retention of healthy trees and shrubs at the edges of the future developments should be considered on a case-by-case basis and should be prioritized in situations where there is insufficient tree and/or shrub cover within the adjacent properties to provide a privacy screen between the existing residences and the new development. It should be noted that many of the existing residential properties that occur adjacent to the Study Area consist of large rural estate lots with substantial forest cover. The retention of trees and shrubs at the edges of the future developments should not be prioritized in situations where the adjacent properties include forest cover and/or other vegetation that provides an adequate privacy screen;
- **School Site & Park Block Tree Retention:** The SMUEA CDP and EMP should identify opportunities to retain existing trees and shrubs within the future school sites and park blocks. The retention of existing trees and shrubs within the future school sites and park blocks should be undertaken only where feasible and compatible with the school and/or park requirements;
- **Replanting:** Landscaping Plans will be required at the Draft Plan of Subdivision and/or Site Plan Application stage. The Landscaping Plans should emphasize the planting of locally appropriate native trees and shrubs. The planting of trees and shrubs should be undertaken both to mitigate the loss of woody vegetation associated with the future developments and to meet the tree canopy targets set out in the City of Ottawa's New Official Plan (City of Ottawa 2023a);
- **Tree Protection Mitigation Measures:** Tree Conservation Reports will be required at the Draft Plan of Subdivision and/or Site Plan Application stage (described below in Section 4.5). The future Tree Conservation Reports will be required to identify specific tree protection mitigation measures to protect and preserve retained trees and retained natural areas during the construction of the future developments; and
- **Tree Cutting Permits:** Tree Cutting Permits under the City of Ottawa Tree Protection Bylaw (2020-340) will be required prior to undertaking tree clearing within the future developments.

# FIGURE 26: CANDIDATE RETAINED SIGNIFICANT WOODLOTS

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area




- Study Area

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate. Refer to Section 3.3.1 and Section 3.3.2 for a detailed analysis of the tree retention recommendations.

## 4.2 Tributaries & Fish Habitat Mitigation

The tributaries and fish habitat that are present within the Study Area are described above in Section 3.4. The recommended surveying, mitigation, and retention measures related to the tributaries and fish habitat are listed below. Regulatory requirements related to the tributaries and fish habitat are also listed below. The recommendations that are listed below are intended to be further refined and confirmed during the future development of the South March Urban Expansion Area (SMUEA) Community Design Plan (CDP) and Environmental Management Plan (EMP) (e.g. during the future Secondary Plan Process).

**Watercourses**

- The watercourses are permanent to intermittently flowing drainage features. The watercourses are shown below in Figure 27. As described above, the watercourses provide direct fish habitat (refer to Section 3.4), amphibian breeding habitat (refer to Section 3.6), low quality Blanding's Turtle Category 2 habitat (refer to Section 3.7.5), and potential wildlife movement corridors/linkage functions (refer to Section 3.8);
    - It is recommended that the watercourses should be retained and/or enhanced within designated watercourse corridors. It is also recommended that healthy trees and shrubs should be retained within the watercourse corridors wherever feasible and compatible with the future development requirements;
    - It is anticipated that a Fluvial Geomorphology Assessment will be completed to support the development of the SMUEA CDP and EMP (e.g. during the future Secondary Plan Process). The width of the retained and/or enhanced watercourse corridors should be established based on the findings and recommendations provided by the Fluvial Geomorphology Assessment;
    - As described below in Section 4.4, it should be noted that retained and/or enhanced watercourse corridors that are less than 60 m wide will result in a loss of Blanding's Turtle Category 2 habitat;
    - Watercourse realignments can be considered in order to meet the requirements of the future developments. If watercourse realignments are undertaken, the realigned channels must be designed and constructed according to natural channel design principles; and
    - Wildlife Passage Culverts will be required as part of the road design for any new roads that will cross the watercourses within the Southwest Segment and the Northwest Segment. The Wildlife Passage Culvert requirements are discussed below in Section 4.4.


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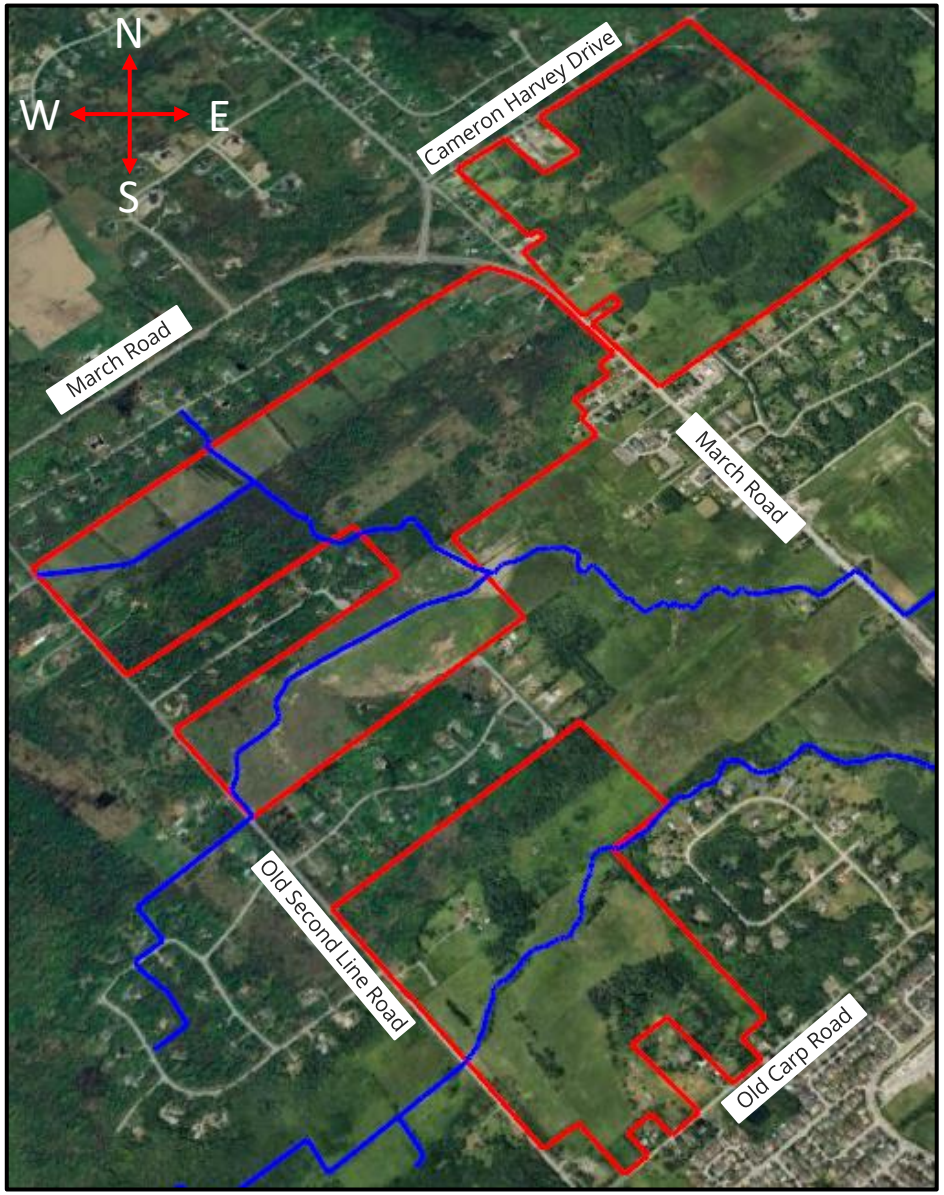
# FIGURE 27: CANDIDATE RETAINED/ENHANCED WATERCOURSES

