

Consolidated Environmental Impact Statement

Prepared for

Ontari Holdings Ltd

February 13, 2026

Project No. P2024-849

Prepared by



GeoProcess Research Associates Inc.

133 King Street West
PO Box 65506 DUNDAS
Dundas, ON L9H 6Y6

Version History

Version	Date	Issue	Description	Author	Approved
V.1	February 13, 2026	FINAL	Consolidated Environmental Impact Statement	KG	KG

Executive Summary

Project Overview

GeoProcess Research Associates Inc. was retained by Ontari Holdings Ltd. to complete an Environmental Impact Statement (EIS) for a proposed commercial warehouse development at 140 Garner Road East, Hamilton, Ontario. The approximately 35-hectare Subject Property currently consists primarily of agricultural croplands but contains natural features, including a mature deciduous forest, a linear wetland, and a headwater tributary of Ancaster Creek.

Existing Conditions and Natural Heritage Features

Detailed field investigations conducted between 2015 and 2025 identified the following key natural heritage components:

- **Significant Woodland:** A mature Red Maple-Oak forest (FODM2-1) in the southwest corner is designated as a Significant Woodland and confirmed habitat for the Eastern Wood-Pewee, a species of Special Concern.
- **Wetlands:** An unevaluated 1.8-hectare wetland complex exists on the eastern portion of the site. Recent assessments show it is increasingly dominated by invasive Common Reed (*Phragmites australis*), which now covers approximately 60% of the area.
- **Species at Risk (SAR):** Confirmed sightings include Monarch butterflies and Eastern Wood-Pewee. A single Butternut tree on-site was determined to be a hybrid, and an American Chestnut previously identified has since died.
- **Hydrology and Hydrogeology:** A first-order headwater channel of Ancaster Creek flows through the wetland. The site is characterized by shallow groundwater within surficial sand deposits.

Proposed Development and Ecological Mitigation

The site plan proposes up to five commercial buildings, surface parking, and a Stormwater Management (SWM) facility. To accommodate development while meeting "no net loss" policy requirements, the project includes:

- **Wetland Relocation and Enhancement:** The existing 1.8-ha wetland will be relocated and enlarged to 2.8 hectares, achieving a 1.61 replacement ratio. The new design increases habitat complexity through deep pools, pit-and-mound microtopography, and diverse native plantings, nearly doubling the site's functional capacity.
- **Woodland Expansion:** The Significant Woodland will be preserved and buffered with a 15 m Vegetation Protection Zone (VPZ) and new open space blocks, increasing its total area on-site by approximately 63%.
- **Low Impact Development (LID):** Rooftop water harvesting, bioswales, and soakaway pits will maintain the hydrologic balance for the new wetland and enhance shallow groundwater recharge.

Impact Assessment and Conclusion

The EIS concludes that while the project involves the removal of a fragmented 0.8-ha northern woodland (WODM4-4) and the reconfiguration of the central wetland, these impacts are more than offset by the proposed restoration measures.

- **Residual Impacts:** With the implementation of seasonal timing windows for tree clearing, robust erosion controls, and wildlife exclusion fencing, residual negative impacts are expected to be minor and short-term.
- **Final Determination:** The proposed development will have no negative impact on the retained natural heritage features and is anticipated to result in a net ecological gain by improving biodiversity, controlling invasive species, and strengthening landscape connectivity for the wetland and FODM2-1 communities.

Monitoring and Adaptive Management

A comprehensive seven-year monitoring program will ensure the long-term success of the relocated wetland. This iterative approach enables management adjustments, such as invasive species removal or supplemental planting, based on annual effectiveness results.





Table of Contents

1. Introduction.....	1
1.1. Study Area.....	1
1.2. Regulatory and Advisory Agency Consultation.....	2
2. Policy Context.....	2
2.1. Land Use.....	3
2.1.1. Provincial Planning Statement (2024).....	3
2.1.2. Urban Hamilton Official Plan (2013).....	5
2.1.3. Rural Hamilton Official Plan (2012).....	11
2.1.4. City of Hamilton Woodland Conservation By-laws.....	11
2.1.5. O. Reg. 41/24 Prohibited Activities, Exemptions and Permits (2024).....	12
2.1.5.1. Hamilton Conservation Authority Planning and Regulation Policies and Guidelines (2011) and Interim Policy Guidelines for Ontario Regulation 41/24 (2024).....	12
2.2. Environment.....	14
2.2.1. Fisheries Act (1985).....	14
2.2.2. Endangered Species Act (2007).....	15
2.2.3. Migratory Birds Convention Act (1994).....	16
2.2.3.1. Migratory Bird Regulations (2022).....	16
3. Methodology.....	17
3.1. Background Review.....	17
3.2. Field Investigations.....	18
3.2.1. Vegetation Communities.....	19
3.2.2. Vascular Plant Species.....	19
3.2.3. Tree Inventory.....	20
3.2.4. Wetland Delineation.....	21
3.2.5. Woodland Delineation.....	22
3.2.6. Amphibian Surveys.....	22
3.2.7. Breeding Bird Surveys.....	23
3.2.8. Bat Maternity Roost Surveys.....	24
3.2.9. Wildlife Habitat Assessment.....	24
3.2.10. Incidental Wildlife Observations.....	24
3.2.11. Headwater Drainage Feature Assessment.....	24
3.2.12. Species at Risk Screening and Assessment.....	26
3.2.13. Significant Wildlife Habitat Assessment.....	26
3.3. Analysis of Significance and Sensitivity.....	26
4. Existing Conditions.....	27
4.1. General Overview of Site Conditions.....	27
4.2. Designated Natural Heritage Features.....	27
4.3. Physiography.....	27
4.4. Hydrology.....	28



4.4.1. Hydrogeology.....	28
4.4.2. Surface Water.....	29
4.4.3. Wetlands.....	29
4.5. Terrestrial Resources.....	30
4.5.1. Landscape Ecology	30
4.5.2. Vegetation Communities.....	30
4.5.3. Hedgerow Assessment.....	34
4.5.4. Vascular Plants.....	35
4.5.5. Tree Inventory.....	36
4.5.6. Amphibians.....	42
4.5.7. Breeding Birds.....	44
4.5.7.1. Stantec’s Breeding Bird Survey Results.....	44
4.5.7.2. GeoProcess’ Breeding Bird Survey Results	44
4.5.7.3. Breeding Bird Survey Assessment.....	46
4.5.8. Bat Maternity Colonies.....	48
4.5.8.1. GeoProcess’ Acoustic Monitoring Methods.....	50
4.5.8.2. GeoProcess’ Acoustic Monitoring Results	50
4.5.9. Species at Risk	50
4.5.10. Wildlife Habitat.....	51
4.5.10.1. Seasonal Concentration Areas.....	52
4.5.10.2. Rare or Specialized Habitat	52
4.5.10.3. Habitat for Species of Conservation Concern	52
4.5.10.4. Animal Movement Corridors.....	53
4.5.11. Incidental Wildlife Observations.....	54
4.6. Aquatic Resources.....	54
4.6.1. Headwater Drainage Feature.....	55
4.6.1.1. HDF Assessment Results.....	55
4.6.1.2. Management Recommendation.....	57
5. Species at Risk Screening.....	57
5.1. Species at Risk Long List.....	58
5.2. Species at Risk Assessment	59
5.2.1. Possibly Occurring Species.....	59
5.2.1.1. Eastern Milksnake (<i>Lampropeltis triangulum</i>).....	59
5.2.1.2. Midland Painted Turtle (<i>Chrysemys picta marginata</i>)	60
5.2.1.3. Species At Risk Bats.....	60
5.2.1.4. Snapping Turtle (<i>Chelydra serpentina</i>).....	60
5.2.2. Species with Confirmed Presence.....	61
5.2.2.1. American Chestnut (<i>Castanea dentata</i>)	61
5.2.2.2. Butternut (<i>Juglans cinerea</i>)	61
5.2.2.3. Eastern Wood-pewee (<i>Contopus virens</i>).....	61
5.2.2.4. Monarch (<i>Danaus plexippus</i>).....	62
6. Significant Natural Features and Policy Implications.....	62
6.1. Significant Wetlands	62
6.1.1. Provincially Significant Wetlands	62
6.1.2. Other Wetlands.....	62
6.1.2.1. Historical Wetland Review	63
6.1.2.2. Impacts of Common Reed (<i>Phragmites australis</i>).....	65



6.2. Significant Habitat for Endangered and Threatened Species	65
6.3. Fish Habitat.....	66
6.4. Significant Woodlands	66
6.4.1. Significant Woodland Evaluation	66
6.5. Significant Valleyland.....	68
6.6. Significant Wildlife Habitat	68
6.6.1. Bat Maternity Colonies.....	68
6.6.2. Field Observations of Special Concern and Rare Wildlife Species	68
6.6.2.1. Monarch Butterfly Significant Wildlife Habitat Assessment	69
6.7. Significant Areas of Natural and Scientific Interest.....	70
6.8. Linkage Assessment	70
6.9. Significant Natural Heritage Features Summary	74
7. Natural Hazards	74
8. Proposed Development.....	75
8.1. Wetland Realignment.....	75
8.1.1. Mitigation Sequence	76
8.1.2. Options Analysis	76
8.1.3. Offsetting Eligibility	78
8.2. Wetland Realignment Design.....	80
8.2.1. Design Objectives.....	81
8.2.2. Design Elements	81
8.2.2.1. Water Depths	81
8.2.2.2. Forested Swamp – Pit and Mound Features (0.25 to 0.5 m depth)	82
8.2.2.3. Emergent Marsh (0.5 m depth).....	83
8.2.2.4. Shallow Open Water Wetlands (1 m depth)	83
8.2.2.5. Wetland Outlet Channel	83
8.2.2.6. Thermal Mitigation	84
8.2.2.7. Habitat Features.....	84
8.2.3. Hydrologic Assessment of the Proposed Realigned Wetland	85
8.2.3.1. Modelling Results and Discussion	85
8.3. Stormwater Management.....	87
8.4. Infiltration.....	87
8.4.1. Water Balance - Infiltration.....	88
8.5. Wetland Sizing	88
8.5.1. Wetland Functional Capacity Modelling	88
8.5.1.1. Assessment Framework.....	88
8.5.1.2. Scoring Template.....	89
8.5.1.3. Variables and Sub-Indices - Hydrological.....	90
8.5.1.4. Variables and Sub-Indices - Ecological.....	90
8.5.1.5. Results.....	92
8.5.2. Adjusted Floristic Quality Index Analysis.....	93
8.5.2.1. Calculations and Results for the Existing Wetlands	93
8.5.2.2. Calculations and Results for the Proposed Wetlands	94
8.5.2.3. AFQI Interpretation.....	94
8.6. Vegetation Protection Zone.....	94
8.6.1. Vegetation Protection Zone Planting Structure	97
9. Impact Assessment.....	99



9.1. Value Component Impact Assessment.....99

9.2. Short-Term Impacts..... 115

9.3. Long-Term Impacts 116

9.4. Wetland Realignment..... 118

 9.4.1. Wildlife & Vegetation Clearing 119

 9.4.2. Wildlife Road Mortality 120

 9.4.3. Road Salts..... 120

9.5. FODM2-1 121

9.6. Cumulative Impacts..... 122

9.7. Climate Change Impacts..... 122

9.8. Impact Summary 123

10. Mitigation Measures 125

 10.1. Relocated Wetland Measures 125

 10.1.1. Vegetation..... 125

 10.1.1.1. Relocated Wetland Parameters..... 126

 10.1.2. Wildlife Fencing..... 128

 10.1.3. Preventing Salinity 130

 10.1.4. Waterfowl Prevention 131

 10.2. Natural Heritage System Measures 131

 10.2.1. Soil Preparation..... 132

 10.2.2. Planting Plan 132

 10.2.3. Stormwater Management Block..... 133

11. Monitoring & Adaptive Management Plan 133

 11.1. Adaptive Management Overview 134

 11.2. Detailed Program..... 137

 11.2.1. Step 1: Assess and Define the Problem 137

 11.2.2. Step 2: Design..... 138

 11.2.3. Step 3: Implementation..... 138

 11.2.4. Step 4: Monitoring 139

 11.2.5. Step 5: Evaluation of Results..... 141

 11.2.6. Step 6: Adjustment/Revision of Hypothesis & Management 141

12. Policy Conformity..... 141

13. Conclusion 149

14. References..... 150

List of Figures

Figure 1: HDF Classification Flow Chart from the TRCA's Evaluation, Classification and Management of Headwater Drainage Features Guidelines (2014)..... 56

Figure 2: Proposed buffer planting approach, two planting bands of trees, shrubs and herbaceous species 98

Figure 3: Reptile exclusion fencing diagram. Species side (outside) refers to the interior side of the created wetland. (MECP, Salt Alternatives on Interior Roadways) 129

Figure 4: Inward curve at ends of fence to direct animals away from exclusion area. (MECP, Salt Alternatives on Interior Roadways) 129

Figure 5: Example of a galvanized mesh fencing used for the long-term exclusion of snakes and turtles from the adjacent highway (Megan Bonenfant via MECP, n.d.) 130

Figure 6: Example of heavy-duty geotextile fence, without overhanging top, shown (MECP, n.d.)..... 130

Figure 7: Adaptive management cycle, from Murray and Marmorek (2004) 134



List of Tables

Table 1: Applicable Policies of the Provincial Planning Statement.....	4
Table 2: Relevant Minimum Vegetation Protection Zones, adapted from Section C.2.5.10 of the UHOP	6
Table 3: Applicable Policies of the UHOP Volume 1	6
Table 4: Applicable Policies of the UHOP Chapter B – AEGD Secondary Plan (OPA 35).....	10
Table 5: Ecological Field Work. As with the body text, items in grey were performed by Stantec	18
Table 6: Vascular Plant Survey Dates, Times, and Water Conditions	20
Table 7: Amphibian survey dates, times, and weather conditions.....	23
Table 8: Survey Dates, Times, and Weather – Breeding Birds.....	23
Table 9: Ecological Land Classification (ELC) Vegetation Types.....	30
Table 10: Stantec’s 2016 Amphibian Survey Results.	42
Table 11: Results of GeoProcess’s 2020 amphibian surveys. Survey locations use the same as for Stantec’s 2016 surveys.....	43
Table 12: Breeding bird survey conditions.....	45
Table 13: 2022 breeding bird survey results summary.....	45
Table 14: Habitat Suitability	46
Table 15: Stantec’s Bat Maternity Colony Assessment Summary.....	48
Table 16: Results of GeoProcess’s bat maternity roost surveys.....	48
Table 17: Species names and associated codes for the five bat species identified during acoustic analysis.....	50
Table 18: Incidental Wildlife (GeoProcess, 2025).....	54
Table 19: HDF Assessment Results.....	56
Table 20: Screening results.....	58
Table 21: Significant Woodland Assessment, this corresponds to Table 5.1 of Stantec (2018)	67
Table 22: Summary of Designated Linkages and Ecological Functions, Viability, and Integrity. Adapted from Stantec (2018).....	71
Table 23: Impacts on Linkages.....	73
Table 24: Mitigation Sequence for no net loss of wetlands	76
Table 25: Wetland options analysis under future development scenario.....	76
Table 26: Overview of the eligibility of the current wetland feature for offsetting.....	78
Table 27: Wetland Sizing Existing and Proposed	80
Table 28: Results of the various indices of the wetland functional capacity modelling.....	92
Table 29: Impact Assessment Table	100
Table 30: Short-Term Impacts.....	115
Table 31: Long Term Impact Assessment.....	116
Table 32: Recommended and Minimum Openness Ratios per Target Species Group*	120
Table 33: Ideal elements within each step of the AM cycle, from Greig et al. (2008).	136
Table 34: Proposed effectiveness monitoring.....	140
Table 35: Applicable Policies of the PPS and UHOP.....	142



List of Maps

- Map 1. Key Map
- Map 2. Land Use Policy and Regulated Areas
- Map 3. Natural Heritage System
- Map 4. Ecological Land Classification
- Map 5. Survey Locations
- Map 6. Species at Risk and Significant Wildlife Habitat Locations
- Map 7. Headwater Drainage Features
- Map 8. Site Plan
- Map 9. Proposed Natural Heritage System

List of Appendices

- Appendix A: Figures, Stantec (2018)
- Appendix B: Agency Correspondence (Stantec, 2018)
- Appendix C: Species at Risk Habitat Assessment (Stantec, 2018)
- Appendix D: Plant Species List, Stantec (2018)
- Appendix E: Wildlife Species List, Stantec (2018)
- Appendix F: Significant Wildlife Habitat Assessment (Stantec, 2018)
- Appendix G: Terms of Reference (GeoProcess, 2025)
- Appendix H: Tree Preservation Plan (GeoProcess, 2025)
- Appendix I: SAR Screening Sources (GeoProcess, 2025)
- Appendix J: Significant Wildlife Habitat Assessment (GeoProcess, 2025)
- Appendix K: Vascular Plant List (GeoProcess, 2025)
- Appendix L: Butternut Assessment (GeoProcess, 2025)
- Appendix M: Proposed Wetland Plan Drawing No. 1
- Appendix N: Hydrometric Flow Monitoring (GeoProcess, 2025)

1. Introduction



GeoProcess Research Associates Inc. (GeoProcess) was retained by Beedie to complete an Environmental Impact Statement (EIS) for a proposed commercial development at 140 Garner Road East in the City of Hamilton, Ontario. This is herein referred to as the "Subject Property".

The proposed commercial development includes multiple commercial buildings, surface parking lots, a Stormwater Management (SWM) facility, open space blocks, and a proposed wetland reconfiguration and enhancement. Work completed to date includes ecological data collected by Stantec Inc. (Stantec) and GeoProcess between 2015 and 2025. Both data sets and compiled information have been incorporated into this report.

GeoProcess previously prepared and submitted a consolidated EIS dated December 20, 2021. This EIS has been updated to include all recent data collected, review up-to-date legislation, and reflect the current site plan and permit application. It also intends to address comments set forth by the City of Hamilton and Hamilton Conservation Authority (HCA) on the December 20, 2021, report. A number of changes have been made to the site plan, including:

- The wetland block has been increased in size by almost 50%
- The stormwater pond has been moved closer to Garner Road
- The treed swamp community of the wetland has been retained
- The wetland outlet channel is retained, including its riparian habitat
- Two additional open space blocks have been added to the plan that equate to approximately 0.9 ha in additional area
- A landscape strip is provided along the southern property limit, which helps to strengthen the east/west linkage connection between the southwest and southeast woodlands

Additional studies that have been completed include:

- A hydrogeological investigation of the site, updating the original Stantec work, with a focus on the wetland and its surrounding area
- A hydrologic model of the existing and proposed wetland to assess pre- and post-development water balance conditions within the wetland

This EIS intends to define the natural heritage functions of the Subject Property, determine the applicability of the proposed wetland reconfiguration, the extent and treatment of the required setbacks, provide an appropriate development limit, and recommend mitigation measures to reduce or eliminate any predicted impacts to the natural heritage system. As mentioned, this EIS builds on a body of work completed by Stantec. All materials presented in grey highlights have been pulled directly and verbatim from Stantec's (2018) EIS for the Subject Property.

1.1. Study Area

The Subject Property is approximately 35 ha in size, it fronts onto Garner Road to the north, is bound by Highway 6 to the east, a hydro corridor to the south and a woodland/wetland complex to the west (Map 1).



The property is comprised primarily of agricultural croplands, with a number of natural heritage features including a wetland community in the northeast portion of the property, a cultural woodland in the northern portion of the property, a Significant Woodland extending into the southwest corner of the property and a woodland in the southeast corner of the property. The Study Area for this EIS includes the Subject Property plus all accessible lands within 120 meters of the Property.

An unevaluated wetland community and intermittent watercourse originate on the east and central portions of the Subject Property. The wetland feature is approximately 1.8 hectares (ha) in size and encompasses marsh and swamp communities that discharge into the headwater tributary of Ancaster Creek. Feature boundaries were previously delineated by Stantec and HCA on September 21, 2016. The Subject Lands are characterized by gently rolling topography that slopes towards the north and east, directing surface water towards the wetland and tributary of Ancaster Creek (R.J. Burnside and Associates, 2024).

1.2. Regulatory and Advisory Agency Consultation

A pre-consultation site visit was undertaken with Stantec, the City of Hamilton and Hamilton Conservation Authority (HCA) staff on September 10th, 2015, to review and discuss the natural heritage features identified within the Study Area and future submission requirements, including the Terms of Reference (ToR) for this EIS.

GeoProcess's contact with the City of Hamilton and HCA for the proposed development began in the spring of 2020. A presentation outlining the development proposal was prepared by Urban Solutions Planning and Land Development Consultants Inc., Whitehouse Design Group, and GeoProcess for the HCA board of directors on June 3, 2021, to review the details of the proposed wetland. Further correspondence has occurred with the City and HCA, including the submission of the Terms of Reference (ToR) dated December 7th, 2020, for completion of the initial consolidated EIS. Comments were provided by the City and HCA following the review of the ToR, which was subsequently revised and resubmitted in January 2021. A second HCA board meeting was held on June 3, 2021.

As HCA ultimately did not grant permission for the proposed development, specifically regarding relocation and realignment of the wetland and tributary of Ancaster Creek, an appeal was made by ONE Properties Limited Partnership to the Ontario Land Tribunal (OLT) under subsection 28(15) of the *Conservation Authorities Act* (OLT-21-001567). A proceeding was also initiated under subsection 51(34) of the *Planning Act* (OLT-21-001788) for the failure of the City of Hamilton to decide the outcome of the proposed development. The OLT was deferred and did not occur. Subsequently to the OLT deferral, the HCA permit was withdrawn by Beedie, the new property manager.

For this second submission additional an updated EIS ToR was submitted to the City on August 20th, 2025. This ToR is included in Appendix G. Formal acceptance of the updated ToR has not been provided by the City at the time of writing this EIS. A Settlement meeting was held between the City and the application team on October 15, 2025, to find a Site Plan acceptable to both parties.

2. Policy Context

Land use is regulated by various agencies given authority through legislation, including acts, regulations, and by-laws. These intergovernmental agencies establish and implement policy frameworks to govern their

respective jurisdictions as they relate to natural heritage, water, fisheries, urban/rural development, municipal infrastructure, and other environmental features. The policies in this section will cover the relevant statutes, regulations, policies, and plans governing development within the Study Area to provide an understanding of regulated features, prohibited activities, and development opportunities. Refer to Map 2 for the locations of different land use policy designations and regulated areas within the Study Area.

2.1. Land Use

Land use policies, plans, and regulations that govern development and related activities aim to guide the orderly disposition of land, prioritize public health and safety, support economic prosperity, and protect the quality of the natural and built environment. The following sections detail the land use policies and regulations applicable to the Study Area.

2.1.1. Provincial Planning Statement (2024)

The Provincial Planning Statement (PPS), 2024, is administered under Section 3 of the *Planning Act*. It became effective October 20, 2024, and replaces the Provincial Policy Statement that came into effect May 1, 2020. The PPS applies to planning decisions made on or after that date. It provides policy direction for land use and development within the Province of Ontario and provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment. The policies of the PPS may be complemented by provincial and municipal plans and policies.

The PPS defines eight natural heritage features and provides planning policies for each, listed below. The function of Natural Heritage Features and Areas is further clarified by the definition of a Natural Heritage System, which is “a system made up of natural heritage features and areas, and linkages intended to provide connectivity (at the regional or site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems.”

- Significant wetlands
- Coastal wetlands
- Fish habitat
- Significant woodlands
- Significant valleylands
- Habitat of endangered species and threatened species
- Significant Wildlife Habitat
- Significant Areas of Natural and Scientific Interest (ANSIs)

Sections 4.0 and 5.0 of the PPS deal with development and site alteration, and where these activities shall not be permitted. Section 4.0 policies surround the conservation of biodiversity, and protection of the health of the Great Lakes, natural heritage, water, agricultural, mineral and cultural heritage and archaeological resources for their economic, environmental, and social benefits. Section 5.0 directs development away from areas of natural or human-made hazards to mitigate risks to public health or safety, and property damage from natural hazards, including the risks that may be associated with the impacts of a changing climate.

Policies in Section 4.1 are particularly relevant as they surround development and site alteration in and adjacent to natural heritage features. These policies and select others are outlined below, in Table 1.

Table 1: Applicable Policies of the Provincial Planning Statement

Policy Number	Policy
2.9.1 d)	Planning authorities shall plan to reduce greenhouse gas emissions and prepare for the impacts of a changing climate through approaches that promote green infrastructure, low impact development, and active transportation, protect the environment and improve air quality.
(4.1 - Natural Heritage)	Natural features and areas shall be protected for the long term.
4.1.1	
4.1.2	The diversity and connectivity of natural features in an area and the long-term <i>ecological function</i> and biodiversity of <i>natural heritage systems</i> should be maintained, restored or where possible, improved, recognizing linkages between and among <i>natural heritage features and areas, surface water features and groundwater features</i> .
4.1.3	<i>Natural heritage systems</i> shall be identified in Ecoregions 6E & 7E, recognizing that <i>natural heritage systems</i> will vary in size and form in <i>settlement areas, rural areas, and prime agricultural areas</i> .
4.1.4	<i>Development and site alteration</i> shall not be permitted in: a) <i>significant wetlands</i> in Ecoregions 5E, 6E and 7E; and, b) <i>significant coastal wetlands</i> .
4.1.5	<i>Development and site alteration</i> shall not be permitted in: a) <i>significant wetlands</i> in the Canadian Shield north of Ecoregions 5E, 6E and 7E; b) <i>significant woodlands</i> in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Marys River); c) <i>significant valleylands</i> in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Marys River); d) <i>significant wildlife habitat</i> ; e) <i>significant areas of natural and scientific interest</i> ; and f) <i>coastal wetlands</i> in Ecoregions 5E, 6E and 7E that are not subject to policy 4.1.4(b) unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.
4.1.6	<i>Development and site alteration</i> shall not be permitted in <i>fish habitat</i> except in accordance with <i>provincial and federal requirements</i> .
4.1.7	<i>Development and site alteration</i> shall not be permitted in <i>habitat of endangered species and threatened species</i> , except in accordance with <i>provincial and federal requirements</i> .
4.1.8	<i>Development and site alteration</i> shall not be permitted on <i>adjacent lands</i> to the <i>natural heritage features and areas</i> identified in policies 4.1.4, 4.1.5 and 4.1.6 unless the <i>ecological function</i> of the <i>adjacent lands</i> has been evaluated and it has been demonstrated that there will be no <i>negative impacts</i> on the natural features or on their <i>ecological functions</i> .
(4.2 - Water)	<i>Development and site alteration</i> shall be restricted in or near <i>sensitive surface water features and sensitive ground water features</i> such that these features and their related <i>hydrologic functions</i> will be protected, improved or restored, which may require mitigative measures and/or alternative development approaches.
4.2.2	
(5.2 - Natural Hazards)	Planning authorities shall, in collaboration with conservation authorities where they exist, identify <i>hazardous lands</i> and <i>hazardous sites</i> and manage development in these areas, in accordance with provincial guidance.
5.2.1	
5.2.2	<i>Development</i> shall generally be directed to areas outside of: a) <i>hazardous lands</i> adjacent to the shorelines of the <i>Great Lakes - St. Lawrence River System</i> and <i>large inland lakes</i> which are impacted by <i>flooding hazards, erosion hazards and/or dynamic beach hazards</i> ; b) <i>hazardous</i>



Policy Number	Policy
	<i>lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards; and c) hazardous sites.</i>
5.2.4	Planning authorities shall prepare for the impacts of a changing climate that may increase the risk associated with natural hazards.

Policy conformity as it relates to the Study Area and proposed development is demonstrated throughout this EIS and assessed in Section 12 of this report.

2.1.2. Urban Hamilton Official Plan (2013)

The Urban Hamilton Official Plan (OP) came into effect on August 16, 2013, with the exception of select policies, schedules, maps, and appendices that remain under appeal. The Study Area is not included in these exceptions; therefore, the Natural Heritage policies of the 2013 OP apply to the Subject Property.

As per Schedules B, B-1 to B-8 of Volume 1 of the Urban Hamilton Official Plan (UHOP), the Natural Heritage System (NHS) within the Subject Property is comprised of Core Areas and Linkages that are associated with the tributary of Ancaster Creek and surrounding wooded areas.

Section C.2.5.2 of the OP states that new development and site alteration shall not be permitted within significant habitat of threatened and endangered species. According to Section C.2.5.3, new *development* and *site alteration* shall not be permitted within *fish habitat*, except in accordance with provincial and federal requirements.

Section C.2.5.4 outlines that *new development and site alteration* shall not be permitted within Significant Woodlands and significant wildlife habitat unless it has been demonstrated that there shall be no *negative impacts* on the natural features or on their *ecological functions*. In Chapter G of the OP, significant woodland designations are based on size, presence of interior forest, proximity to water or other significant natural areas, age and the presence of rare species, including species at risk. For the purposes of this report, significant wildlife habitat is based on the SWH Criteria Schedules for EcoRegion 7E (MNRF, 2015).

Section C.2.5.7 states that Streams are mapped in Schedule B- Natural Heritage System. Streams have been separated into two classes: Coldwater Watercourse/Critical Habitat and Warmwater Watercourse/Important/Marginal Habitat. If the stream has not been classified as part of an EIS, subwatershed study, or other study, a scoped EIS is required to determine the classification.

Vegetation protection zone widths greater or less than those specified in Section C.2.5.10 (summarized in Table 2 below) may be required if ecological features and functions warrant it, as determined through an approved Environmental Impact Statement. Widths shall be determined on a site-specific basis, by considering factors such as the sensitivity of the habitat, the potential impacts of the proposed land use, the intended function of the vegetation protection zone, and the physiography of the site. (Section C.2.5.11)



Table 2: Relevant Minimum Vegetation Protection Zones, adapted from Section C.2.5.10 of the UHOP

Natural Heritage Feature	Minimum Vegetation Protection Zone (VPZ)
Warmwater Watercourses	15 metres on each side of the water course, measured from bankfull channel
Unevaluated wetlands and locally significant wetlands	15 metres, measured from wetland boundary
Woodlands	10 metres, measured from the woodland dripline
Significant Woodlands	15 metres, measured from the woodland dripline
Significant Habitat of Threatened or Endangered Species and Significant Wildlife Habitat	To be determined through Environmental Impact Statements, dependent on the sensitivity of the feature.

Linkages are defined in the UHOP as natural areas within the landscape that ecologically connect Core Areas. Section C2.7.1 encourages the connection of Core Areas within the municipality and adjacent to its municipal boundaries through the identification of Linkages in EISs. A Linkage Assessment following the City of Hamilton Linkage Assessment (LA) Guidelines (March 2015) is required for new development or site alteration proposed within a Linkage. According to section C.2.7.6, Linkage Assessments shall include the following:

- a) identify and assess the Linkage including its vegetative, wildlife, and/or landscape features or functions.
- b) assess the potential impacts on the viability and integrity of the Linkage as a result of the development proposal.
- c) make recommendations on how to protect, enhance or mitigate impacts on the Linkage(s) and its functions through planning, design and construction practices.

The following policies apply to the proposed development within the Study Area and are assessed throughout this EIS.

Table 3: Applicable Policies of the UHOP Volume 1

Policy Number	Policy
(C.2.0 – Natural Heritage System) C.2.2.2	The boundaries of Core Areas and Linkages, shown on Schedule B - Natural Heritage System, are general in nature. Minor refinements to such boundaries may occur through Environmental Impact Statements, watershed studies or other appropriate studies accepted by the City without an amendment to this Plan. Major changes to boundaries, the removal or addition of Core Areas and Linkages identified on Schedule B - Natural Heritage System and Schedules B-1-8 – Detailed Natural Heritage Features require an amendment to this Plan.
C.2.3	It is the intent of this policy to preserve and enhance Core Areas and to ensure that any development or site alteration within or adjacent to them shall not negatively impact their natural features or their ecological functions.
C.2.3.3	The natural features and ecological functions of Core Areas shall be protected and where possible and deemed feasible to the satisfaction of the City enhanced. To accomplish this protection and enhancement, vegetation removal and encroachment into Core Areas shall generally not be permitted, and appropriate vegetation protection zones shall be applied to all Core Areas.