## Natural Environment Existing Conditions Report
## South March Urban Expansion Area




- Study Area
- Watercourse

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Please Note: This is not a legal land survey. All dimensions and locations are shown as approximate.

October 2024

**Headwaters Drainage Features**

- The Headwaters Drainage Features (HDFs) are non-permanently flowing drainage features. As described above, the HDFs do not provide direct fish habitat (Refer to Section 3.4) and the HDFs do not qualify as Blanding's Turtle Category 2 habitat (Refer to Section 3.7.5);
    - Headwaters Drainage Feature Assessments (HDFAs) may be required at the Draft Plan of Subdivision and/or Site Plan Application stage in order to meet the review requirements of the Mississippi Valley Conservation Authority (MVCA) and/or the City of Ottawa. If required, the future HDFAs should be completed following the survey and assessment guidelines provided by the Toronto and Region Conservation Authority (TRCA) (2014) *Evaluation, Classification and Management of Headwater Drainage Features Guideline*; and
    - The HDFs are not significant ecological features and therefore they should not be retained for ecological purposes. The HDFs should be retained, decommissioned, and/or managed based on the findings and recommendations provided by the future HDFAs.

The following mitigation and regulatory requirements should also be considered during the future development of the SMUEA CDP and EMP:

- **Mississippi Valley Conservation Authority (MVCA) & Fisheries and Oceans Canada:** It is anticipated that the future developments within the SMUEA will be required to obtain authorizations from the MVCA under O.Reg. 153/06 in instances where significant alterations are proposed to the watercourses and/or HDFs. In cases where there are also significant impacts to fish habitat, the future developments within the SMUEA may be required to undertake the Fisheries Act review process. The review and/or approval process under O.Reg. 153/06 and/or the Fisheries Act should be undertaken at the Draft Plan of Subdivision and/or Site Plan Application stage;
- **Erosion & Sediment Control Plans:** Erosion and Sediment Control Plans will be required to address potential erosion and sediment impacts during the construction of the future developments;
- **In-Water Work Requirements:** Environmental Impact Studies will be required at the Draft Plan of Subdivision and/or Site Plan Application stage (described below in Section 4.5). The future Environmental Impact Studies will be required to identify specific in-water work mitigation and monitoring procedures. The in-water work mitigation and monitoring procedures will be required to comply with the relevant MVCA, Fisheries Act, and/or Ontario Endangered Species Act (ESA) regulations and approvals;
- **Fish & Wildlife Salvage:** At the construction stage, fish and wildlife must be relocated from any dewatering work areas in compliance with the relevant MVCA, Fisheries Act, and/or Ontario ESA regulations and approvals. In order to authorize the relocation of fish and other wildlife, a


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*License to Collect Fish for Scientific Purposes* and a *Wildlife Scientific Collector's Authorization* must be obtained from the Ontario Ministry of Natural Resources and Forestry (OMNRF) prior to the commencement of dewatering operations; and

- **In-Water Work Timing:** In-water work must be undertaken between November 1st and March 15th each year in order to avoid both the Blanding's Turtle active season (April 1st to October 31st) and the MVCA Sensitive In-water Work Timing Window (March 15th to June 30th) (MECP 2023).


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## 4.3 Wildlife Impact Mitigation

The mitigation and monitoring recommendations related to in-water work are described above in Section 4.2. The anticipated surveying, mitigation, and regulatory requirements related to Species at Risk (SAR) are discussed below in Section 4.4. Timing restrictions related to vegetation clearing, building demolition, and in-water work are also discussed below in Section 4.4.

In addition to the recommendations that are summarized in Section 4.2 and Section 4.4, the following wildlife mitigation and regulatory requirements should also be considered during the future development of the South March Urban Expansion Area (SMUEA) Community Design Plan (CDP) and Environmental Management Plan (EMP):

- **Bird Safe Design Guidelines:** Environmental Impact Studies (EISs) will be required at the Draft Plan of Subdivision and/or Site Plan Application stage (described below in Section 4.5). The future EISs must assess the risk of bird collision associated with each of the future developments, per the City of Ottawa *Bird Safe Design Guidelines* (City of Ottawa 2022c). The future EISs must also make recommendations to reduce the risks of bird collision associated with the future developments. The potential application of the *Bird Safe Design Guidelines* will require consideration by the applicable Qualified Professionals (e.g. Architect, Landscape Architect, etc.) as they develop the architectural/building designs and the Landscaping Plans for the future developments; and
- **Protocol for Wildlife Protection During Construction:** The future EISs must identify specific mitigation and monitoring procedures that address potential impacts to wildlife at the construction stage, per the City of Ottawa *Protocol for Wildlife Protection During Construction* (City of Ottawa 2022d).


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## 4.4 Species at Risk Mitigation & Regulatory Requirements

The Species at Risk (SAR) survey results are discussed above in Section 3.7. The following is a summary of the anticipated surveying, mitigation, and regulatory requirements for each SAR that has been identified as a potentially significant concern for the future development of the Study Area:

- **Bobolink:** As described above in Section 3.7.1, the Breeding Bird Survey results indicate that Bobolink breeding territories and/or nests were likely present in the vicinity of Bird Survey Points #6, #7, and #10, indicating the presence of regulated Bobolink habitat in those areas of the Northwest Segment (OMNRF 2021a);
    - The Bobolink habitat that was present within the Northwest Segment exists within several patches of Graminoid Meadow that have historically been farmed and/or managed as hayfields. The presence and/or extent of the Bobolink habitat is likely to change in the future if the Graminoid Meadow patches are farmed and/or if management of the Graminoid Meadow patches as hayfields ceases. In cases where hayfields are abandoned and left to regenerate, it is often the case that Bobolink habitat functions disappear over time, as the Graminoid Meadow gradually becomes dominated by forb plants and transitions to thicket and/or woodland conditions. It is recommended that the Bobolink habitat that has been identified within the Northwest Segment should be resurveyed at the Draft Plan of Subdivision and/or Site Plan Application stage in order to verify the extent of the Bobolink habitat at that time;
    - If it is determined at the Draft Plan of Subdivision and/or Site Plan Application stage that the future developments within the Northwest Segment will result in the removal of regulated Bobolink habitat, those future developments will be required to obtain an authorization under the Ontario Endangered Species Act (ESA). An authorization can be obtained through the Ministry of Environment Conservation and Parks (MECP) Online Impact Registration Process in cases where ≤30 hectares of Bobolink habitat will be impacted by a proposed development (SARO 2024). There is <30 hectares of potentially suitable Bobolink habitat in each segment of the Study Area, and therefore any future developments within the Study Area are likely to qualify to obtain an Ontario ESA authorization for Bobolink through the MECP Online Impact Registration Process; and
    - The Ontario ESA authorization process for Bobolink requires proponents to implement mitigation measures and to compensate for the removal of Bobolink habitat. The removal of Bobolink habitat can be offset by constructing and managing new grasslands as compensation habitat or by paying a fee to the Ontario Species Conservation Fund. Refer to SARO (2024) for additional details.

- **Eastern Wood Pewee:** As described above in Section 3.7.2, the Breeding Bird Survey results indicate that Eastern Wood Pewee were likely breeding in the Southwest Segment within the Cultural Woodlot (Bird Survey Point #1) and in the Northeast Segment within the Dry to Fresh Sugar Maple – White Pine Mixed Forest (Bird Survey Point #17) and within the Dry to Fresh White Ash – Hardwood Deciduous Forest (Bird Survey Point #18). In each case, a single breeding territory and/or nest was likely present at each location;
    - Eastern Wood Pewee are a species of special concern, and therefore their habitat is not protected under the rules and regulations of the Ontario ESA. An Ontario ESA authorization and habitat compensation is not required in cases where a development will remove Eastern Wood Pewee habitat; and
    - The presence of Eastern Wood Pewee habitat was considered during the development of the tree retention recommendations described above in Section 4.1. As described above in Section 4.1, a portion of the Dry to Fresh Sugar Maple – White Pine Mixed Forest (Woodlot G - Northeast Segment) has been identified as a candidate for tree retention. The recommended retention of a portion of the Dry to Fresh Sugar Maple – White Pine Mixed Forest (Woodlot G) provides an opportunity to preserve the Eastern Wood Pewee habitat in the vicinity of Bird Survey Point #17. As described above in Section 3.3.1 and Section 4.1, the Cultural Woodlot (Bird Survey Point #1) (Southwest Segment) and the Dry to Fresh White Ash – Hardwood Deciduous Forest (Bird Survey Point #18) (Northeast Segment) have not been identified as a priority for tree retention due to the highly degraded nature of the forest habitat.


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- **Butternut Trees:** As described above in Section 3.7.3, Butternut Trees were found in varying densities in the treed habitats throughout the Study Area. It should be noted that a detailed tree inventory has not been completed, and therefore the Butternut Tree survey results should not be considered comprehensive. It is likely that additional Butternut Trees will be found within the Study Area, in addition to the occurrences that are shown in Figure 20, Figure 21, and Figure 22;
    - Butternut Health Expert's (BHE) Reports will be required at the Draft Plan of Subdivision and/or Site Plan Application stage in each case where a Butternut Tree is found to occur within the proposed development area and/or within 25 m of the edge of the proposed development area;
    - The BHE Reports will provide a comprehensive inventory of the Butternut Trees. Per the rules and regulations of the Ontario ESA, the BHE Reports will classify the Butternut Trees according to their health status (e.g. Category 1 (non-retainable), Category 2 (retainable), and Category 3 (archivable)). The regulatory and compensation requirements for the Butternut Trees are determined by their health status (SARO 2024);
    - An authorization under the Ontario ESA will be required in cases where Category 2 and/or Category 3 Butternut Trees will be removed and/or impacted. The rules and regulations of the Ontario ESA allow the authorization requirements to be fulfilled through the MECP Online Impact Registration Process in cases where ≤15 Category 2 Butternut Trees and ≤5 Category 3 Butternut Trees will be removed and/or impacted. In cases where >15 Category 2 Butternut Trees and/or >5 Category 3 Butternut Trees will be removed and/or impacted, an Overall Benefit Permit will be required (SARO 2024). In either case, the authorization will also address the impacts to the associated Butternut habitat; and
    - The compensation requirements for Butternut Trees and their habitat vary depending on the health classification of the trees, the size of the trees, and the type of authorization that has been obtained. Butternut compensation typically involves a combination of:
        - a) Planting and tending Butternut seedlings;
        - b) Collecting seeds that are used to cultivate and distribute seedlings as part of a stewardship program;
        - c) Butternut archiving as part of the provincial archiving effort; and/or
        - d) Paying a compensation fee to the Ontario Species Conservation Fund.


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- **Black Ash Trees:** As described above in Section 3.7.4, a single stand of regrowth Black Ash was found within the riparian zone surrounding the North Tributary (Tributary #2) – Reach B within the northern part of the Fresh to Moist White/Green Ash – Elm Deciduous Forest (Northwest Segment);
    - All of the mature Black Ash Trees within the Black Ash stand have been killed by the Emerald Ash Borer, and the living Black Ash stems that remain in the area are limited to young recent regrowth saplings (<8 cm diameter at breast height (dbh) in size). It should be noted that the rules and regulations of the Ontario ESA do not protect individual Black Ash Trees that are <8 cm dbh in size (MECP 2024);
    - There are no healthy and mature Black Ash Trees known to occur within the Study Area (e.g. healthy Black Ash Trees ≥8 cm dbh in size). As such, there are no Black Ash Trees known to occur within the Study Area that are currently protected by the rules and regulations of the Ontario ESA. However, it should be noted that a detailed tree inventory has not been completed and therefore the Black Ash Tree survey results should not be considered comprehensive. Black Ash Health Assessments may be required at the Draft Plan of Subdivision and/or Site Plan Application stage in order to provide a comprehensive inventory of the Black Ash Trees and a full evaluation of their health status;
    - Additional mitigation and/or regulatory requirements related to the Black Ash Trees may be identified at the Draft Plan of Subdivision and/or Site Plan Application stage, depending on the outcome of the additional detailed surveying and/or Black Ash Health Assessments (if required); and
    - It should be noted that the only Black Ash Trees that were found to occur within the Study Area occur in close proximity to the North Tributary (Tributary #2) – Reach B. As such, the Black Ash Trees that are known to occur within the Study Area may be retained within a watercourse corridor surrounding the North Tributary (Tributary #2) – Reach B.