Policy Number	Policy
C.2.5.4	New development and site alteration shall not be permitted within significant woodlands, significant valleylands, significant wildlife habitat and significant areas of natural and scientific interest unless it has been demonstrated that there shall be no negative impacts on the natural features or on their ecological functions.
C.2.5.5	New development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in Section C.2.5.2 to C.2.5.4 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there shall be no negative impacts on the natural features or on their ecological functions.
C.2.5.8	New development or site alteration subject to Policies C.2.5.3 to C.2.5.7 requires, prior to approval, the submission and approval of an Environmental Impact Statement which demonstrates to the satisfaction of the City and the relevant Conservation Authority that: a) There shall be no negative impacts on the Core Area’s natural features or their ecological functions. b) Connectivity between Core Areas shall be maintained, or where possible, enhanced for the movement of surface and ground water, plants and wildlife across the landscape. c) The removal of other natural features shall be avoided or minimized by the planning and design of the proposed use or site alteration wherever possible.
C.2.5.9	An Environmental Impact Statement shall propose a vegetation protection zone which: a) has sufficient width to protect the Core Area and its ecological functions from impacts of the proposed land use or site alteration occurring during and after construction, and where possible and deemed feasible to the satisfaction of the City, restores or enhances the Core Area and/or its ecological functions; and b) is established to achieve, and be maintained as natural self-sustaining vegetation.
C.2.5.10	<p>Where vegetation protection zone widths have not been specified by watershed and sub-watershed plans, secondary plans, Environmental assessments and other studies, the following vegetation protection zone widths shall be evaluated and addressed by Environmental Impact Statements. Other agencies, such as Conservation Authorities, may have different vegetation protection zone requirements. (OPA 218)</p> <ul style="list-style-type: none"> a) Coldwater Watercourse and Critical Habitat – 30-metre vegetation protection zone on each side of the watercourse, measured from the bankfull channel. b) Warmwater Watercourse and Important and Marginal Habitat – 15 metre vegetation protection zone on each side of the watercourse, measured from the bankfull channel. c) Provincially Significant Wetlands – 30-metre vegetation protection zone, measured from the boundary of the wetland, as approved by the Conservation Authority or Ministry of Natural Resources. d) Unevaluated wetlands – Unevaluated wetlands and locally significant wetlands require a 15 metre vegetation protection zone, measured from the boundary of the wetland, as approved by the Conservation Authority or Ministry of Natural Resources, unless an Environmental Impact Statement recommends a more appropriate vegetation protection zone. e) Woodlands – 10-metre vegetation protection zone, measured from the edge (drip line) of the woodland. f) Significant woodlands – 15-metre vegetation protection zone, measured from the edge (drip line) of the significant woodland. g) Areas of Natural and Scientific Interest (ANSIs) – Life and Earth Science ANSIs require a 15-metre vegetation protection zone. h) Significant Valleylands – As required by the relevant Conservation Authority. i) Significant Habitat of Threatened or Endangered Species and Significant Wildlife Habitat: the minimum vegetation protection zone shall be determined through Environmental Impact Statements, dependent on the sensitivity of the feature.



Policy Number	Policy
C.2.5.12	Permitted uses within a vegetation protection zone shall be dependent on the sensitivity of the feature, and determined through approved studies. Generally, permitted uses within a vegetation protection zone shall be limited to low impact uses, such as vegetation restoration, resource management, and open space. Permitted uses within the vegetation protection zone shall be the same uses as those within the Core Area in Policy C.2.5.1, and the vegetation protection zone should remain in or be returned to a natural state.
C.2.5.13	All plantings within vegetation protection zones shall use only non-invasive plant species native to Hamilton. The City may require that applicants for development or site alteration develop a restoration or management plan for the vegetation protection zone as a condition of approval.
C.2.11.1	The City recognizes the importance of trees and woodlands to the health and quality of life in our community. The City shall encourage sustainable forestry practices and the protection and restoration of trees and forests.
(C.4.8 – Airport) C.4.8.4	The City shall maintain Noise Exposure Forecast (NEF) contours and the Primary Airport Zoning Regulation, as amended from time to time, and formulate guidelines for development in the vicinity of John C. Munro International Airport.
C.4.8.5	The City shall minimize future conflicts between operation of the Airport and surrounding land uses to ensure: a) there shall be no negative impact on the long-term operations of the Airport; b) the opportunities for expansion of airport operations shall not be limited; and, c) there are no land uses in the vicinity which may cause a potential aviation hazard. d) development that is noise or land use sensitive to airport operations or will limit the opportunities for expansion of airport operations shall be restricted.
C.4.8.7	All development and redevelopment shall comply with all provincial and municipal standards, criteria and guidelines regarding noise and vibration from air traffic sources, including Section B.3.6.3 – Noise, Vibration and Other Emissions.
(F.3.2.1 – Environmental Impact Statements (EIS)) F.3.2.1.1	Council has adopted Environmental Impact Statement Guidelines, which shall be used by proponents and professionals when preparing an EIS. The City shall revise the Environmental Impact Statement Guidelines from time to time.
F.3.2.1.2	When a development proposal has the potential to negatively impact a Core Area’s natural features or their ecological functions, the proponent shall be required to prepare an EIS to the satisfaction of the City in consultation with the relevant Conservation Authority. An EIS inventories and describes the existing Core Areas and ecological functions of the site in the context of the surrounding landscape. An EIS also assesses the potential negative impacts that proposed development may have on Core Areas and Linkages and provides recommendations on natural area boundaries, mitigation measures, and design measures to accommodate or enhance existing natural features and functions.

2.1.2.1. Airport Employment Growth District Secondary Plan

The Airport Employment Growth District (AEGD) is comprised of a planned development area of 551 net developable hectares of employment land. The Secondary Plan area extends from Garner Road East and Twenty Road West to the north, Upper James Street to the east, Whitechurch Road West to the south, and Fiddler’s Green Road to the west. This area is meant to provide for a major business park development that will integrate with and complement the John C. Munro International Airport.



The AEGD Secondary Plan was approved by the Ontario Municipal Board (OMB) on February 17, 2015. The AEGD Secondary Plan is included within Volume 2 of the UHOP. Per Map B.8-2: Natural Heritage System, an unclassified stream has been identified for the Subject Property. Linkages identified on Schedule B of the UHOP are not listed on Map B.8-2 of the secondary plan. The AEGD mapping does not identify any Core Area features on the Subject Property and does not map the wetland or woodlands as features to be retained.

The Natural Heritage principles of the Plan (Section 8.2.11) are as follows:

8.2.11 Through sustainable design and appropriate development the employment district protects and enhances the natural environment. The intent is to:

- a) Develop in a manner that is sensitive to the natural environment;*
- b) Use innovative, sustainable storm and wastewater infrastructure to protect water quality and source water;*
- c) Protect and integrate provincially and municipally significant natural features, such as streams, valley lands, wetlands, mature trees and forests into the employment district's development, implement provincial policy and meet municipal policy;*
- d) Use sustainable design to limit the emissions, water and energy consumption of buildings within the employment district; and,*
- e) Connect the employment district's open space system to surrounding natural areas to allow employees to enjoy and explore the region's natural heritage.*

The Secondary Plan is accompanied by Eco-Industrial Guidelines by Dillon Consulting (May 2010), which are aimed to improve individual and social well-being, enhance and protect the environment, reduce development's carbon footprint, and improve economic vitality. These guidelines surround designing with nature. As part of these guidelines, and due to the proximity to the John C. Munro Airport, dry stormwater management ponds are required.

The AEGD Subwatershed Study & Stormwater Master Plan (SWMP) Implementation Document by Aquafor Beech Ltd (2017) further discusses air travel safety in relation to stormwater management. This document references compliance with the *Transport Canada document TP 1247 – Land Use in the Vicinity of Aerodomes* when discouraging the use of wet stormwater ponds. Given that wetland relocation is proposed, it is important to note that this Transport Canada document defines "Natural Habitats" as being a "potentially limited" risk and having land use acceptability within all aerodome zones. Marshes, swamps & mudflats have a "potentially low" risk and have land use acceptability in all but primary hazard zones, which are the areas where aircraft are at or below altitudes of 1500 feet above ground level. These features do have land use acceptability in secondary hazard zones, which are 4 km beyond the primary hazard zone. It is important to note that according to Transport Canada, land-use acceptability is site sensitive and can only be determined through detailed assessments of each aerodome and its surroundings.

In addition, waterfowl feeding stations have a "potentially high" level of risk, don't have land-use acceptability in any aerodome zones, and should not be included in the proposed wetland design. Aside from excluding these structures, mitigation measures can prevent waterfowl proliferation in the proposed wetland. This includes adding dense plantings of trees and shrubs on the periphery that will provide a visual screen and limit the availability of suitable forage vegetation. Mitigation measures to prevent attracting waterfowl to the proposed wetland are further outlined in Section 10.1.4.

Table 4: Applicable Policies of the UHOP Chapter B – AEGD Secondary Plan (OPA 35)

Policy Number	Policy
B.8.2.2	<p>The employment district is vibrant and visually appealing. It is a working community with a unique sense of place derived from a strong connection to its natural setting and the existing airport. The intent is to:</p> <ul style="list-style-type: none"> a) Balance a high intensity of use with large conserved natural areas; b) Design with nature by protecting streams, mature trees, wetlands, significant habitat and integrating topography into developments; c) Integrate the open space system with the Greenbelt and other natural areas; d) Support mixed employment use and ancillary convenience amenities supporting employment, such as convenience stores, medical offices, fitness centres, personal services, restaurants and hotels; and e) Encourage a distinct character for the district (e.g. airport or natural heritage theme).
B.8.3.2	<ul style="list-style-type: none"> a) All development shall conform to the airport policies of Section C.4.8 of Volume 1.
B.8.2.11 (Natural Heritage Principles)	<p>Through sustainable design and appropriate development the employment district protects and enhances the natural environment. The intent is to:</p> <ul style="list-style-type: none"> a) Develop in a manner that is sensitive to the natural environment; b) Use innovative, sustainable storm and wastewater infrastructure to protect water quality and source water; c) Protect and integrate provincially and municipally significant natural features, such as streams, valley lands, wetlands, mature trees and forests into the employment district's development, implement provincial policy and meet municipal policy; d) Use sustainable design to limit the emissions, water and energy consumption of buildings within the employment district; and, e) Connect the employment district's open space system to surrounding natural areas to allow employees to enjoy and explore the region's natural heritage.
B.8.9	<p>An integral component during the creation of this Secondary Plan was the preparation of the Subwatershed Plan for the watersheds within the Secondary Plan Area. Lands within the Airport Employment Growth District are uniquely situated within the headwaters of four watersheds, Sulphur Creek (Cootes Paradise), Twenty Mile Creek (Lake Ontario), Welland River (Niagara River) and Big Creek (Grand River). The myriad of small headwater features, combined with restrictions on open water/wetland features imposed by the airport, present a unique challenge in terms of protection of stream corridors and natural heritage features, and stormwater management design that require state of art technologies consistent with Low Impact Development design.</p>
B.8.9.3	<p>The stream corridors in the Subwatershed Plan for the Secondary Plan Area shall be protected in accordance with Section B.8.12 of this Secondary Plan to address flood/erosion control and fish habitat requirements, as well as storm water management to prevent increases in flooding and erosion, enhance water quality and maintain the existing conditions of water balance.</p>
B.8.12.1	<p>Within the Airport Employment Growth District, there are wetlands, streams, woodlands, meadows, successional areas and hedgerows which are identified as Core Areas, Linkages, and Hedgerows in Map B.8-2 – Airport Employment Growth District Natural Heritage System. The policies of Volume 1 Section C.2.0 – Natural Heritage System apply, with the exception of Section C.2.4.</p>
B.8.12.2	<p><i>Streams are identified in Map B.8-2 – Airport Employment Growth District Natural Heritage System. If the stream has not been classified as part of an Environmental Impact Study, subwatershed study, or other study, a scoped Environmental Impact Study is required to determine the classification.</i></p>



2.1.3. Rural Hamilton Official Plan (2012)

Schedule B of the 2012 Rural Hamilton Official Plan (OP) identifies significant natural heritage features across the rural Hamilton area including Detailed Natural Heritage Features, Key Natural Heritage Features and Significant Woodlands.

Although the Subject Property is outside of the Rural Hamilton OP boundary, lands directly west and south of the Subject Property are included in the Rural Hamilton OP. According to Schedule B of the Rural Hamilton OP, the adjacent lands to the south of the Subject Property include linkages.

2.1.4. City of Hamilton Woodland Conservation By-laws

Woodland Conservation By-law 14-212

The intent of the Woodland Conservation By-law (By-Law #14-212 approved August 15, 2014) is to promote the conservation of woodlands that occur on private property within Urban Hamilton. This by-law applies to woodlands greater than or equal to 0.2 ha in size. Woodlands are classified using the definition from the Forestry Act R. S. O. 1990, Chapter F.26, as follows: "woodlands" means land with at least,

- a) 1,000 trees, of any size, per hectare,
- b) 750 trees, measuring over five centimetres in diameter, per hectare,
- c) 500 trees, measuring over 12 centimetres in diameter, per hectare, or
- d) 250 trees, measuring over 20 centimetres in diameter, per hectare,

but does not include a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas trees.

The draft by-law does not include a narrow linear strip of trees that defines a laneway or a boundary between fields, or a plantation established or continuously managed for the sole purpose of complete removal at rotation in accordance with a Forest Management Prescription.

Within this draft by-law, an owner may injure or destroy a tree in their woodland, or permit the injury or destruction of their tree in a woodland, provided that they comply with a permit obtained from the Director of By-law and Parking Services. A permit application form will be required to be submitted to the Director, and the Director may require a Forest Management Prescription to be prepared prior to approving the permit. Where a permit is issued, the Director may impose conditions, including the requirement of replacement trees to be planted.

Woodland Conservation By-law 23-088

The Woodland Conservation By-law 23-088 amends By-Law 14-212 and intends to promote the conservation and sustainable use of woodlands on private property within the urban boundary of the City of Hamilton. The pertinent provisions of this By-law are considered as a part of this EIS.

2.1.5. O. Reg. 41/24 Prohibited Activities, Exemptions and Permits (2024)

Ontario Regulation 41/24 (effective April 1, 2024), issued under the *Conservation Authorities Act* (CA Act), replaced all 36 individual Conservation Authority regulations with a single, province-wide regulation. This regulation emphasizes public safety and removes the "pollution" and "conservation of land" tests for permitting. Conservation Authorities may grant permission for development if, in their opinion, the proposal will not affect flood control, erosion, dynamic beaches, or unstable soil/bedrock, and will not create conditions that could jeopardize health, safety, or property in the event of a natural hazard.

Section 28(1) of the CA Act prohibits the following activities within a Conservation Authority's jurisdiction:

- (1) the alteration of watercourses or wetlands, and
- (2) development within hazardous lands, wetlands, river/stream valleys, Great Lakes/inland lake shorelines subject to flooding/erosion/dynamic beach hazards, and other areas designated by regulation.

The Subject Property is within Hamilton Conservation Authority (HCA) jurisdiction. The eastern portion of the Subject Property contains HCA regulated areas, and development activities are subject to regulatory approval.

2.1.5.1. Hamilton Conservation Authority Planning and Regulation Policies and Guidelines (2011) and Interim Policy Guidelines for Ontario Regulation 41/24 (2024)

The Hamilton Conservation Authority Planning and Regulation Policies and Guidelines 2011, supported by the Interim Policy Guidelines for Ontario Regulation 41/24 2024, outlines specific HCA policies applicable to the regulated area within the Subject Property and is in effect pending amendments based on the new regulatory framework passed through O. reg. 41/24. Where discrepancies exist between the new regulation O. Reg. 41/24, the HCA Planning and Regulation Policies and Guidelines 2011, and the Interim Policy Guidelines 2024 (IPG), O. Reg. 41/24 prevails.

The two HCA-regulated features within the Subject Property are the non-provincially significant wetland and the Ancaster Creek headwater tributary coursing through the wetland. This section will outline the HCA policies applicable to the property, including those regarding river systems and wetlands.

Wetlands

It is the HCA's policy that development activity within wetlands and within 30 m of wetlands, as well as interference within wetlands is prohibited (IPG 5.6.2.1a). The boundary of a wetland must be established in consultation with the HCA (IPG 5.6.2.1b).

The Interim Policy Guidelines for Ontario Regulation (IPG) policy 5.6.2.2a states that development activity and interference within wetlands may be permitted if demonstrated that:

1. The wetland is not located within the Greenbelt Plan.
2. It is not located within a floodplain.

3. Development/interference outside the wetland has been examined and no reasonable alternative exists.
4. *The hydrologic functions and features of the wetland have been assessed, and there would be no adverse impacts on functions or features that support the control or mitigation of flooding or erosion hazards.*
5. *Hazards related to unstable soils (organic soils) or bedrock are addressed.*
6. *There would be no increase in hazard related risks to public health and safety or property.*
7. *Mitigation measures will be implemented to minimize impacts on the wetland's hydrologic functions, and to restore or replace hydrologic functions to the greatest extent possible.*
8. The general policies of Section 5.2 are addressed.

HCA may require a Hydrological Study or Water Balance Assessment to evaluate the potential impacts of any proposed development activity or interference within a wetland or development activity within 30 m of a wetland (IPG 5.6.2.1c).

Watercourses

Interference with a river, creek, stream or watercourse is prohibited, except in accordance with the policies of Section 5.5.2 – Policies for Interference with Watercourses, and Section 5.2 – General Policies (IPG 5.5.2a). According to the current HCA 2011 guideline, for all warmwater watercourses, the CA requires a minimum VPZ of 15 m on each side of the channel (2.1.3h (i)).

It is the policy of the CA that *the quality and quantity of water within watercourses shall be protected, improved or restored by minimizing potential negative impacts* (2.1.3f). The CA requires that alterations to watercourse have consideration for the following (2.1.3c):

- Maintenance of the watercourse system topography, flood conveyance and flood storage.
- *No adverse impacts upstream and/or downstream of the proposed works in respect to fluvial geomorphological processes, storage capacity of the flood plain, flood plain elevations, flood frequency, erosion rates or erosion frequency along either side of the watercourse.*
- *No adverse impacts on ground water features and recharge/discharge.*
- *Adequate erosion and sediment control measures are incorporated and utilized during the construction phase.*

It is the HCA's policy that the following are demonstrated where development is considered in hazardous lands (IPG Policy 4.3.1o):

- Risks to public health and safety are minor and can be mitigated in accordance with provincial standards, including protection works standards and access standards.
- Safe access for people and vehicles would be available.
- New hazards are not created, and existing hazards are not aggravated.

It is the policy of HCA that the completion of technical studies and plans, including an erosion and sediment control plan may be required to support the development (IPG 5.2h).

Stormwater Management

HCA's policies for stormwater management are detailed in section 4.5.1 of the Interim Policy Guidelines (IPG) and include the following:

- *HCA comments on development proposals will seek to prevent increases in flooding and erosion resulting from stormwater (IPG 4.5.1g).*
- *HCA recommends the use of low impact development (LID) measures, green infrastructure, conveyance controls, and other sustainable technologies in a treatment train approach (IPG 4.5.1j).*
- *HCA will generally not support SWM ponds in hazardous lands, on-line with a watercourse, or in or near sensitive surface water features or sensitive groundwater features (IPG 4.5.1k).*
- *When reviewing SWM plans, HCA will generally recommend to maintain pre-development conditions as part of site development (i.e. pre- to post-), including flows from the 2-year storm event up to the 100-year storm event (IPG 4.5.1m).*

2.2. Environment

The statutes and regulations in this section generally aim to protect wildlife and aquatic species that are sensitive or susceptible to land use and development activities, which may cause detriment to the natural environment, its systems, and functions.

2.2.1. Fisheries Act (1985)

The Fisheries Act is a federal legislation which aims to manage and protect Canada's aquatic ecosystem, including fish and fish habitat. The federal Department of Fisheries and Oceans Canada (DFO) is the enforcing agency regulating land use and related activities under the Fisheries Act (1985). Where aquatic species may be present, especially species of special concern, activities near or in water must be permitted by the DFO. The Act protects fish and fish habitat such that:

"No person shall carry on any work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat" (Section 35 (1)).

Fish habitat is defined by the Act as "water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas".

The Fisheries Act requires that any development project avoid Harmful Alteration, Disruption, or Destruction (HADD) of fish habitat unless authorized by Fisheries and Oceans Canada (DFO). If mitigation measures cannot be applied, and residual effects will cause HADD, then provisions under the Act may apply (i.e., approval(s) may need to be secured through DFO) to any waterbody or watercourse that contains fish or any other area on which fish depend directly or indirectly to carry out their life processes, as described in the Fisheries Act, is provided protection under the Act.

The act also provides tools to address habitat restoration and sustainable fisheries decision making, helping to repair past harm to habitat and help fish populations recover from factors like climate change, economic pressures, environmental conditions, and damage and loss of habitat.

In addition, the DFO Standard and Codes of Practice are guidance documents that outline the best practices for avoiding harmful impacts on fish and their habitat. If the project is taking place in or near water, the proponent is responsible for:

- Understanding the impacts the project will likely have on fish and fish habitats.
- Taking measures to avoid and mitigate impacts on fish and fish habitats.
- Requesting authorization from the Minister and abiding by the conditions of the authorization when it is not possible to avoid and mitigate project impacts on fish and fish habitat.
- Ensuring compliance with all statutory instruments, including federal and provincial legislation.

2.2.2. Endangered Species Act (2007)

The Endangered Species Act (ESA) (2007) was amended on June 5, 2025, through the passing of Bill 5 and is to be replaced with the Species Conservation Act, 2025, at a later date. The purpose of the ESA (2007) is to provide protection and conservation to species at risk while considering social and economic factors for sustainable economic growth in Ontario. The protected species and their habitat are designated by the Committee on the Status of Species at Risk in Ontario (COSSARO) as endangered, threatened, extirpated, or of special concern, and the Government of Ontario adds species to the protection list based on COSSARO recommendations. These designations are defined as:

Endangered: A species shall be classified as an endangered species if it lives in the wild in Ontario but is facing imminent extinction or extirpation.

Threatened: A species shall be classified as a threatened species if it lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening to lead to its extinction or extirpation.

Extirpated: A species shall be classified as an extirpated species if it lives somewhere in the world, lived at one time in the wild in Ontario, but no longer lives in the wild in Ontario.

Under the amended ESA, for the purposes of protection under the Act, habitat does not include places where the species formerly occurred or has the potential to be reintroduced unless existing members of the species depend on that area. The ESA defines habitat as the following:

For animal species: habitat is a dwelling place that is occupied or habitually occupied for breeding, rearing, staging, wintering or hibernating, and the area immediately around a dwelling place.

For vascular plant species: habitat is the surrounding critical root zone.

For all other species: habitat is an area on which any member of a species directly depends in order to carry on its life processes.

The ESA (Subsection 9(1)) outlines the prohibitions regarding harm to species and states that:

“No person shall,

- (a) kill, harm, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species;*
- (b) possess, transport, collect, buy, sell, lease, trade or offer to buy, sell, lease or trade,*
 - (i) a living or dead member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species,*
 - (ii) any part of a living or dead member of a species referred to in subclause (i),*
 - (iii) anything derived from a living or dead member of a species referred to in subclause (i); or*
- (c) sell, lease, trade or offer to sell, lease or trade anything that the person represents to be a thing described in subclause (b) (i), (ii) or (iii).”*

Clause 10 (1)(a) of the ESA also states that:

“No person shall damage or destroy the habitat of

- a species that is listed on the Species at Risk in Ontario list as an endangered or threatened species.
- a species that is listed on the Species at Risk in Ontario List as an extirpated species, if the species is prescribed by the regulations for the purpose of this clause. 2007, c. 6, s. 10 (1).”

Prior authorization or issuance of permit from the MECP and/or the Ministry of Natural Resources (MNR) is required to carry out activities that would otherwise be prohibited or regulated under the ESA unless exempt under Ontario Regulation 242/08.

2.2.3. Migratory Birds Convention Act (1994)

The *Migratory Birds Convention Act* (1994) serves to protect and conserve migratory birds, their nests and eggs in Canada. It is prohibited under the MBCA to damage, destroy, disturb or remove the nest of a migratory bird that contains a live bird or viable egg. However, a permit may be issued under the MBCA for various activities with conditions for the husbandry, release, scaring, capture, killing or disposal of migratory birds. The removal of existing trees on the Property will be subject to regulations under the *Migratory Birds Convention Act* (MBCA).

2.2.3.1. Migratory Bird Regulations (2022)

The Migratory Birds Regulations (2022) protects migratory birds, their eggs, and nests by prohibiting activities that cause them harm. Migratory birds, their nests or eggs can be harmed as a result of many activities including those that do not primarily target a bird but may cause harm, such as:

- Clearing trees or other vegetation
- Draining or flooding land
- Using fish gear

Unless authorized under the regulation (MBR 2022), the following activities are prohibited:

- Capture, kill, take, injure, or harass a migratory bird or attempt to do so
- Destroy, take or disturb an egg
- Damage, destroy, remove or disturb a nest shelter, eider duck shelter or duck box unless the following exceptions apply:
 1. Nest does not contain a live migratory bird or viable egg
 2. Nest was not built by a species that is listed under Schedule 1 of the regulation

The following measures can be undertaken to prevent harming migratory birds, nests, and eggs:

- Understand how migratory birds and their nests are legally protected
- Consult the nesting calendar to plan potentially harmful activities outside of breeding season and migration periods
- Plan activities and determine what measures can be taken to avoid causing harm
- Develop and implement preventative and mitigation measures

3. Methodology

The following sections outline the methods followed to collect information and data for the completion of this EIS.

3.1. Background Review

In addition to reviewing the natural heritage policies and mapping in the natural heritage and hazard policy documents, the following background documents and sources of information were consulted to collect information on significant natural heritage features and species:

- Natural Heritage Information Centre (NHIC) Element Occurrence Data (NHIC, 2015)
- Land Information Ontario Natural Heritage Mapping (LIO, 2015)
- Atlas of the Breeding Birds of Ontario (Cadman et al. 2007)
- Atlas of the Mammals of Ontario (Dobbyn, 1994)
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2015)
- Nature Counts (2014)

The Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) database on the Lands Information Ontario (LIO) website (LIO, 2015) was reviewed to document the presence/absence of known occurrences of rare floral or faunal species (i.e., nationally and/or provincially endangered, threatened or special concern species) within the vicinity of the Study Area. The LIO database was also reviewed to document the presence or absence of known sensitive natural heritage features, including areas of natural and scientific interest (ANSIs), provincially significant wetlands (PSWs), environmentally significant areas (ESAs), provincial or national parks, or conservation areas. Additionally, the MNRF was contacted to request additional details on potential species at risk and natural heritage features in the Study Area (MNRF correspondence is included in Appendix B).

The Ontario Reptile and Amphibian Atlas (Ontario Nature, 2016), Ontario Breeding Bird Atlas (Cadman et al, 2007) and the Atlas of the Mammals of Ontario (Dobbyn, 1994) were accessed to identify species with known ranges that overlap with the Study Area, including species at risk and provincially rare species.

A habitat assessment for all terrestrial species at risk and provincially rare species identified through the atlas searches and NHIC background review is included in Appendix C.

3.2. Field Investigations

The field investigations were conducted according to the approved ToR (Appendix B). Field studies and natural heritage inventories were completed in the Study Area, where property access was available, to confirm and refine the boundaries, characteristics and significance of the natural features that may be affected by the proposed development.

A summary of the field investigations undertaken for the Subject Property by both GeoProcess and Stantec is provided in Table 5 below.

Table 5: Ecological Field Work. As with the body text, items in grey were performed by Stantec

Purpose of Field Work	Date(s) of Field Work	Personnel
Vegetation Surveys		
Ecological Land Classification and Fall Botanical	October 15, 2015	Stantec: J. Ball
	October 21, 2021	GeoProcess: Jenn Reader
Spring Botanical	May 18, 2016	Stantec: J. Ball
	May 13, 2022	GeoProcess: M. Douglas
Summer Botanical	August 15, 2016	Stantec: J. Ball
	August 22, 2025, August 26, 2025	GeoProcess: E. Veres & T. Synard
Butternut Tree Tally	May 13, 2020	GeoProcess: J. Reader, W. Birch
Snag Survey	May 1, 2020	GeoProcess: W. Birch & B. Angel
Tree Inventory	July 2020	W. Birch
Wetland Pre-Staking	October 18, 2024	GeoProcess: C. Zoladeski & E. Veres
Wildlife Surveys		
Amphibian Call Count Surveys	April 20, 2016	Stantec: J. Ball, B. Holden
	May 12, 2016	Stantec: J. Ball, A. Corrigan
	April 30, 2020	GeoProcess: K. Glasbergen & W. Birch
	May 23, 2020	GeoProcess: W. Birch
	June 9, 2020	GeoProcess: W. Birch
Breeding Bird Surveys	June 6, 2017	Stantec: B. Holden



Purpose of Field Work	Date(s) of Field Work	Personnel
	June 20, 2017	Stantec: B. Holden
	June 1, 2022	GeoProcess: M. Douglas
	June 16, 2022	GeoProcess: M. Douglas
Bat Maternity Roost Surveys	March 10, 2016	Stantec: J. Ball
	May 1, 2020	GeoProcess: B. Angel, W. Birch
	June 1, 2022	GeoProcess: M. Douglas
Incidental Wildlife Observations	Completed During All Surveys	All Surveyors (GeoProcess & Stantec)
Aquatic Surveys		
Headwater Drainage Feature Assessment	March 10, 2016	Stantec: M. Faiella
	April 9, 2021	GeoProcess: K. Glasbergen & M. Douglas
	May 11, 2021	GeoProcess: K. Glasbergen
	July 28, 2021	GeoProcess: K. Glasbergen
Drone Surveys		
Aerial Assessment	May 10, 2023 May 14, 2023	GeoProcess: B. Quesnel

3.2.1. Vegetation Communities

Vegetation communities were identified using the Ecological Land Classification (ELC) field guide for Southern Ontario (Lee et al., 1998), with the corresponding 2008 updates. All vegetation communities in the Study Area were first identified on aerial imagery and then checked in the field. ELC was completed to the finest level of resolution (vegetation type) where feasible. Provincial significance of vegetation communities was based on the rankings assigned by the Natural Heritage Information Centre (NHIC, 2014). The results of these surveys are summarized in Section 4.5.2.

3.2.2. Vascular Plant Species

Spring, summer and fall botanical surveys were completed in all vegetation communities in the Study Area where access allowed. Flora nomenclature was based primarily on the Database of Vascular Plants of Canada (VASCAN) (Brouillet et al. 2010+) with updates to genera, specific epithets and family names as necessary to reflect recent taxonomic revisions. The primary source of revised nomenclature was VASCAN (2016).

Specific attention was paid during the surveys for potential provincially rare species or species at risk known to occur in the vicinity of the Study Area, such as Butternut and American Chestnut, as well as rare vegetation community types (e.g., prairie, savannah and oak woodlands).

The provincial status of all plant species was based on Natural Heritage Information Centre (MNR, 2015a). Identification of potentially sensitive native plant species is based on their assigned coefficient of



conservatism (CC) value, as determined by Oldham et al. (1995). This CC value, ranging from 0 (low) to 10 (high), is based on a species' tolerance of disturbance and fidelity to a specific natural habitat. Species with a CC value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters.

The results of these surveys are summarized in Section 4.5.2 and a complete list of vegetation species identified during the various surveys is provided in Appendix D.

Upon reviewing Stantec's (2018) EIS for the Subject Property, GeoProcess determined the need for further surveys to determine the actual number of butternut trees present. This occurred through a tally of trees, which included measuring their diameter at breast height (DBH), whether butternut canker was present, and the tree's approximate location.

A fall floristic survey and ELC confirmation was conducted on October 21, 2021, for the Subject Property based on the previously conducted ELC surveys. An additional confirmation survey was conducted on August 22 and August 26, 2025. ELC confirmation included verification of ELC community type and delineation of community limits.

Survey details are provided below in Table 6.

Table 6: Vascular Plant Survey Dates, Times, and Water Conditions

Survey	Date/Time	Weather				Surveyors
		Temp (°C)	Wind (Beaufort Scale)	Cloud (%)	Precipitation	
Stantec: 1	October 15, 2015	12	2	0	None	Stantec: J. Ball
Stantec: 2	May 18, 2016	14	1	0	None	Stantec: J. Ball
Stantec: 3	August 15, 2016	24	1	50	None	Stantec: J. Ball
GeoProcess: 1	May 13, 2020		Not recorded		None	GeoProcess: J. Reader, W. Birch
GeoProcess: 2	October 21, 2021	14	2	100	Drizzle	GeoProcess: J. Reader
GeoProcess: 3	August 22, 2025	22	1	10	None	GeoProcess: E. Veres & T. Synard
	August 26, 2025	20	3	90	Rain	GeoProcess: E. Veres & T. Synard

3.2.3. Tree Inventory

An inventory and assessment of all trees with a diameter at breast height (DBH) of 10 cm or greater was completed on December 23rd, 2020, and January 6th, 8th and 12th, 2021 in accordance with the City of Hamilton Tree Protection Guidelines (revised October 2010). All trees on and within 6 metres of the Subject Property relative to the proposed development envelope were assessed for condition utilizing the parameters listed below:



- **Tree #** - tree numbers correspond to figures in Appendix H.
- **Species** - common and botanical names provided in the inventory table.
- **DBH** - diameter (centimeters) at breast height, measured at 1.4 m above the ground.
- **Condition** - condition of trees were assessed based on the following:
 - Good - dead branches less than 10%; signs of good compartmentalization on any wounds, no structural defects.
 - Fair - 10-30% dead branches, size or occurrence of wounds present some concerns, minor structural defects.
 - Poor - more than 30% dead branches, weak compartmentalization, early leaf drop, presence of insects or disease, major structural defects. o DEAD - tree shows no signs of life; and
 - Dead – tree shows no sign of life.
- **Comments** - additional relevant detail.

Heritage trees with a DBH of 45 cm or greater were identified based on the Town of Ancaster Tree By-law (2000-118). A heritage tree is defined as "as any tree with a DBH of no less than 45 cm with the exception of (i) all Willow species (*Salix sp.*), (ii) all Poplar species (*Populus sp.*) (iii) Siberian Elms (*Ulmus pumila*) (iv) Manitoba Maples (*Acer negundo*), and (v) Norway Maples (*Acer platanoides*)".