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- **Blanding's Turtle:** As described above in Section 3.7.5, the watercourses within the Southwest Segment and the Northwest Segment provide low quality Blanding's Turtle Category 2 habitat. The Category 2 habitat includes the watercourses themselves and the surrounding terrestrial area within 30 m (on both sides of the watercourses). Category 3 habitat extends an additional 220 m from the edge of the Category 2 habitat;
    - The potential impacts to the Blanding's Turtle habitat should be assessed and quantified at the Draft Plan of Subdivision and/or Site Plan Application stage. Any future developments within the Southwest Segment and the Northwest Segment that will result in significant impacts to the Blanding's Turtle Category 2 habitat will likely be required to obtain Overall Benefit Permits under the Ontario ESA;
    - It should be noted that retained and/or enhanced watercourse corridors that are less than a minimum of 60 m wide will result in a loss of Blanding's Turtle Category 2 habitat. The retained and/or enhanced watercourse corridors are discussed above in Section 4.2;
    - Any future developments within the Southwest Segment and the Northwest Segment that will result in impacts to the Blanding's Turtle Category 3 habitat will likely be required to undertake the Ontario ESA review process in consultation with the MECP. In previous cases where it was demonstrated that the removal of Category 3 habitat was not ecologically significant, the MECP has confirmed that Overall Benefit Permits under the Ontario ESA were not required. However, Overall Benefit Permits will likely be required in cases where the loss of Category 3 habitat is judged to be ecologically significant and/or where the loss of Category 3 habitat occurs in conjunction with impacts to Category 2 habitat;
    - The Ontario ESA Overall Benefit Permit process requires proponents to offset their impacts to the Blanding's Turtle habitat by providing habitat compensation. Blanding's Turtle habitat compensation may include a combination of:
        - a) Creating new Category 1 habitat features (e.g. nesting areas and/or overwintering sites);
        - b) Creating new Category 2 habitat features (e.g. wetlands and/or watercourse enhancements);
            - The new Category 1 and/or Category 2 habitat features could be installed within the future development areas and/or in offsite areas;
        - c) Measures to reduce road mortality along existing roads including the installation of Blanding's Turtle Exclusion Fencing and/or Wildlife Passage Culverts; and/or
        - d) Funding of research programs to study and advance the conservation of Blanding's Turtles;


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- Blanding's Turtle Exclusion Fencing will be required as part of any future developments that occur within, and/or adjacent to, the Category 2 and/or Category 3 habitat. The purpose of the Blanding's Turtle Exclusion Fencing will be to mitigate the risk of mortality associated with the future construction activities and the installation of new roads within the future developments;
- The Blanding's Turtle Exclusion Fencing will be required surrounding the perimeter of the retained and/or enhanced watercourse corridors (discussed above in Section 4.2) and surrounding the perimeter of any retained and/or constructed Category 1 and/or Category 2 habitat features;
- The Blanding's Turtle Exclusion Fencing will also be required around the perimeter of the future developments adjacent to any retained natural heritage features and/or in areas where it is judged that the future developments (including new roads) pose a significant risk of Blanding's Turtle road mortality;
- Temporary Blanding's Turtle Exclusion Fencing (e.g. toed-in silt fencing) will be required at the construction stage. Permanent Blanding's Turtle Exclusion Fencing will be required as the construction of the future developments is completed. In each case, the configuration of the Blanding's Turtle Exclusion Fencing and the materials that are used will be required to conform to the *Best Management Practices for Mitigating the Effects of Roads on Amphibian and Reptiles Species in Ontario* (Gunson et al. 2016);
- Wildlife Passage Culverts will be required as part of the road design for any new roads that will cross the watercourses within the Southwest Segment and the Northwest Segment. The Wildlife Passage Culverts must be sized and configured to allow the movement of Blanding's Turtles, per the technical specifications identified in Gunson et al. (2016);
- The future Overall Benefit Permits (where required) will identify additional detailed mitigation and monitoring requirements related to the Blanding's Turtles; and
- The mitigation requirements described above will also address potential impacts to Snapping Turtles (special concern) and Midland Painted Turtles.


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- **Species at Risk (SAR) Bats:** As described above in Section 3.7.7, the deciduous and mixed forest communities that are present within each segment of the Study Area have the potential to provide bat maternity roosting habitat for Eastern Small Footed Myotis, Little Brown Myotis, Northern Myotis, and Tricolored Bat. The potential presence of bat maternity roosting habitat was not assessed as part of this Natural Environment Existing Conditions Report (NEECR);
    - Bat Cavity and Snag Tree Surveys following the OMNRF (2017a) bat surveying guidelines will be required in order to assess the potential presence of bat maternity roosting habitat. The Bat Cavity and Snag Tree Surveys are typically completed in conjunction with the forest sampling plots that will be required to complete tree inventories for the future Tree Conservation Reports. As such, the Bat Cavity and Snag Tree Surveys should be completed in the future in conjunction with the field surveying for the Tree Conservation Reports (e.g. at the Draft Plan of Subdivision and/or Site Plan Application stage);
    - Additional Ontario ESA review and/or regulatory requirements related to the SAR bats may be identified at the Draft Plan of Subdivision and/or Site Plan Application stage, depending on the outcome of the future Bat Cavity and Snag Tree Surveys; and
    - It should be noted that in most cases where secondary regrowth forest has been cleared to support development in the Ottawa area, the proponents have not been required to obtain Ontario ESA authorizations in order to fulfill requirements related to the SAR bats. As an example, the SAR bats were not identified as a significant concern during the Overall Benefit Permit application and review processes for the major subdivision developments within the Kanata North Urban Expansion Area (KNUEA) (Novatech 2016a; Novatech 2016b).