Areas identified as hedgerows and polygons in Maps 1 to 1j in Appendix H included a 100% tally of trees over 10 cm DBH based on species, size and condition. These features were not mapped individually due to impacts from canopy cover and/or stem density on GPS location accuracy.

Species nomenclature and ranking is based on the Ministry of Natural Resources and Forestry Natural Heritage Information Centre species list.

3.2.4. Wetland Delineation

The wetland in the eastern section of the Subject Property was delineated during a field visit with the HCA and Stantec staff on September 21, 2016. The wetland delineation was based on the protocols outlined in the Ontario Wetland Evaluation System (OWES) (MNRF 2014). In general, where greater than 50% of the tree canopy consists of species known to commonly inhabit wet areas, the community is considered wetland. Where a tree canopy does not exist, or is inconclusive, the shrub or herbaceous layer is then assessed using the same principle. Where plant species do not indicate a clear boundary, additional evidence, such as the nature of the underlying substrate, may also be considered (MNRF, 2014).

Upon confirmation of the wetland boundary by the HCA, the boundary was surveyed by a professional surveyor.

The location of the confirmed wetland boundary is shown on Map 3.

3.2.5. Woodland Delineation

The dripline of the woodland in the southwest corner of the Study Area was delineated during a field visit with the City of Hamilton and Stantec Staff on September 21, 2016. Upon confirmation of the woodland boundary by the City of Hamilton, the boundary was surveyed by a professional surveyor.

The location of the confirmed woodland boundary is shown on Map 3

3.2.6. Amphibian Surveys

Amphibian call count surveys were conducted at 5 stations within the Study Area. Call count point locations are shown on Figure 3, Appendix A. Survey methods were based on the Marsh Monitoring Program manual (Environment Canada, 2008). The survey station area was a 100 m radius semicircle. The surveyor stood at the edge of the station and listened from left to right (see field sheets for a diagram). At each call count survey and station, all calling toads and frogs were identified and recorded over a three-minute time-period. Call levels were described using values of 1, 2, or 3. Level 1 indicated that individuals could be counted and calls were not simultaneous. Level 2 indicated that calls were distinguishable with some simultaneous calling. Level 3 indicated a full chorus where calls were continuous and overlapping (Environment Canada, 2008). Calling toad or frog species from outside of the survey station, or those heard off property, were also recorded.

Results of the survey are included in Section 4.5.6.

GeoProcess performed amphibian call count surveys in 2020, following the Marsh Monitoring Program protocol (Bird Studies Canada, 2009). Survey locations were chosen such that they were as close as possible to those used by Stantec in 2016. Three surveys were performed, at the appropriate air temperature triggers (5°C, 10°C and 17°C) under the correct weather conditions (light winds).

Survey details for both Stantec and GeoProcess's surveys are provided below in Table 7.

Table 7: Amphibian survey dates, times, and weather conditions

Survey	Date/Time	Temp (°C)	Weather			Surveyors
			Wind (Beaufort Scale)	Cloud (%)	Precipitation	
Stantec: 1	April 20, 2016 20:26-21:10	6	2	40	None	Stantec: J. Ball, B. Holden
Stantec: 2	May 12, 2016 20:50-21:31	14	1	100	None	Stantec: J. Ball, A. Corrigan
GeoProcess: 1	April 30, 2020 21:00-21:48	10-11	0-3	100	Drizzle -Damp	GeoProcess: K. Glasbergen, W. Birch
GeoProcess: 2	May 23, 2020 21:40-22:50	17-18	0-1	0-60	Damp	GeoProcess: W. Birch
GeoProcess: 3	June 9, 2020 21:40-22:52	23-24	1-2	0-10	Damp	GeoProcess: W. Birch

3.2.7. Breeding Bird Surveys

Breeding bird surveys were conducted in all natural vegetation communities in the Study Area on June 6 and June 20, 2017. Surveys consisted of recording all species of birds that were seen or heard within each habitat in the Study Area. A conservative approach to determining breeding status was taken; i.e., all birds seen or heard in appropriate habitat during the breeding season were assumed to be breeding.

Surveys began at, or within, half an hour of sunrise, and were completed by 10:00 a.m. Weather conditions (i.e., precipitation and visibility) were within the parameters required by monitoring programs such as Environment Canada’s Breeding Bird Survey or the Ontario Forest Bird Monitoring Program.

GeoProcess completed a second round of breeding bird surveys on June 1, 2022, and June 16, 2022. The results of both surveys are summarized in Section 4.5.7.

Survey details are provided below in Table 8.

Table 8: Survey Dates, Times, and Weather – Breeding Birds

Survey	Date/Time	Weather				Surveyors
		Temp (°C)	Wind (Beaufort Scale)	Cloud (%)	PPT / PPT last 24 hours	
1	June 6, 2017 06:00-08:00	14	1-2	95-100	None/Rain	Stantec: B. Holden
2	June 20, 2017 07:00-09:00	17-20	1-2	100	None/Rain	Stantec: B. Holden
3	June 1, 2022 07:00-08:23	25	2	50	None/None	Meghan Douglas
4	June 16, 2022 07:06- 08:00	22	1	50-80	None/None	Meghan Douglas



3.2.8. Bat Maternity Roost Surveys

A bat maternity roost survey was conducted within the WODM4-4 community to confirm and assess the potential presence of bat maternity colonies (BMC). This survey followed guidelines provided by the Ministry of Natural Resources (MNR) through the use of Bats and Bat Habitats: Guidelines for Wind Power Projects (July 2011). The Guidelines identify deciduous and mixed forest communities > 1 ha as candidates for the bat maternity roost survey. Forest community delineation of the Study Area was determined using the Ecological Land Classification (ELC) protocol (Lee et al, 1998), as per the Guidelines. Although the WODM4-4 community is not classified as a forest, a bat maternity roost assessment was conducted since the community is within the proposed development area. Other forest communities within the Study Area, including the FODM2-1 and FODM1-1 communities, are outside of the proposed development footprint, and were therefore not assessed as part of the field investigation and assumed to provide significant habitat for bat maternity colonies.

In order to assess the WODM4-4 community for Bat Maternity Roosts, all trees with suitable cavities to support BMC (small, narrow openings) were recorded. This generally included but was not limited to trees with a decay class of 1-3, trees that were ≥ 25 cm in diameter at breast height (dbh) and cavities 10 m or higher from the ground. Surveys were conducted during leaf-off so cavities could be observed clearly. Results of the bat maternity roost surveys are summarized in Section 4.5.8.

GeoProcess performed a bat maternity roost survey within the WODM4-4 community in 2020, following the updated MNRF (2017) protocol for Survey Protocol for Species at Risk Bats within Treed Habitats. This occurred on Friday, May 1, 2020. Per the MNRF (2017) protocol, this survey was suitable to identify maternity roost trees for *Myotis* bats since it occurred during leaf-off conditions.

3.2.9. Wildlife Habitat Assessment

A candidate significant wildlife habitat assessment of the Study Area was undertaken during the ELC and botanical surveys. Criteria used to identify candidate significant wildlife habitat in the Study Area were derived from the Significant Wildlife Habitat Technical Guide (MNR, 2000) and the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF 2015b).

3.2.10. Incidental Wildlife Observations

Incidental wildlife observations were recorded during all field investigations. All wildlife species identified by sight, sound or distinctive signs during all surveys were recorded.

GeoProcess recorded any incidental wildlife observations that occurred via sight, sound, or distinctive signs during surveys.

3.2.11. Headwater Drainage Feature Assessment

Aerial photographs of the Study Area were reviewed to identify potential locations of headwater drainage features prior to conducting fieldwork. Fieldwork for the headwaters assessment consisted of an early spring field visit to verify the presence/absence of flowing headwater drainage features.

Headwater drainage features on any given site are assessed using the document entitled Evaluation, Classification and Management of Headwater Drainage Features Guidelines (CVC and TRCA, TRCA Approval July 2013; finalized January 2014), hereafter referred to as the guidelines. These guidelines, as outlined in the document, can generally be applied to any drainage feature that is:

- part of the drainage network (i.e. drainage channels that are identified from aerial photography, and/or drainage lines resulting from ArcHydro analysis), or
- a groundwater seepage area or spring, or
- a connected headwater wetland (a surface outlet connects to downstream), and
- not a mapped or known perennially flowing stream.

The guidelines employ a multiple survey approach to headwater drainage feature assessments (HDFAs), where warranted, in order to capture seasonal variability in hydroperiod, as well as to identify other potential ecological functions of these features on the landscape. In general, the need for additional surveys and the timing of each visit is dictated by the results of the previous survey, as follows:

Site Visit 1 is conducted during a window of approximately 2 weeks, immediately after the snow pack has dissipated and the frost is out of the ground. The survey window is typically during late March or early April, but is subject to variation depending on the weather in any given year. During the first site visit, all drainage lines generated using ArcHydro, aerial photography interpretation or contour interpretation must be examined. Both the flow condition and feature type during this site visit determine if the HDF requires further investigation or, if it is a feature exhibiting limited functions. If the feature is dry or standing water, or if there is no defined feature present, it is likely that the feature would be considered as “limited functions” and no additional data are required; therefore no further field visits are required. If the feature exhibits functions beyond the “limited functions” criteria, such as a defined flow path and active flow, further data collection is then required to define those functions more fully.

Site Visit 2 is conducted for features that are determined to possess functions beyond “limited” during Site Visit 1. The second visit is conducted after the freshet has ended when the melt/thaw related interflow has ceased and, preferably, after a few days with no precipitation. Timing of this visit should occur before spring plant growth is very far advanced to permit unobstructed examination of features, and is typically from late April through mid-May. During this site visit, flow condition and fish presence are assessed.

If the feature is dry during Site Visit 2, or, as is often the case, it has been removed by cultivation, a third site visit is not required. If water is present, Site Visit 3 can be scheduled to obtain further data.

Site Visit 3 is conducted if water was present in the feature during Site Visit 2. The timing of the third visit is from July to mid-September, preferably after several days without a significant (i.e. flow generating) amount of rain. During this site visit flow condition and fish presence are assessed. The presence of flow during this visit automatically results in classification as an “important” feature, so fish presence has no effect on management recommendations. Where isolated standing pools exist, sampling should be conducted, as described for site visit 2 (above), to determine the upstream limit of year-round fish utilization.

The data and observations collected from site visits are used to inform a series of classifications of the feature in relation to its function with respect to hydrology, riparian character, fish and fish habitat, and terrestrial habitat. These classifications are then used to navigate a flow chart that determines the most appropriate management approach for the feature. Management approaches can range from protection in situ to “no

management” requirements (i.e. removal is possible), with interim management approaches that include replication of form and function or replication of function alone.

3.2.12. Species at Risk Screening and Assessment

An assessment and screening of potential Species at Risk (SAR) was conducted for the Subject Property based on Federal and Provincial status. Following the MECP Client’s Guide to Preliminary SAR Screening (2019), this screening was based on a review of the Natural Heritage Information Centre, regional species list, atlases (i.e. OBBA, butterfly, moth, and reptile and amphibian), and citizen science databases (i.e. iNaturalist, eBird). Data sources utilized for the screening are described in Appendix I. The SAR assessment results are further discussed in Section 5.

3.2.13. Significant Wildlife Habitat Assessment

A screening for Significant Wildlife Habitat (SWH) following the Ministry of Natural Resources and Forestry Significant Wildlife Habitat Technical Guide (2000) and Significant Wildlife Habitat Criteria Schedule for Ecoregion 7E (2015) was conducted for the Subject Property. Potential SWH identified was assessed during the complementary field studies. The results of this assessment are found in Section 6.6 and Appendix J.

3.3. Analysis of Significance and Sensitivity

Biological field data were evaluated to determine the significance of natural heritage features. Status rankings (SRANKs) for plants, vegetation communities and wildlife are based on the number of occurrences in Ontario and have the following meanings:

- S1:** critically imperiled; often fewer than 5 occurrences
- S2:** imperiled; often fewer than 20 occurrences
- S3:** vulnerable; often fewer than 80 occurrences
- S4:** apparently secure
- S5:** secure
- S?:** unranked, or, if following a ranking, rank uncertain (e.g. S3?).

The global, federal and provincial status of wildlife was determined by reviewing species accounts published by the Natural Heritage Information Centre (NHIC, 2013). Provincial significance of vegetation communities is based on the rankings assigned by the Natural Heritage Information Centre (NHIC, 2013). The provincial status of all plant species is based on Newmaster et al. (1998), with updates from the database of the Natural Heritage Information Centre (NHIC, 2013). Species at risk protected under the Endangered Species Act include those listed on the current Species at Risk in Ontario (SARO) List. Locally rare species will be identified using the HCA Nature Counts 2 Species Checklists (HCA, 2013). Identification of potentially sensitive plant species was based on the coefficient of conservatism value (CC) assigned to each native species in southern Ontario (Oldham et al. 1995). The value of CC, ranging from 0 (low) to 10 (high), is based on a species’ tolerance of disturbance and fidelity to natural habitats. Species with a CC value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters and undisturbed environments.

The potential significance of the natural heritage features and associated ecological functions was evaluated in accordance with the following provincial and municipal guideline documents:

- Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005 (MNR, 2010) to determine Provincially Significant natural heritage features and associated ecological functions
- SWH Criteria Schedules for EcoRegion 7E (MNRF, 2015) to determine the significance of identified wildlife habitat features and functions

The potential sensitivity of natural heritage features and functions, such as existing wetlands and drainage functions, was also assessed in consideration of:

- surface water and groundwater patterns
- habitat quality, floral quality index, degree of disturbance
- potential linkage and corridor functions

4. Existing Conditions

The information contained in this section describes the existing natural heritage features and functions identified for the Study Area, including information identified during the background review and updated using field investigations.

4.1. General Overview of Site Conditions

The Study Area is comprised mainly of agricultural lands, with a linear wetland feature on the eastern section of the property and a mature deciduous forest in the southwest corner. Cultural woodlands occur adjacent to the off-site residential properties at the north end of the Subject Property.

4.2. Designated Natural Heritage Features

According to Schedule B of the Urban Hamilton Official Plan, the Study Area contains three woodlands identified as Linkages, and one drainage feature.

The drainage feature is a headwater (HDF) tributary of Ancaster Creek and is designated as a Key Hydrological Feature (streams) on Schedule B-8. A locally significant wetland associated with the stream feature was identified within the Subject Property. The stream, its associated wetland, and buffers are regulated by Hamilton Conservation Authority (HCA) under Regulation 41/24.

4.3. Physiography

The Study Area is located within the northern belt of the physiographic region classified by Chapman and Putnam (1984) as the Haldimand Clay Plain (Chapman and Putnam, 1984). The area is characterized by a series of east to west trending recessional till moraines with subdued relief and intervening troughs filled with glaciolacustrine silt or clay.

4.4. Hydrology

4.4.1. Hydrogeology

Available data from the Hydrogeology Report (Stantec 2017) indicate the depth to groundwater across the Site ranges from approximately 2.3 m BGS to 5.5 m BGS under high water table conditions (e.g., April 2016), with about 1 m of seasonal fluctuation based on the data collected to late July 2016. The interpreted direction of groundwater flow is to the northeast. The velocity of horizontal groundwater flow through the shallow overburden is calculated to range from less than 0.1 m per year to 3.4 m per year. Overall, the recharge function of the Site is expected to be minimal, given that infiltration will be limited by the low permeability surficial silty clay deposits that cover the Site.

The potential for groundwater discharge at the Site is negligible. A review of fish habitat mapping presented in Dillon and Aquafor Beech (2011) indicates that the intermittent drainage draw in the eastern portion of the Site is a seasonal warmwater drainage, suggesting that it is likely not sustained by groundwater inputs.

RJ Burnside completed an updated hydrogeological assessment of the site in 2024 and 2025. The goal of the Burnside hydrogeology assessment was to determine how groundwater on the site may be interacting with the wetland community. The Burnside assessment included installing new monitoring wells and piezometers, as well as placing loggers back into monitoring wells established by Stantec. The monitoring period included in the most recent report falls between September 2024 and September 2025.

RJ Burnside provided an update to the Hydrogeology Report (Stantec 2017) with a focus on the wetland. The results of their analysis were presented in the Feature-Based Water Balance Report dated September 2024. The report states that surficial sand is found across the southern portion of the Subject Property and is deposited on low-permeability glaciolacustrine clay and silt. The glaciolacustrine clay and silt act as an aquitard, limiting deeper recharge to the underlying soils and subsequently creating a perched water table within the surficial sands. The surficial sands ultimately provide a means for water infiltrating directly on the southern portion of the subject property to move laterally through the shallow soils toward the low-lying area where the wetland is situated.

The discharge conditions reflect the convergence of interflow from the sand to the wetland feature as opposed to an upward pressure from the underlying soils. The wetland is observed to be dry during the summer through to late fall, which indicates that when the surficial sands dry through a period of low precipitation, the wetland will also directly respond to these precipitation patterns. This indicates that the wetland is primarily supported by the shallow interflow system and direct precipitation/runoff.

The results of the ground and surface water monitoring within the wetland area show that groundwater levels rise above the ground surface, and above the surface water level in the wetland, in the southern portion of the feature during the spring (wet) season. The groundwater levels fall below the ground surface in late June/early July during dry conditions.

At the north end of the wetland, groundwater levels remain at or below the ground surface through the spring and below the surface water levels in the feature. The groundwater levels declined rapidly in mid-June when the staff gauge at this location was also dry. Both the ground and surface water levels rose quickly following large rainfall events, with a slight lag in the deeper piezometer, indicating a direct connection between the surface water level and shallow groundwater through infiltration.

4.4.2. Surface Water

Surface water features within the Study Area include a first order headwater channel of Ancaster Creek, identified as a key hydrological feature by the Urban Hamilton OP (Map 5). Assessment of the feature found that it is poorly defined, flowing through a wetland community before flowing north off the site. There is no defined low flow channel present within the emergent marsh community. The channel becomes better defined north of the emergent marsh and as it runs along the western side of a number of willows and then follows an ATV trail, with the tire tracks providing some channel definition, and finally cuts through a small coniferous community before exiting in the northeast corner of the site. Flow was present in the channel during the spring (April to May) but not during the summer months for multiple years (2021 to 2025). Flow in the channel is entirely dependant on flow being released from the wetland.

Three small, very poorly defined Headwater Drainage Features (HDF) draining into the wetland community were identified. These features are best described as shallow depressions traversing through cropped fields. All three features were dry during all site visits, including early April, indicating that they only convey water during the spring freshet and likely only during very large rain events. In general, the HDFs did not exhibit any low flow channel features or any evidence of sediment sorting, erosion or the movement of sediment in general, with the only exception being HDF1 as it neared the wetland community. This indicates that the features convey very minor overland flow.

Small, shallow vernal pools were observed in the woodlot at the southeast corner of the Study Area, directly adjacent to Highway 6, during the March 10, 2016, aquatic assessment.

The wetland catchment area was delineated using both a physical topographic survey completed by A.T. McLaren Limited (November 8, 2021) and LiDAR topographic data. Currently, the total drainage area to the wetland is 31.46 ha, with 24.18 ha within the Subject Property and 7.28 ha of external lands. RJ Burnside created a surface water model to understand the hydrologic function of the wetland under current and proposed conditions. The model results are available in the Feature-Based Water Balance Report (October 2025).

4.4.3. Wetlands

An unevaluated wetland approximately 1.8 ha in size was identified in the Study Area during ELC surveys. The wetland was comprised of a cattail meadow marsh (MAMM1-2) at the south end, a common reed meadow marsh (MAMM1-12) in the center, and a willow swamp thicket (SWTM3-8) at the north end. The wetland was surrounded by active agriculture, and the headwater tributary of Ancaster Creek originated from the center of the wetland.

The wetland communities that make up the unevaluated wetland are described below in Table 9 and shown on Map 4.

4.5. Terrestrial Resources

4.5.1. Landscape Ecology

The Study Area is located in the Niagara section of the Deciduous Forest Region (Rowe, 1972). This area is also known as the Carolinian Forest. The extreme southern tip of Ontario represents the northern limit of Carolinian Forest. Forests in this region are dominated by broadleaved trees including sugar maple, American beech, basswood, red maple, red oak, white oak, and bur oak, butternut, bitternut hickory, rock elm, silver maple and blue beech. Species such as black cherry, black walnut, sycamore, swamp white oak, and shagbark hickory are also occasionally present. Species considered rare to the province, such as pignut hickory, tulip-tree, chinquapin oak, pin oak, black oak, black gum, blue ash, cucumber-tree, paw paw, Kentucky coffee-tree, red mulberry and sassafras are sporadically present in this forest region. Needle-leaved trees such as hemlock, white pine, tamarack, eastern white cedar, eastern red cedar and black spruce may be found in isolated patches where soil conditions are favorable.

4.5.2. Vegetation Communities

The Study Area was dominated by active agricultural lands. A linear wetland consisting of marsh and swamp communities and an intermittent drainage draw, extended along the eastern section of the Subject Property. Cultural woodlands occurred at the northern border of the Subject Property, adjacent to residential properties situated along Garner Road. Mature deciduous forest patches occurred at the southwest and southeast corners of the Subject Property. The forest at the southwest corner is contiguous with an extensive tract of deciduous forest and wetland located immediately west of the Subject Property.

The vegetation communities recorded during field investigations, based on the ELC system for Southern Ontario, are shown on Map 4 and described in Table 9. GeoProcess conducted a fall ELC survey in 2021 and a summer survey in 2025, which confirmed and refined Stantec’s ELC community codes, descriptions, and locations. Additional information was added to the community descriptions where applicable.

Table 9: Ecological Land Classification (ELC) Vegetation Types

ELC Code and Classification	Characteristic Vegetation	Comments
WODM4-4: Dry-Fresh Black Walnut Deciduous Woodland	Canopy	Black Walnut (<i>Juglans nigra</i>)
	Sub-canopy	Black Walnut (<i>Juglans nigra</i>)
	Understory	Riverbank Grape (<i>Vitis riparia</i>), Thicket Creeper (<i>Parthenocissus vitacea</i>)
	Ground	Riverbank Grape (<i>Vitis riparia</i>), Thicket Creeper (<i>Parthenocissus vitacea</i>)
WODa: Deciduous Woodland	Canopy	Silver Maple (<i>Acer saccharinum</i>), Black Walnut (<i>Juglans nigra</i>)
	Sub-canopy	Silver Maple (<i>Acer saccharinum</i>), Black Walnut (<i>Juglans nigra</i>), Eastern White Cedar (<i>Thuja occidentalis</i>)
	Understory	Red Osier Dogwood (<i>Cornus sericea</i>), Cottony Willow (<i>Salix eriocephala</i>), Manitoba Maple (<i>Acer negundo</i>)



ELC Code and Classification	Characteristic Vegetation	Comments
	Ground Rough Avens (<i>Geum laciniatum</i>), Panicked Aster (<i>Symphotrichum lanceolatum</i>), Yellow Archangel (<i>Lamium galeobdolon</i>)	Soils with an effective texture of silty sand and an absence of mottles or gley. indicating fresh soils.
CUM1-1: Dry-Moist Old Field Meadow Type	Sub-canopy Black Locust (<i>Robinia pseudoacacia</i>) Understory Black Locust (<i>Robinia pseudoacacia</i>), Trembling Aspen (<i>Populus tremuloides</i>), Staghorn Sumac (<i>Rhus typhina</i>) Ground Canada Goldenrod (<i>Solidago canadensis</i>), Asters (<i>Symphotrichum spp.</i>), Grass-leaved Goldenrod (<i>Euthamia graminifolia</i>), Orchard Grass (<i>Dactylis glomerata</i>)	Young cultural meadow community with a variety of tree species sparsely scattered throughout. Soils with an effective texture of silty clay and mottles appearing at 40cm, indicating moist soils.
CVR: Cultural-Residential	Canopy Black Walnut (<i>Juglans nigra</i>) Sub-canopy Black Walnut (<i>Juglans nigra</i>) Understory Black Raspberry (<i>Rubus occidentalis</i>), Multiflora Rose (<i>Rosa multiflora</i>) Ground Kentucky Bluegrass (<i>Poa pratensis</i>)	Residential area with a mowed lawn on the west edge and unmaintained turfgrass persisting throughout. A wooded area is present in the southwest corner of the community, containing mature Blue Spruce (<i>Picea pungens</i>) and White Spruce (<i>Picea glauca</i>) that is nowhere else in the polygon. Soils with an effective texture of silty sand, with an absence of mottles or gley, indicating fresh soils.
WODb Deciduous Woodland	Canopy Black Locust (<i>Robinia pseudoacacia</i>), Black Walnut (<i>Juglans nigra</i>), Trembling Aspen (<i>Populus tremuloides</i>) Sub-canopy Eastern White Cedar (<i>Thuja occidentalis</i>) Understory Multiflora Rose (<i>Rosa multiflora</i>), Common Buckthorn (<i>Rhamnus cathartica</i>), Red Raspberry (<i>Rubus idaeus</i>) Ground Rough Avens (<i>Geum laciniatum</i>), Broad-leaved Enchanter's Nightshade (<i>Circaea canadensis</i>)	Mid-aged cultural woodland community with a variety of tree species, Black Locust and Black Walnut being the most abundant. The remnants of an old laneway are present in this polygon, creating a small open section containing plants observed nowhere else in this polygon, including locally rare species Virginia False Dragonhead (<i>Physostegia virginiana</i>) and provincially rare species Cup Plant (<i>Physostegia virginiana</i>). Soils with an effective of silty sand, with an absence of mottles or gley. Indicating fresh soils. Rocky material appearing at 50cm, impeding the soil core. Chert with mineral impurities found within the soil core.
SWDM4-1a: Willow Mineral Deciduous Swamp Type	Canopy White Willow (<i>Salix alba</i>), Crack Willow (<i>Salix euxina</i>), Black Walnut (<i>Juglans nigra</i>) Sub-Canopy White Willow (<i>Salix alba</i>), Silver Maple (<i>Acer saccharinum</i>)	Mid-aged deciduous swamp community. Effective soil texture of clay loam, with an absence of gley. Mottles



ELC Code and Classification	Characteristic Vegetation	Comments
	Understory Riverbank Grape (<i>Vitis riparia</i>), Red Osier Dogwood (<i>Cornus sericea</i>)	appeared at 55cm, indicating moderately moist soils.
	Ground Asters (<i>Symphotrichum spp.</i>), Spotted Jewelweed (<i>Impatiens capensis</i>), Reed Canarygrass (<i>Phalaris arundinacea</i>)	Locally rare species, Ontario Aster (<i>Symphotrichum ontarionis</i>), present occasionally in the ground layer of this community.
WODM4-4b: Dry-Fresh Black Walnut Deciduous Woodland	Canopy Black Walnut (<i>Juglans nigra</i>)	Mid-aged Black Walnut deciduous woodland with an abundance of woody vining species in the understory and ground layer.
Sub-canopy	Black Walnut (<i>Juglans nigra</i>), Black Cherry (<i>Prunus serotina</i>), Norway Maple (<i>Acer platanoides</i>)	
Understory	Riverbank Grape (<i>Vitis riparia</i>), Virginia Creeper (<i>Parthenocissus quinquefolia</i>)	Effective soil texture of silty sand with an absence of mottles or gley. Rocky material and coarse fragments appearing at 55cm, impeding the soil core.
Ground	Riverbank Grape (<i>Vitis riparia</i>), Black Raspberry (<i>Rubus occidentalis</i>), Virginia Creeper (<i>Parthenocissus quinquefolia</i>)	
THDM2-4: Gray Dogwood Deciduous Shrub Thicket Type	Sub-canopy Crack Willow (<i>Salix euxina</i>)	Young cultural thicket community with an abundance of Gray Dogwood throughout the understory. Crack Willow rare in the sub-canopy.
Understory	Gray Dogwood (<i>Cornus racemosa</i>), Red Osier Dogwood (<i>Cornus sericea</i>), Riverbank Grape (<i>Vitis riparia</i>)	
Ground	Rough Avens (<i>Geum laciniatum</i>), Panicked Aster (<i>Symphotrichum lanceolatum</i>), Riverbank Grape (<i>Vitis riparia</i>)	Effective soil texture of silty sand, with mottles appearing at 35cm, indicating moist soils. Rocky material appeared at 60cm, impeding the soil core.
WODc: Deciduous Woodland	Canopy Black Walnut (<i>Juglans nigra</i>), Black Locust (<i>Robinia pseudoacacia</i>)	
Sub-canopy	Black Walnut (<i>Juglans nigra</i>), Black Locust (<i>Robinia pseudoacacia</i>), Sweet Cherry (<i>Prunus avium</i>)	Mid-aged Black Walnut cultural woodland. Visual access only; no soil core taken and plant list obtained from the edge of the community.
Understory	Riverbank Grape (<i>Vitis riparia</i>), Multiflora Rose (<i>Rosa multiflora</i>)	
Ground	Tall Goldenrod (<i>Solidago altissima</i>), Great Ragweed (<i>Ambrosia trifida</i>)	
THDM2: Dry - Fresh Deciduous Shrub Thicket Ecosite	Canopy Black Walnut (<i>Juglans nigra</i>)	Mid-aged cultural thicket community with Black Walnut sparsely in the canopy and sub-canopy.
Sub-canopy	Manitoba Maple (<i>Acer negundo</i>), Black Walnut (<i>Juglans nigra</i>)	
Understory	Red Osier Dogwood (<i>Cornus sericea</i>), Black Walnut (<i>Juglans nigra</i>), Staghorn Sumac (<i>Rhus typhina</i>)	Visual access only; no soil core taken and plant list obtained from the edge of the community.
Ground	Tall Goldenrod (<i>Solidago altissima</i>), Common Milkweed (<i>Asclepias syriaca</i>)	
FODM2-1: Red Maple Deciduous Forest Type	Canopy Red Maple (<i>Acer rubrum</i>), Red Oak (<i>Quercus rubra</i>), Black Cherry (<i>Prunus serotina</i>)	Mature deciduous forest community with a mix of Red Maple, Red Oak, and Black Cherry defining the canopy.
Sub-canopy	Red Maple (<i>Acer rubrum</i>), White Ash (<i>Fraxinus americana</i>)	
Understory	Alleghany Blackberry (<i>Rubus alleghaniensis</i>)	



ELC Code and Classification	Characteristic Vegetation	Comments
	Ground Alleghany Blackberry (<i>Rubus alleghaniensis</i>), Garlic Mustard (<i>Alliaria petiolata</i>), Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	Effective soil texture of silty clay loam with an absence of gley or mottles, indicating fresh soil moisture.
FODM1-1: Dry – Fresh Red Oak Deciduous Forest Type	Canopy Red Oak (<i>Quercus rubra</i>) Sub-canopy Trembling Aspen (<i>Populus tremuloides</i>), Shagbark Hickory (<i>Carya ovata</i>), Bitternut Hickory (<i>Carya cordiformis</i>) Understory Gray Dogwood (<i>Cornus racemosa</i>), Red Osier Dogwood (<i>Cornus sericea</i>) Ground Red Raspberry (<i>Rubus idaeus</i>), Broad-leaved Enchanter’s Nightshade (<i>Circaea canadensis</i>)	Mid-aged deciduous forest community with variable density in the canopy layer. Visual access only; no soil core taken and plant list obtained from the edge of the community.
MAMM1-12: Common Reed Mineral Meadow Marsh	Understory Gray Dogwood (<i>Cornus racemosa</i>), Red Osier Dogwood (<i>Cornus sericea</i>), Cottony Willow (<i>Salix eriocephala</i>), Common Buckthorn (<i>Rhamnus cathartica</i>) Ground Common Reed (<i>Phragmites australis</i>), Spotted Jewelweed (<i>Impatiens capensis</i>)	Mature meadow marsh community with Common Reed dominant in the ground layer and shrubs occasional throughout. Soil core attempts impeded by dense Common Reed growth.
SWDM4-1b: Willow Mineral Deciduous Swamp Type	Canopy Hybrid Crack Willow (<i>Salix x fragilis</i>), Eastern Cottonwood (<i>Populus deltoides</i>) Sub-canopy Hybrid Crack Willow (<i>Salix x fragilis</i>) Understory Gray Dogwood (<i>Cornus racemosa</i>), Black Walnut (<i>Juglans nigra</i>) Ground Reed Canarygrass (<i>Phalaris arundinacea</i>), Panicked Aster (<i>Symphyotrichum lanceolatum</i>)	A small, mid-aged deciduous swamp community. Effective soil texture of silty clay loam with mottles appearing at 15cm, indicating very moist soils. Rocky material appeared at around 70cm in the soil core.
MAMM2-4: Mixed Forb Mineral Meadow Marsh Type	Understory Red Osier Dogwood (<i>Cornus sericea</i>) Ground Panicked Aster (<i>Symphyotrichum lanceolatum</i>), Purple Loosestrife (<i>Lythrum salicaria</i>), Grass-leaved Goldenrod (<i>Euthamia graminifolia</i>), Shining Aster (<i>Symphyotrichum firmum</i>)	Young meadow marsh community with a diversity of forb species in the ground layer. Soil core attempts impeded by rocky material appearing around 60cm. Soils above 60cm with an effective texture of silty clay loam with mottles appearing at 15cm, indicating very moist soils.
MAMM1-2: Cattail Graminoid Mineral Meadow Marsh	Ground Broad-leaved Cattail (<i>Typha latifolia</i>), Reed Canarygrass (<i>Phalaris arundinacea</i>), Purple Loosestrife (<i>Lythrum salicaria</i>), Spotted Jewelweed (<i>Impatiens capensis</i>), Panicked Aster (<i>Symphyotrichum lanceolatum</i>)	Mature meadow marsh community with low species diversity, dominated by Broad-leaved Cattail and Reed Canarygrass. Soil core attempts impeded by rocky material appearing around 60cm. Soils above 60cm with an effective texture of silty clay loam, with mottles appearing at 20cm, indicating very moist soils.