- **Barn Swallow:** As described above in Section 3.7.7, several Barn Swallows were observed foraging within the Southwest Segment and the Northwest Segment. Barn Swallows were also observed to be entering and exiting the agricultural structures that are present within the 1310 Old Second Line Road property, indicating that Barn Swallows were likely nesting at that location;
    - It should be noted that Barn Swallows were downgraded from threatened to special concern in January 2023 (SARO 2024). As a result, the habitat of Barn Swallows is no longer protected under the rules and regulations of the Ontario ESA, and it is no longer necessary to obtain an Ontario ESA authorization prior to demolishing structures that contain Barn Swallow nests. It is also no longer necessary to provide habitat compensation when removing structures that contain Barn Swallow nests; and
    - The avoidance windows and timing restrictions related to the Barn Swallows are summarized below.


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- **Chimney Swift:** As described above in Section 1.1, this NEECR addresses the portions of the South March Urban Expansion Area (SMUEA) that have not been previously developed (e.g. excluding existing rural estate subdivisions, developed residential lots, and roads). No buildings with suitable uncapped chimneys were found within the undeveloped portions of the SMUEA (e.g. within the Study Area). There were no Chimney Swifts observed within the Study Area during the Breeding Bird Surveys (Refer to Section 3.7.7 for additional details);
    - While no potentially suitable Chimney Swift nesting sites have been identified within the undeveloped portions of the SMUEA (e.g. the Study Area), it is possible that uncapped chimneys may be present within the existing developed portions of the SMUEA and/or in nearby areas; and
    - If future developments within the SMUEA require the demolition of existing buildings, the existing buildings should be inspected to identify if any suitable uncapped chimneys are present. If suitable uncapped chimneys are present, a targeted survey for Chimney Swifts may be required to determine if any Chimney Swifts are nesting within the chimneys.

- **Species at Risk (SAR) Timing Restrictions:** The following is a summary of the SAR timing restrictions:
    - Vegetation Clearing: The MECP has recently provided updated guidance with respect to the active seasons and avoidance windows for SAR in Ontario (MECP 2023). MECP (2023) defines the core migratory bird nesting season as March 31st to August 31st each year. The Blanding's Turtle active season is defined as April 1st to October 31st each year. The active period for Little Brown Myotis, Northern Myotis, and Tricolored Bats is defined as April 1st to September 30th each year. All vegetation clearing must be undertaken to avoid the core migratory bird nesting season, the Blanding's Turtle active season, and the active season for the three (3) endangered bat species. In combination, these requirements necessitate that all vegetation clearing must be undertaken between November 1st and March 30th each year;
    - Building Demolition: Building demolition must be undertaken between September 1st and April 30th each year in order to avoid impacting Barn Swallows and their nests during the nesting season (SARO 2024); and
    - In-Water Work: In-water work must be undertaken between November 1st and March 15th each year in order to avoid both the Blanding's Turtle active season (April 1st to October 31st) and the Mississippi Valley Conservation Authority (MVCA) Sensitive In-water Work Timing Window (March 15th to June 30th) (MECP 2023).


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## 4.5 Environment Impact Study & Tree Conservation Report Requirements

Environmental Impact Studies (EISs) and Tree Conservation Reports (TCRs) will be required to support each development application at the Draft Plan of Subdivision and/or Site Plan Application stage. The EISs and TCRs must be prepared following the City of Ottawa *Environmental Impact Study Guidelines* (City of Ottawa 2023b). Per the City of Ottawa guidelines, the EISs and TCRs can be prepared as combined reports for each of the future developments with the Study Area (e.g. Combined EIS & TCR reports) (City of Ottawa 2023b).

The future Combined EIS & TCR reports will build upon the survey results and recommendations that are summarized in this Natural Environment Existing Conditions Report (NEECR). The future Combined EIS & TCR reports will be required to fulfill the various surveying, assessment, and regulatory requirements that are described above in Section 4.1 (Tree Retention & Tree Protection), Section 4.2 (Tributaries & Fish Habitat), Section 4.3 (Wildlife Impact Mitigation), and Section 4.4 (Species at Risk Mitigation & Regulatory Requirements). In addition to the requirements described above, the future Combined EIS & TCR reports will be required to address the following:

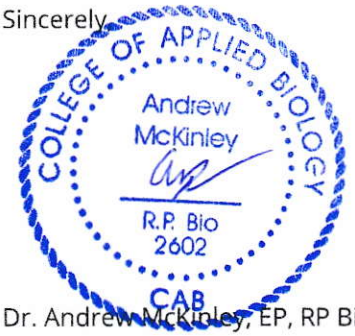
- **Climate Change Impacts:** Per the City of Ottawa (2023b) *Environmental Impact Study Guidelines,* the future Combined EIS & TCR reports must discuss the potential impacts of Climate Change based on the *Climate Projections for the National Capital Region* (City of Ottawa & NCC 2020). The design of the future Stormwater Management systems that will service the future developments, as well as the evaluation of natural hazards (e.g. floodplain, unstable slopes, etc.), must take into consideration the potential impacts and risks associated with a changing climate (City of Ottawa 2023b). The discussion of potential Climate Change impacts should be addressed by the future Combined EIS & TCR reports at the Draft Plan of Subdivision and/or Site Plan Application stage; and
- **Wildland Fire Risk Assessment:** The future Combined EIS & TCR reports must identify and describe any forest types associated with a high or extreme wildland fire risk within 100 meters of the future developments (e.g. any forest with >50% conifers) (OMNRF 2017b; City of Ottawa 2023b). If high or extreme fire risk forest communities are identified by the future Combined EIS & TCR reports, a follow-up Wildland Fire Risk Assessment will be required. If required, the Wildland Fire Risk Assessment must be completed by a Registered Professional Forester. The potential Wildland Fire Risk Assessment requirements should be addressed by the future Combined EIS & TCR reports at the Draft Plan of Subdivision and/or Site Plan Application stage.

# 5.0 CLOSURE

The recommendations and requirements identified in this Natural Environment Existing Conditions Report are intended to be further refined and confirmed during the future development of the South March Urban Expansion Area Community Design Plan and Environmental Management Plan (e.g. during the future Secondary Plan Process).

We trust that the above information is sufficient. Please do not hesitate to contact the undersigned if you have any questions or require further information.