ELC Code and Classification		Characteristic Vegetation	Comments
SWDM4: Cottonwood-Willow Mineral Deciduous Swamp	Canopy	Eastern Cottonwood (<i>Populus deltoides</i>)	Mature deciduous swamp community with very dense shrub growth, leading to an absence of a sub-canopy layer and few herbaceous species. Soil core attempts impeded by dense shrub growth.
	Understory	Gray Dogwood (<i>Cornus racemosa</i>), Red Osier Dogwood (<i>Cornus sericea</i>)	
	Ground	Gray Dogwood (<i>Cornus racemosa</i>), Red Osier Dogwood (<i>Cornus sericea</i>), Panicked Aster (<i>Symphyotrichum lanceolatum</i>)	
SWT2-2a: Willow Mineral Thicket Swamp	Canopy	Hybrid Crack Willow (<i>Salix x fragilis</i>)	Mid-aged thicket swamp community with a dense shrub layer and sparse amount of Hybrid Crack Willow in the canopy layer. Soil core attempts impeded by dense shrub growth.
	Understory	Cottony Willow (<i>Salix eriocephala</i>), Gray Dogwood (<i>Cornus racemosa</i>)	
	Ground	Panicked Aster (<i>Symphyotrichum lanceolatum</i>), Purple Loosestrife (<i>Lythrum salicaria</i>), Reed Canarygrass (<i>Phalaris arundinacea</i>)	
SWDM4-1c: Willow Mineral Deciduous Swamp Type	Canopy	Hybrid Crack Willow (<i>Salix x fragilis</i>), Weeping Willow (<i>Salix babylonica</i>)	Mature deciduous swamp community with non-native willow species in the canopy layer. Silty loam soils with mottles appearing at 40cm, indicating moist soils.
	Understory	Gray Dogwood (<i>Cornus racemosa</i>), Common Buckthorn (<i>Rhamnus cathartica</i>)	
	Ground	Gray Dogwood (<i>Cornus racemosa</i>), Red Osier Dogwood (<i>Cornus sericea</i>), Common Buckthorn (<i>Rhamnus cathartica</i>)	
SWT2-2b: Willow Mineral Thicket Swamp	Understory	Interior Sandbar Willow (<i>Salix interior</i>), Cottony Willow (<i>Salix eriocephala</i>) Gray Dogwood (<i>Cornus racemosa</i>), Red Osier Dogwood (<i>Cornus sericea</i>)	Mature, dense willow thicket with very little herbaceous species in the ground layer. Soil core attempts impeded by dense shrub growth.
	Ground	Purple Loosestrife (<i>Lythrum salicaria</i>), Horsetail species (<i>Equisetum sp.</i>), Panicked Aster (<i>Symphyotrichum lanceolatum</i>)	

4.5.3. Hedgerow Assessment

Hedgerow One

Hedgerow One is located towards the southwest of the Property, between two farm fields and connected to the Dry – Fresh Oak – Red Maple Deciduous Forest (FODM2-1) community to the south. It is approximately 200 meters long and 10 to 15 meters wide. The defining canopy species were black cherry (*Prunus serotina*) and black walnut (*Juglans nigra*), while the sub-canopy was defined by black walnut and European buckthorn (*Rhamnus cathartica*). Characteristic understory species included multiflora rose (*Rosa multiflora*) and black raspberry (*Rubus occidentalis*). Species in the ground layer included riverbank grape (*Vitis riparia*), Virginia creeper (*Parthenocissus quinquefolia*), and garlic mustard (*Alliaria petiolata*).

Hedgerow Two

Hedgerow Two is located towards the center-north of the Property. It is bounded by agricultural lands to the east, south, and west, and meets a cultural meadow and a woodland community to the north. It is approximately 150 meters long and 10 to 15 meters wide, although it extends in width approximately 40



meters east in two sections. The defining canopy tree species was black walnut, and the sub-canopy was defined by black walnut and Eastern white cedar (*Thuja occidentalis*). Understory and ground layer vegetation was defined by black raspberry and riverbank grape. Additional ground layer vegetation included tall goldenrod (*Solidago altissima*) and orchard grass (*Dactylis glomerata*).

Hedgerow Three

Hedgerow Three is located along the eastern Property boundary. It is approximately 290 meters long and approximately 15 meters wide. It is bordered by agricultural lands to the west, meadow and Highway 6 to the east, the Dry – Fresh Red Oak Deciduous Forest (FODM1-1) community to the south and meets with a Gray Dogwood Deciduous Shrub Thicket to the north. The defining canopy and sub-canopy tree species was black walnut, while the understory contained additional Black Walnut as well as riverbank grape. The ground layer was defined by additional riverbank grape, as well as tall goldenrod, orchard grass, and jumpseed (*Persicaria virginiana*).

4.5.4. Vascular Plants

A total of 240 vascular plants were recorded during botanical inventory and vegetation community classifications, as well as during hedgerow surveys. A complete list of vascular plants recorded during the 2018 vegetation surveys conducted by Stantec can be found in Appendix D. A complete list of vascular plants recorded during the 2025 vegetation surveys conducted by GeoProcess can be found in Appendix K. Of the 240 vascular plants recorded, 205 plants were identified to the species level. Of those 205 plants, 130 species are native to Southern Ontario, and 74 species are introduced to the region. One species, Thyme-leaved Speedwell (*Veronica serpyllifolia*), is of unclear origins.

The high proportion of non-native species is reflective of the history of human activity within the Study Area, which is predominantly agricultural lands, and the subsequent fragmentation of many of the plant communities observed onsite. In the wetland communities within the Study Area, invasive species such as European Common Reed (*Phragmites australis ssp. australis*) and Reed Canarygrass (*Phalaris arundinacea*) make up a significant bulk of the vegetation cover. In many of the terrestrial plant communities, invasive species such as Common Buckthorn (*Rhamnus cathartica*) and Multiflora Rose (*Rosa multiflora*) are a common occurrence.

Four provincially rare species (rank of S1 - S2) were observed in the Study Area: Butternut (*Juglans cinerea*), American Chestnut (*Castanea dentata*), Honey Locust (*Gledistia triacanthos*), and Cup Plant (*Silphium perfoliatum*) were observed within the Study Area. Two of these species, Butternut and American Chestnut, are designated as both provincially and federally endangered species and are discussed in further detail in Section 5.2.2. No other nationally or provincially endangered, threatened, or special concern species were found. It should be noted that Honey Locust, though provincially rare, is an introduced species in the Hamilton region, and its presence in the Study Area is as a horticultural escapee (Oldham, 2017).

Six of the plant species observed are listed as rare in the Hamilton region; these species are: Northern Catalpa (*Catalpa speciosa*), Norway Spruce (*Picea abies*), Blue Spruce (*Picea pungens*), Hawkweed Oxtongue (*Picris hieracioides*), Ontario Aster (*Symphyotrichum ontarionis*) and Virginia False Dragonhead (*Physostegia virginiana*). Of these six species, only Ontario Aster and Virginia False Dragonhead are native to the Hamilton region. Additionally, three plant species listed as uncommon to the Hamilton region were observed. These

regionally uncommon species are Great Ragweed (*Ambrosia trifida*), American Chestnut (*Castanea dentata*), and Common Pokeweed (*Phytolacca americana*).

4.5.5. Tree Inventory

A tree inventory was prepared in general accordance with the requirements of the City of Hamilton Tree Protection Guidelines (2010). An inventory and assessment of trees located on and within 6 metres outside of defined woodland systems was conducted for the property. Trees identified within the inventory were predominantly located within the northern half of the property associated with existing hedgerows, landscape trees and fragmented cultural woodlands.

The tree inventory documented approximately 1342 trees within the surveyed areas. For the purposes of this report, survey areas were divided into areas A through I and are detailed below.

Area A

Located in the northwest corner of the Subject Property, this area includes trees fronting onto Garner Road and off-property trees associated with the neighbouring property. A summary of the tree information identified for Area A is as follows:

Scientific Name	Common Name	# of Individuals	Relative Average %
<i>Robinia pseudoacacia</i>	Black Locust	10	40
<i>Juglans nigra</i>	Black Walnut	7	28
<i>Acer negundo</i>	Manitoba Maple	2	8
<i>Quercus rubra</i>	Red Oak	1	4
<i>Acer saccharum</i>	Sugar Maple	2	8
<i>Picea glauca</i>	White Spruce	3	12
Total		25	

Area B

Area B is associated with the WODM4-4 community located in the northern portion of the property. A summary of the tree information identified for Area B is as follows:

Scientific Name	Common Name	Number of Individuals	Relative Average %
<i>Acer saccharum</i>	Sugar Maple	1	<1
<i>Juglans cinerea</i>	Butternut	1	<1
<i>Juglans nigra</i>	Black Walnut	294	97
<i>Populus tremuloides</i>	Trembling Aspen	1	<1
<i>Prunus serotina</i>	Black Cherry	3	1
<i>Dead</i>		2	1
Total		302	

Area C

Located in the northeast portion of the property, Area C predominantly includes planted landscape trees and trees contained within hedgerows. A summary of the tree information identified for Area C is as follows:

Scientific Name	Common Name	Number of Individuals	Relative Average %
<i>Acer platanoides</i>	Norway Maple	17	15
<i>Acer saccharinum</i>	Silver Maple	4	4
<i>Acer saccharum</i>	Sugar Maple	5	4
<i>Acer sp.</i>	Maple	1	1
<i>Betula papyrifera</i>	White birch	4	4
<i>Carya ovata</i>	Shagbark Hickory	1	1
<i>Fagus grandifolia</i>	American Beech	1	1
<i>Juglans nigra</i>	Black Walnut	33	29
<i>Malus sp.</i>	Apple	1	1
<i>Picea abies</i>	Norway Spruce	1	1
<i>Picea glauca</i>	White Spruce	5	4
<i>Picea pungens</i>	Colorado Spruce	7	6
<i>Picea sp.</i>	Spruce	1	1
<i>Pinus nigra</i>	Austrian Pine	1	1
<i>Pinus sylverstris</i>	Scots Pine	1	1
<i>Prunus serotina</i>	Black Cherry	3	3
<i>Quercus rubra</i>	Red Oak	3	3
<i>Robinia psuedoacacia</i>	Black Locust	6	5
<i>Salix sp.</i>	Willow	5	4
<i>Thuja occidentalis</i>	White Cedar	1	1
<i>Ulmus pumila</i>	Siberian Elm	3	3
Dead		8	7
	Total	112	

Area D

Area D includes a small area in the northeast corner adjacent existing development. A summary of the tree information identified for Area D is as follows:

Scientific Name	Common Name	Number of Individuals	Relative Average %
<i>Acer platanoides</i>	Norway Maple	1	3
<i>Acer saccharum</i>	Sugar Maple	4	12
<i>Juglans nigra</i>	Black Walnut	5	18
<i>Prunus avium</i>	Sweet Cherry	5	15
<i>Prunus serotina</i>	Black Cherry	1	3
<i>Robinia psuedoacacia</i>	Black Locust	9	30
<i>Salix sp.</i>	Willow	7	24
Dead		1	3
	Total	33	



Area E

Area E is located on the east side of the property and includes on-site trees and trees located in the MTO setback. A summary of the tree information identified for Area E is as follows:

Scientific Name	Common Name	Number of Individuals	Relative Average %
<i>Acer platanoides</i>	Norway Maple	1	1
<i>Acer rubrum</i>	Red Maple	1	1
<i>Acer saccharinum</i>	Silver Maple	2	2
<i>Carya ovata</i>	Shagbark Hickory	2	2
<i>Fraxinus americana</i>	White Ash	1	1
<i>Juglans nigra</i>	Black Walnut	34	34
<i>Picea glauca</i>	White Spruce	2	2
<i>Pinus nigra</i>	Austrian Pine	1	1
<i>Pinus sp.</i>	Pine	1	1
<i>Pinus sylvestris</i>	Scots Pine	5	5
<i>Prunus serotina</i>	Black Cherry	9	9
<i>Quercus rubra</i>	Red Oak	1	1
<i>Salix sp.</i>	Willow	37	37
<i>Dead</i>		3	3
	Total	100	

Area F

Area F is located on the property along the eastern limit. A summary of the tree information identified for Area F is as follows:

Scientific Name	Common Name	Number of Individuals	Relative Average %
<i>Juglans nigra</i>	Black Walnut	5	12
<i>Malus sp.</i>	Apple	1	2
<i>Picea glauca</i>	White Spruce	1	2
<i>Pinus nigra</i>	Austrian Pine	1	2
<i>Quercus rubra</i>	Red Oak	1	2
<i>Salix sp.</i>	Willow	28	68
<i>Taxus sp.</i>	Yew	2	5
<i>Dead</i>		2	5
	Total	41	

Area G

Area G includes portions of a central hedgerow and trees located within the wetland. A summary of the tree information identified for Area G is as follows:

Scientific Name	Common Name	Number of Individuals	Relative Average %
<i>Acer negundo</i>	Manitoba Maple	3	3
<i>Acer platanoides</i>	Norway Maple	1	1
<i>Acer rubrum</i>	Red Maple	1	1
<i>Acer saccharinum</i>	Silver Maple	1	1
<i>Betula papyrifera</i>	White birch	4	5
<i>Juglans nigra</i>	Black Walnut	24	28
<i>Prunus serotina</i>	Black Cherry	1	1
<i>Quercus rubra</i>	Red Oak	1	1
Salix sp.	Willow	45	52
Dead		5	6
	Total	86	

Area H

Located immediately south of Area G, this area includes a few small tree clusters located in the agricultural field and in the wetland. A summary of the tree information identified for Area H is as follows:

Scientific Name	Common Name	Number of Individuals	Relative Average %
<i>Populus deltoides</i>	Cottonwood	14	33
Salix sp.	Willow	28	67
	Total	42	

Area I

Area I is located along the southwestern property limit. A summary of the tree information identified for Area I is as follows:

Scientific Name	Common Name	Number of Individuals	Relative Average %
<i>Acer negundo</i>	Manitoba Maple	4	7
<i>Betula alleghaniensis</i>	Yellow Birch	1	2
<i>Crataegus sp.</i>	Hawthorn	9	15
<i>Fraxinus americana</i>	White Ash	5	8
<i>Juglans nigra</i>	Black Walnut	5	8
<i>Malus sp.</i>	Apple	1	2
<i>Prunus avium</i>	Sweet Cherry	1	2
<i>Prunus serotina</i>	Black Cherry	20	34
<i>Quercus rubra</i>	Red Oak	9	15
<i>Sorbus sp.</i>	Mountain Ash	1	2
<i>Ulmus americana</i>	White Elm	2	3
Dead		1	2
	Total	59	



Area J

Area J is located to the east of Area B and included individual trees and three tree polygons labelled P1 to P3. A summary of the tree information identified for Area J is as follows:

Scientific Name	Common Name	Number of Individuals	Relative Average %
<i>Acer platanoides</i>	Norway Maple	4	8
<i>Acer saccharum</i>	Sugar Maple	1	2
<i>Carya ovata</i>	Shagbark Hickory	1	2
<i>Juglans nigra</i>	Black Walnut	31	60
<i>Juniperus virginiana</i>	Red Cedar variety	1	2
<i>Larix laricina</i>	Tamarack	1	2
<i>Picea glauca</i>	White Spruce	1	2
<i>Pinus nigra</i>	Austrian Pine	4	8
<i>Pinus resinosa</i>	Red Pine	1	2
<i>Prunus serotina</i>	Black Cherry	2	4
<i>Thuja occidentalis</i>	White Cedar	2	4
Dead		3	6
	Total	52	

Due to GPS error as a result of dense canopy and shrub cover, trees located within P1, P2 and P3 were surveyed for size and species, including a 100% tally of trees 10 cm DBH and greater and not by location. The results of the tallies are described below.