Sincerely,




Dr. Andrew McKinley, EP, RP Bio.
Senior Biologist, McKinley Environmental Solutions



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# APPENDIX A

## Plant List


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# TABLE A: PLANT LIST

| Common Name | Scientific Name | Provincial S Rank | Brunton Significance Ranking for the City of Ottawa (Brunton 2005) | Vegetation Type |
|---|---|---|---|---|
| Common Cattail | Typha latifolia | S5 | Common | Aquatic |
| Tall Ironweed | Vernonia gigantea | S5 | Common | Aquatic |
| Lady Fern | Athyrium filix-femina | S5 | Common | Fern |
| Ostrich Fern | Matteuccia struthiopteris | S5 | Common | Fern |
| Sensitive Fern | Onoclea sensibilis | S5 | Common | Fern |
| Bracken Fern | Pteridium aquilinum | S5 | Common | Fern |
| Awnless Brome | Bromus inermis | SNA | Common | Grass |
| Brome Grass | Bromus sp. | N/A | Common | Grass |
| Orchard Grass | Dactylis glomerata | SNA | Common | Grass |
| Barnyard Grass | Echinochloa crusgalli | SNA | Common | Grass |
| Reed Canary Grass | Phalaris arundinacea | SE5 | Common (locally abundant introduction) | Grass |
| Timothy | Phleum pratense | SNA | Common | Grass |
| Reed | Phragmites australis | SE5 | Common (locally abundant introduction) | Grass |
| Meadow Grass | Poa sp. | N/A | Common | Grass |
| Green Foxtail | Setaria viridis | SNA | Common | Grass |
| Doll's Eyes | Actaea pachypoda | S5 | Common | Herbaceous |
| White Snakeroot | Ageratina altissima | S5 | Common | Herbaceous |
| Garlic Mustard | Alliaria petiolata | SNA | Common | Herbaceous |
| Wild Leek | Allium tricoccum | S4 | Uncommon | Herbaceous |
| Common Ragweed | Ambrosia artemisiifolia | S5 | Common | Herbaceous |
| Canada Anemone | Anemone canadensis | S5 | Common | Herbaceous |
| Wild Sarsaparilla | Aralia nudicaulis | S5 | Common | Herbaceous |
| Common Burdock | Arctium minus | SNA | Common | Herbaceous |
| Jack in the Pulpit | Arisaema triphyllum | S5 | Common | Herbaceous |
| Common Milkweed | Asclepias syriaca | S5 | Common | Herbaceous |
| Yellow Rocket | Barbarea vulgaris | SNA | Common | Herbaceous |
| Lamb's Quarters Pigweed | Chenopodium album | SNA | Common | Herbaceous |
| Chickory | Cichorium intybus | S5 | Common | Herbaceous |
| Canada Thistle | Cirsium arvense | S5 | Common | Herbaceous |

| | | | | |
|---|---|---|---|---|
| Bull Thistle | Cirsium vulgare | SNA | Common | Herbaceous |
| Queen Anne's Lace | Daucus carota | SNA | Common | Herbaceous |
| Viper's Bugloss | Echium vulgare | SNA | Common | Herbaceous |
| Daisy Fleabane | Erigeron annuus | S5 | Common | Herbaceous |
| Philadelphia Fleabane | Erigeron philadelphicus | S5 | Common | Herbaceous |
| Trout Lily | Erythronium americanum | S5 | Common | Herbaceous |
| Spotted Joe Pye Weed | Eutrochium maculatum | S5 | Common | Herbaceous |
| Common Strawberry | Fragaria virginiana | S5 | Common | Herbaceous |
| White Bedstraw | Galium mollugo | SNA | Common | Herbaceous |
| White Avens | Geum canadense | S5 | Common | Herbaceous |
| Orange Hawkweed | Hieracium aurantiacum | SNA | Common | Herbaceous |
| Yellow Hawkweed | Hieracium caespitosum | SNA | Common | Herbaceous |
| Common St. John's Wort | Hypericum perforatum | SNA | Common | Herbaceous |
| Spotted Touch Me Not | Impatiens capensis | S5 | Common | Herbaceous |
| Prickly Lettuce | Lactuca scariola | SNA | Common | Herbaceous |
| Ox-eye Daisy | Leucanthemum vulgare | SNA | Common | Herbaceous |
| Butter and Eggs | Linaria vulgaris | SNA | Common | Herbaceous |
| Bird's Foot Trefoil | Lotus corniculatus | SNA | Common | Herbaceous |
| Purple Loosestrife | Lythrum salicaria | SNA | Common (invasive) | Herbaceous |
| Canada Mayflower | Maianthemum canadense | S5 | Common | Herbaceous |
| False Solomon's Seal | Maianthemum racemosum | S5 | Common | Herbaceous |
| Pineappleweed | Matricaria discoidea | SNA | Common | Herbaceous |
| Black Medic | Medicago lupulina | SNA | Common | Herbaceous |
| White Sweet Clover | Melilotus albus | SNA | Common | Herbaceous |
| Wild Parsnip | Pastinaca sativa | SNA | Common | Herbaceous |
| Common Plantain | Plantago major | S5 | Common | Herbaceous |
| Sulphur Cinquefoil | Potentilla recta | SNA | Common | Herbaceous |
| Common Buttercup | Ranunculus acris | SNA | Common | Herbaceous |
| Black Eyed Susan | Rudbeckia hirta | SU | Common | Herbaceous |
| Curled Dock | Rumex crispus | SNA | Common | Herbaceous |
| Bladder Campion | Silene vulgaris | SNA | Common | Herbaceous |
| Wild Mustard | Sinapis arvensis | SNA | Common | Herbaceous |
| Bittersweet Nightshade | Solanum dulcamara | SNA | Common | Herbaceous |
| Canada Goldenrod | Solidago canadensis | S5 | Common | Herbaceous |

| | | | | |
|---|---|---|---|---|
| Sow Thistle | Sonchus arvensis | SNA | Common | Herbaceous |
| Tall White Aster | Symphyotrichum lanceolatum | SNR | Common | Herbaceous |
| New England Aster | Symphyotrichum novae-angliae | S5 | Common | Herbaceous |
| Dandelion | Taraxacum officinale | SNA | Common | Herbaceous |
| Poison Ivy | Toxicodendron rydbergii | S5 | Common | Herbaceous |
| Red Clover | Trifolium pratense | SNA | Common | Herbaceous |
| White Clover | Trifolium repens | SNA | Common | Herbaceous |
| White Trillium | Trillium grandiflorum | S5 | Common | Herbaceous |
| Colt's Foot | Tussilago farfara | SNA | Common | Herbaceous |
| Common Stinging Nettle | Urtica dioica | SNA | Common | Herbaceous |
| Common Mullein | Verbascum thapsus | SNA | Common | Herbaceous |
| Blue Vervain | Verbena hasta | S5 | Common | Herbaceous |
| Tufted Vetch | Vicia Cracca | SNA | Common | Herbaceous |
| Canada Violet | Viola canadensis | S5 | Common | Herbaceous |
| Downy Yellow Violet | Viola pubescens | S5 | Common | Herbaceous |
| Common Blue Violet | Viola sororia | S5 | Common | Herbaceous |
| Common Horsetail | Equisetum arvense | S5 | Common | Horsetail |
| Speckled Alder | Alnus incana | S5 | Common | Shrub |
| Alternate Leaved Dogwood | Cornus alternifolia | S5 | Common | Shrub |
| Red Osier Dogwood | Cornus sericea (stolonifesa) | S5 | Common | Shrub |
| Hawthorn | Crataegus chrysocarpa | S5 | Common | Shrub |
| Glossy Buckthorn | Frangula alnus | SNA | Common (aggressive invasive) | Shrub |
| Ground Juniper | Juniperus communis | S5 | Common | Shrub |
| Tartarian Honeysuckle | Lonicera tatarica | SNA | Common (aggressive invasive) | Shrub |
| Choke Cherry | Prunus virginiana | S5 | Common | Shrub |
| Common Buckthorn | Rhamnus cathartica | SNA | Common (aggressive invasive) | Shrub |
| Prickly Gooseberry | Ribes cynosbati | S5 | Common | Shrub |
| Skunk Currant | Ribes glandulosum | S5 | Common | Shrub |
| Wild Red Raspberry | Rubus idaeus | S5 | Common | Shrub |
| Purple Flowering Raspberry | Rubus odoratus | S5 | Common | Shrub |
| Bebb's Willow | Salix bebbiana | S5 | Common | Shrub |
| Slender Willow | Salix petiolaris | S5 | Common | Shrub |
| Red Elderberry | Sambucus racemosa | S5 | Common | Shrub |

| Lilac | Syringa vulgaris | SNA | Common | Shrub |
|---|---|---|---|---|
| Prickly Ash | Zanthoxylum americanum | S5 | Common | Shrub |
| Manitoba Maple | Acer negundo | S5 | Common | Tree |
| Red Maple | Acer rubrum | S5 | Common | Tree |
| Sugar Maple | Acer saccharum | S5 | Common | Tree |
| Yellow Birch | Betula alleghaniensis | S5 | Common | Tree |
| White Birch | Betula papyrifera | S5 | Common | Tree |
| Bitternut Hickory | Carya cordiformis | S5 | Common | Tree |
| American Beech | Fagus grandifolia | S4 | Common | Tree |
| ***Black Ash*** | ***Fraxinas nigra*** | ***S5*** | ***Endangered*** | ***Tree*** |
| White Ash | Fraxinus americana | S5 | Common | Tree |
| Green Ash | Fraxinus pennsylvanica | S5 | Common | Tree |
| Honey Locust | Gleditsia triacanthos | SNA | Uncommon | Tree |
| ***Butternut*** | ***Juglans cinerea*** | ***S3*** | ***Endangered*** | ***Tree*** |
| Black Walnut | Juglans nigra | S4 | Rare | Tree |
| Tamarack | Larix laricina | S5 | Common | Tree |
| Domestic Apple | Malus sylvestris | SNA | Common | Tree |
| Ironwood | Ostrya Virginiana | S5 | Common | Tree |
| Norway Spruce | Picea abies | SNA | Common | Tree |
| White Spruce | Picea glauca | S5 | Common | Tree |
| Red Pine | Pinus resinosa | S5 | Common | Tree |
| Eastern White Pine | Pinus strobus | S5 | Common | Tree |
| Large Tooth Aspen | Populus grandidentata | S5 | Common | Tree |
| Trembling Aspen | Populus tremuloides | S5 | Common | Tree |
| Black Cherry | Prunus serotina | S5 | Common | Tree |
| Bur Oak | Quercus macrocarpa | S5 | Common | Tree |
| Red Oak | Quercus rubra | S5 | Common | Tree |
| Staghorn Sumac | Rhus hirta | S5 | Common | Tree |
| Crack Willow | Salix fragilis | SNA | Common (invasive) | Tree |
| White Cedar | Thuja occidentalis | S5 | Common | Tree |
| American Basswood | Tilia americana | S5 | Common | Tree |
| American Elm | Ulmus americana | S5 | Common | Tree |
| Virgin's Bower | Clematis virginiana | S5 | Common | Vine |

| | | | | |
|---|---|---|---|---|
| Ground Ivy | Glechoma hederacea | SNA | Common | Vine |
| Virginia Creeper | Parthenocissus vitacea | S5 | Common | Vine |
| Riverbank Grape | Vitis riparia | S5 | Common | Vine |

**Provincial Ranks** (assigned by NHIC)

S5 = Very common within the province with > 1000 occurrences, populations or records
S4 = Common within the province with 21 - 1000 occurrences, populations or records
S3 = Rare within the province with 6 - 20 occurrences, populations or records
SNA = Ranking not available
SE5 = Very common exotic with > 1000 occurrences, populations or records within the province
S? = Unranked, or if followed by a ranking, temporarily assigned (eg. S4?)

# APPENDIX B

## Bird & Wildlife Species Lists



McKINLEY ENVIRONMENTAL SOLUTIONS
613-620-2255
mckinleyenvironmental@gmail.com
www.mckinleyenvironmental.com

| TABLE B: BIRD LIST | |
|---|---|
| **Common Name** | **Scientific Name** |
| Spotted Sandpiper | Actitis macularia |
| Red Winged Blackbird | Agelaius phoeniceus |
| Mallard | Anas fulvigula |
| Cedar Waxwing | Bombycilla cedrorum |
| Canada Goose | Branta canadensis |
| Red Tailed Hawk | Buteo jamaicensis |
| Northern Cardinal | Cardinalis cardinalis |
| Turkey Vulture | Cathartes aura |
| Veery | Catharus fuscescens |
| Killdeer | Charadrius vociferus |
| Northern Harrier | Circus cyaneus |
| Northern Flicker | Colaptes auratus |
| Rock Dove (Pigeon) | Columba livia |
| ***Eastern Wood Pewee - Special Concern*** | ***Contopus virens*** |
| American Crow | Corvus brachyrhynchos |
| Blue Jay | Cyanocitta cristata |
| ***Bobolink - Threatened*** | ***Dolichonyx oryzivorus*** |
| Pileated Woodpecker | Dryocopus pileatus |
| Gray Catbird | Dumetella carolinensis |
| Alder Flycatcher | Empidonax alnorum |
| American Kestrel | Falco sparverius |
| Common Yellowthroat | Geothlypis trichas |
| ***Barn Swallow - Special Concern*** | ***Hirundo rustica*** |
| ***Wood Thrush - Special Concern*** | ***Hylocichla mustelina*** |
| Baltimore Oriole | Icterus galbula |
| Dark Eyed Junco | Junco hyemalis |
| Ring Billed Gull | Larus delawarensis |

| | |
|---|---|
| Wild Turkey | Meleagris gallopavo |
| Song Sparrow | Melospiza melodia |
| Black and White Warbler | Mniotilta varia |
| Brown Headed Cowbird | Molothrus ater |
| House Sparrow | Passer domesticus |
| Savannah Sparrow | Passerculus sandwichensis |
| Rose Breasted Grosbeak | Pheucticus ludovicianus |
| Downy Woodpecker | Picoides pubescens |
| Hairy Woodpecker | Picoides villosus |
| Black Capped Chickadee | Poecile atricapilla |
| Common Grackle | Quiscalus quiscula |
| Eastern Phoebe | Sayornis phoebe |
| American Woodcock | Scolopax minor |
| Yellow Rumped Warbler | Setophaga coronata |
| Yellow Warbler | Setophaga petechia |
| American Redstart | Setophaga ruticilla |
| Eastern Bluebird | Sialia sialis |
| White Breasted Nuthatch | Sitta carolinensis |
| American Goldfinch | Spinus tristis |
| Chipping Sparrow | Spizella passerina |
| European Starling | Sturnus vulgaris |
| Tree Swallow | Tachycineta bicolor |
| Brown Thrasher | Toxostoma rufum |
| House Wren | Troglodytes aedon |
| American Robin | Turdus migratorius |
| Eastern Kingbird | Tyrannus tyrannus |
| Red Eyed Vireo | Vireo olivaceus |
| Mourning Dove | Zenaida macroura |
| White Crowned Sparrow | Zonotrichia leucophrys |

# TABLE C: WILDLIFE LIST

| Common Name | Scientific Name | Taxa Class |
|---|---|---|
| American Toad | Anaxyrus americanus | Amphibian |
| Grey Tree Frog | Hyla versicolor | Amphibian |
| Green Frog | Lithobates clamitans | Amphibian |
| Northern Leopard Frog | Lithobates pipiens | Amphibian |
| Wood Frog | Lithobates sylvaticus | Amphibian |
| Spring Peeper | Pseudacris crucifer | Amphibian |
| Coyote | Canis latrans | Mammal |
| Common Porcupine | Erethizon dorsatum | Mammal |
| Groundhog | Marmota monax | Mammal |
| White Tailed Deer | Odocoileus virginianus | Mammal |
| Common Raccoon | Procyon lotor | Mammal |
| Eastern Grey Squirrel | Sciurus carolinensis | Mammal |
| Red Squirrel | Sciurus vulgaris | Mammal |
| Eastern Cottontail | Sylvilagus floridanus | Mammal |
| Eastern Chipmunk | Tamias striatus | Mammal |
| Midland Painted Turtle | Chrysemys picta | Reptile |
| Common Garter Snake | Thamnophis sirtalis | Reptile |

# APPENDIX C

## Ontario Ministry of Natural Resources and Forestry (OMNRF) Species at Risk List for the Geographic Township of March



McKINLEY ENVIRONMENTAL SOLUTIONS
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| LONGUEUIL | MARCH | MARLBOROUGH |
|---|---|---|
| American Eel | American Eel | American Ginseng |
| American Ginseng | American Ginseng | Bald Eagle |
| Bank Swallow | Bald Eagle | Bank Swallow |
| Barn Swallow | Bank Swallow | Barn Swallow |
| Black Tern | Barn Swallow | Black Tern |
| Blanding's Turtle | Black Tern | Blanding's Turtle |
| Bobolink | Blanding's Turtle | Bobolink |
| Butternut | Bobolink | Bogbean Buckmoth |
| Canada Warbler | Butternut | Bridle Shiner |
| Channel Darter | Canada Warbler | Butternut |
| Chimney Swift | Chimney Swift | Chimney Swift |
| Common Nighthawk | Eastern Meadowlark | Common Nighthawk |
| Cutlip Minnow | Eastern Musk Turtle | Eastern Meadowlark |
| Eastern Meadowlark | Eastern Small-footed Myotis | Eastern Musk Turtle |
| Eastern Musk Turtle | Eastern Whip-poor-will | Eastern Prairie Fringed Orchid |
| Eastern Ribbonsnake | Eastern Wood-pewee | Eastern Small-footed Myotis |
| Eastern Small-footed Myotis | Hickorynut | Eastern Whip-poor-will |
| Eastern Wood Pewee | Horned Grebe | Eastern Wood-pewee |
| Evening Grosbeak | Lake Sturgeon | Grasshopper Sparrow |
| Golden Eagle | Least Bittern | King Rail |
| Hickorynut | Little Brown Myotis | Least Bittern |
| Lake Sturgeon | Loggerhead Shrike | Little Brown Myotis |
| Least Bittern | Monarch | Loggerhead Shrike |
| Little Brown Myotis | Northern Map Turtle | Monarch |
| Monarch | Northern Myotis | Northern Map Turtle |
| Northern Map Turtle | Peregrine Falcon | Northern Myotis |
| Northern Myotis | River Redhorse | Red-headed Woodpecker |
| River Redhorse | Rusty Blackbird | Snapping Turtle |
| Rusty Blackbird | Rusty-patched Bumble Bee | Spotted Turtle |
| Short-eared Owl | Silver Lamprey | Tri-colored Bat |
| Silver Lamprey | Snapping Turtle | Wood Thrush |
| Snapping Turtle | Transverse Lady Beetle | Yellow Rail |
| Spotted Turtle | Tri-colored Bat | |
| Tri-colored Bat | Wood Thrush | |
| West Virginia White | Yellow-banded Bumblebee | |
| Whip poor will | | |
| Wood Thrush | | |