P1

- Approximately 0.19 ha in size
- Approximately 65 trees at 10 cm DBH or greater
- Area of Silver Maple (*Acer saccharinum*) regeneration
- Eastern White Cedar hedgerow at the south edge
- Blue Spruce (*Picea pungens*) hedgerow along the north edge

P2

- Approximately 0.27 ha in size
- Approximately 200 trees at 10 cm DBH or greater
- Scots Pine (*Pinus sylvestris*) hedgerow at the north end
- Blue Spruce and Eastern White Cedar hedgerows at the south edge
- Regeneration: White Birch, Trembling Aspen, Black Walnut
- Other tree species: Manitoba maple (*Acer negundo*) and Willows

P3

- Approximately 0.47 ha in size
- Approximately 225 trees at 10 cm DBH or greater
- Scots Pine (*Pinus sylvestris*) hedgerow at the north end
- Blue Spruce and Eastern White Cedar hedgerows along south northeastern edges
- Regeneration: White Birch, Black Locust, Trembling Aspen, Black Walnut

Of the species surveyed for the property outside of P1 to P3, 76% are native, and 24% are non-native. The dominant species is the Willow species, and associate species are Black Walnut, Black Cherry, Black Locust and Norway Maple. A summary of species surveyed for Areas A to J is provided below:

Scientific Name	Common Name	Number of Individuals	Relative Average %
<i>Acer negundo</i>	Manitoba Maple	8	0.9
<i>Acer plantanoides</i>	Norway Maple	25	2.9
<i>Acer rubrum</i>	Red Maple	2	0.2
<i>Acer saccharinum</i>	Silver Maple	7	0.8
<i>Acer saccharum</i>	Sugar Maple	13	1.5
<i>Acer sp.</i>	Maple	1	0.1
<i>Betula alleghaniensis</i>	Yellow Birch	1	0.1
<i>Betula papyrifera</i>	White Birch	8	0.9
<i>Carya ovata</i>	Shagbark Hickory	3	0.4
<i>Crataegus sp.</i>	Hawthorn	9	1.1
<i>Fagus grandifolia</i>	American Beech	1	0.1
<i>Fraxinus americana</i>	White Ash	6	0.7
<i>Juglans cinerea</i>	Butternut	1	0.1
<i>Juglans nigra</i>	Black Walnut	436	51.2
<i>Juniperus virginiana</i>	Red Cedar	1	0.1
<i>Larix laricina</i>	Tamarack	1	0.1
<i>Malus sp.</i>	Apple	3	0.4
<i>Picea abies</i>	Norway Spruce	1	0.1
<i>Picea glauca</i>	White Spruce	14	1.6
<i>Picea pungens</i>	Colorado Spruce	7	0.8
<i>Picea sp.</i>	Spruce	1	0.1
<i>Pinus nigra</i>	Austrian Pine	7	0.8
<i>Pinus resinosa</i>	Red Pine	1	0.1
<i>Pinus sp.</i>	Pine	2	0.2
<i>Pinus sylverstris</i>	Scots Pine	6	0.7
<i>Populus deltooides</i>	Cottonwood	14	1.6
<i>Populus tremuloides</i>	Trembling Aspen	1	0.1
<i>Prunus avium</i>	Sweet Cherry	6	0.7
<i>Prunus serotina</i>	Black Cherry	39	4.6
<i>Quercus rubra</i>	Red Oak	16	1.9
<i>Robinia psuedoacacia</i>	Black Locust	25	2.9
<i>Salix sp.</i>	Willow	150	17.6
<i>Sorbus sp.</i>	Mountain Ash	1	0.1
<i>Taxus sp.</i>	Yew	2	0.2
<i>Thuja occidentalis</i>	Eastern white cedar	3	0.4
<i>Ulmus americana</i>	White Ash	2	0.2
<i>Ulmus pumila</i>	Siberian Elm	3	0.4
Dead		25	2.9
Total		852	100



Hedgerows consist primarily of Eastern White Cedar (*Thuja occidentalis*) in addition to Spruce (*Picea* sp.) and Pine trees (*Pinus* sp.). Landscape trees include mature, planted individuals of various species contained within front and rear yards and along associated property limits.

A fragmented woodland was identified along the northern portion of the property and is traversed by informal agriculture access paths. The woodland has been impacted by existing and historical land use, resulting in negative changes to the vegetation composition and structure, including a number of non-native, invasive species. The woodland is characterized as a Dry-Fresh Black Walnut Deciduous Woodland (WODM4-4, see section 4.5.2 and Map 4) and is nearly a monoculture of mid-aged and mature Black Walnuts. Areas of natural regeneration consist mainly of young, pioneer species, including White Birch (*Betula papyrifera*), Poplar species (*Populus* sp.), Black Locust (*Robinia pseudoacacia*) and Black Walnut (*Juglans nigra*). Based on species composition and structure, the woodland was inventoried in three polygons and is described below.

Tree resources associated with the remainder of the Subject Property are contained within two woodlands, in the southwest (FODM2-1) and southeast (FODM1-1) of the property (refer to section 4.5.2 and Map 5), naturalizing hedgerows and trees within the existing wetland. Trees located within the southwest Significant Woodland and the southeast woodland were not surveyed as part of the tree inventory but are described within the ELC section. Refer to Appendix H for the full tree inventory details.

4.5.6. Amphibians

Two rounds of surveys were conducted at five stations throughout the Study Area. Amphibian call count stations are located on Appendix A, Figure 3.

Details from each amphibian call count survey are provided below in Table 10 and Table 11. Written summaries and additional details of each call count station and survey are included below the tables.

Table 10: Stantec’s 2016 Amphibian Survey Results.

Station ID	Round	Date Surveyed	Species Present (Highest Call Code)
A	1	April 20, 2016	Spring Peeper (3) calling in the woodlot on east side of Hwy 6 outside of Study Area
	2	May 12, 2016	Spring Peeper (3) calling in the woodlot on east side of Hwy 6 outside of Study Area
B	1	April 20, 2016	Spring Peeper (3) calling in the woodlot immediately west of the Study Area
	2	May 12, 2016	Spring Peeper (3) calling in the woodlot immediately west of the Study Area
C	1	April 20, 2016	No amphibians
	2	May 12, 2016	No amphibians
D	1	April 20, 2016	American Toad (1-3)
	2	May 12, 2016	American Toad (1-3); Green Frog visual observation at Station D
E	1	April 20, 2016	No amphibians
	2	May 12, 2016	No amphibians



*Table 11: Results of GeoProcess’s 2020 amphibian surveys.
Survey locations use the same as for Stantec’s 2016 surveys.*

Station	Round	Date	Species Present In Station	Species Present Out of Station	Noise Code	Incidental Wildlife
A	1	April 30, 2020	-	Spring peeper, American toad (code 3)	2 (highway)	Woodcock calling
	2	May 23, 2020	Spring peeper, potential for gray treefrog, but at edge of station (code 3)	Gray treefrog, spring peeper (code 3)	3 (highway)	-
	3	June 9, 2020	Northern leopard frog visual observation	Gray treefrog (distant, code 2-3)	3-4 (planes, road)	Fireflies
B	1	April 30, 2020	Spring peeper (code 3)	Spring peeper (code 3)	2 (airplane, highway)	Bats flying off WODM4-4 when walking to station, killdeer in field, woodcock at northwest.
	2	May 23, 2020	-	Gray treefrog, spring peeper (code 3)	3 (highway)	Woodcock in northwest, bats (2) flying by WODM4-4, bat calls
	3	June 9, 2020	-	Observed American toad on field, gray treefrog calling (code 2-3, 3-5 individuals)	3-4 (highway, loud killdeer, planes)	Killdeer (3-4 individuals, quite loud)
C	1	April 30, 2020	-	Spring peeper, American toad (code 3)	2 (highway)	Woodcock calling in station
	2	May 23, 2020	-	Spring peeper (code 3)	3 (highway, fireworks)	Red winged blackbird calling
	3	June 9, 2020	Gray treefrog (code 2, likely 1 individual, but difficult to hear with noise)	Gray treefrog (code 2)	4 (highway, planes, dog barking)	-
D	1	April 30, 2020	-	American toads (2 individuals) visually observed on way to station, Spring peeper (code 3)	2 (highway)	Red winged blackbird (2 individuals) calling
	2	May 23, 2020	Green frog (code 1, only one call)	Spring peeper (code 3)	3 (highway)	Killdeer in field
	3	June 9, 2020	-	Gray treefrog (code 3, faint)	3-4 (highway)	Lots of movement in wetland – ducks, red winged blackbird.
E	1	April 30, 2020	-	Distant spring peeper (code 3)	2 (highway)	Woodcock calling to south of station.
	2	May 23, 2020	-	Spring peeper, green frog (code 3)	3-4 (highway, plane, fireworks)	Red winged blackbird calling
	3	June 9, 2020	Gray treefrog (code 2-3)	-	3-4 (highway)	-



Station A targeted small, shallow vernal pools located within a mature deciduous forest on the southeast edge of the Study Area. Water was observed in the pools in March during the headwaters assessment; however, it was likely too shallow to support breeding amphibians.

Station B targeted potential vernal pooling located in the deciduous forest at the west edge of the Study Area. There was no access to the feature to determine whether vernal pools occurred in the woodlot; however, it was assumed that spring peeper, which was heard calling in a full chorus during both surveys, was breeding in a pond on the adjacent property, outside of the Study Area boundary.

Station C targeted the center of the southern part of the wetland on the Subject Property that consisted of cattail and common reed meadow marsh. There was only shallow pooling observed in this feature in the spring. No calls were heard at Station C during the surveys.

Station D targeted the north end of the wetland on the Subject Property. There was an area approximately 3 m x 10 m in size and approximately 30 cm deep along the intermittent drainage draw. American Toad was observed calling in this feature during both surveys.

Station E targeted the intermittent drainage draw north of the wetland on the Subject Property. Water was observed in the channel during both surveys. Water was flowing during the April survey, and standing during the May survey.

4.5.7. Breeding Birds

4.5.7.1. Stantec's Breeding Bird Survey Results

A complete list of birds observed during the breeding bird survey is located in Appendix E. In total, 47 species of birds were observed during the breeding bird survey; 44 of which are likely to be breeding in the Study Area. Observed species not expected to be breeding within the Study Area due to the absence of suitable habitat include great-blue heron, ring-billed gull and cliff swallow. All species observed are ranked S5 (Secure; common and widespread), or S4 (Apparently secure; uncommon but not rare).

In addition to species recorded during breeding bird surveys, great-crested flycatcher and redbellied woodpecker were observed during the summer botanical inventory as incidental observations and are likely breeding in the Study Area. American woodcock was observed conducting its mating display during the April amphibian survey and it is also considered to be breeding in the Study Area. These species are also ranked as S4.

Eastern Wood-Pewee, a provincially and federally designated special concern species, was observed singing in the deciduous forest community (FODM2-1) at the southwest corner of the Study Area during both (2017) breeding bird surveys. Habitat requirements and an assessment of the habitat suitability for eastern wood-pewee is outlined in Section 4.5.10.

4.5.7.2. GeoProcess' Breeding Bird Survey Results

Six breeding bird plots were established within the Subject Property. The surveys were conducted under suitable conditions between 05:00-10:00 during the month of June (Table 12).

Table 12: Breeding bird survey conditions

Visit Date	Visit Time	Temp. Range [°C]	Cloud Cover [%]	Wind Speed [Beaufort scale]
June 01, 2022	07:00-08:23	22-25	50-80	1-2
June 16, 2022	07:06-08:00	22-25	50-80	1-2

The habitat of each plot is as follows:

- 435-1: WODM4-4
- 435-2: WOM/WOD
- 435-3: MAMM1-12
- 435-4: OAGM1 (south of MAMM1-12)
- 435-5: FODM2-1
- 435-6: OAGM1 (north of FODM2-1)

Species heard and/or observed within the 100 m plots were recorded, and the level of breeding evidence (using OBBA protocols) was determined after completion of both surveys Table 13).

OBBA Breeding Evidence Codes

POSSIBLE

- H-** species observed in breeding season in suitable nesting habitat
- S-** singing male present or breeding calls heard in breeding season in suitable habitat

PROBABLE

- P-** pair observed in their breeding season in suitable habitat
- T-** permanent territory presumed through registration of territorial song or presence of adult bird in breeding habitat on at least 2 days, one week or more apart at the same place.
- A-** agitated behaviour or anxiety calls of adults

CONFIRMED

- FY-** recently fledged young or downy young.
- CF-** adult carrying food for young

Table 13: 2022 breeding bird survey results summary

Species	435-1	435-2	435-3	435-4	435-5	435-6	BE	S_Rank
Brown-headed Cowbird	-	-	-	-	-	1	S	S5
American Crow	-	-	-	2	3	1	S	S5
Field Sparrow	2	1	2	-	-	3	S	S4B, S3N
American Robin	4	5	-	3	2	1	S	S5
Great Crested Flycatcher	-	-	-	1	-	1	S	S5B
Willow Flycatcher	-	-	1	1	-	-	S	S4B
European Starling	-	50	-	-	-	-	S	SNA
Eastern Bluebird	2	-	-	-	-	-	S	S5B, S4N
Red-winged Blackbird	4	4	21	5	-	6	S/A/H	S5
Northern Cardinal	2	1	-	1	3	2	S	S5
Baltimore Oriole	-	1	-	-	-	-	S	S4B
Blue Jay	4	-	-	2	1	-	S/T	S5



Species	435-1	435-2	435-3	435-4	435-5	435-6	BE	S_Rank
Common Yellowthroat	2	1	2	1	-	-	H/S/T	S5B, S3N
Swamp Sparrow	-	-	3	1	-	-	S	S5B, S4N
Savannah Sparrow	-	1	-	3	-	2	S	S5B, S3N
Song Sparrow	7	8	8	7	4	7	S	S5
Black-capped Chickadee	1	-	1	-	1	1	S	S5
Chipping Sparrow	1	-	-	-	-	-	S	S5B, S3N
Yellow Warbler	2	3	4	3	1	1	S	S5B
Killdeer	-	-	-	1	1	1	S	S4B
Mourning Dove	-	-	1	-	-	49	S	S5
American Goldfinch	-	2	1	2	1	2	S	S5
Gray Catbird	2	2	-	-	-	-	S	S5B, S3N
Northern Flicker	-	-	-	-	-	1	S	S5
Red-bellied Woodpecker	-	-	-	-	1	-	S	S5
Common Grackle	1	-	-	-	-	-	S	S5
Eastern Towhee	2	-	-	-	-	-	S	S4B, S3N
Carolina Wren	2	-	-	-	-	-	S	S4
Indigo Bunting	-	1	-	-	1	1	S	S5B
Red-tailed Hawk	-	-	-	1	1	-	S	S5
Rose-breasted Grosbeak	-	-	-	-	2	-	S	S5B
Herring Gull	-	-	-	-	-	1	S	S4B,S5N
Horned Lark	-	-	-	-	-	1	H	S4

4.5.7.3. Breeding Bird Survey Assessment

In total, 33 species were recorded during the 2022 breeding bird survey. Three species were identified as having Probable breeding evidence, with the remaining thirty showing some Possible level of breeding evidence. Locally uncommon species in the Hamilton area identified during breeding bird surveys included the great blue heron, red-bellied woodpecker, eastern phoebe, cliff swallow, brown thrasher, vesper sparrow, and chestnut-sided warbler. The Blackburnian warbler was also detected, which is considered rare in Hamilton. Table 14 assesses the suitability of the Study Area for these breeding migrants.

Table 14: Habitat Suitability

Common Name	Preferred Habitat	Habitat in Study Area
Great blue heron	Wetland habitat adjacent/near rivers, lake edges, marshes, and swamps. Breed April-May. Great blue herons' nest in groups and create large stick nests in tall dead standing trees.	Detected outside of breeding range, likely a flyover migrant. The Study Area does not provide breeding habitat.
Red-bellied woodpecker	Forests and woodlands, including oak-hickory forest, pine-hardwood forest, maple and tulip-poplar stands, and pine flatwoods.	The Study Area provides habitat in the FODM2-1.



Common Name	Preferred Habitat	Habitat in Study Area
Eastern phoebe	The breeding habitat of the Eastern Phoebe is open woodland, farmland and suburbs, often near water. They can build nests in overhanging decks, eaves of buildings and bridges.	The Subject Property does not contain any man-made structures which would provide nesting habitat. Likely used the Study Area for foraging.
Cliff swallow	Cliff Swallows gather mud pellets to build their nests, adhering pellets to a cliff or other vertical surface. Commonly used structures include houses, barns, rectangular culverts, and trusses beneath bridges.	The Study Area likely provides foraging habitat and an area to collect mud for nesting.
Brown thrasher	Brown Thrashers nest in thickets, hedgerows, and forest edges.	The Study Area provides breeding habitat in all three preferred forms.
Vesper sparrow	Vesper Sparrows breed in open areas with short, sparse grass and scattered shrubs, including old fields, pastures, weedy fence lines and roadsides, hayfields, and native grasslands.	The Study Area has the potential to provide breeding habitat.
Chestnut-sided Warbler	Breeds in second-growth deciduous woods, overgrown fields, and edge habitat. Prefers brushy thickets, briars, and brambles. They feed mostly in deciduous habitats, where these warblers pick or glean caterpillars and other prey from the undersides of leaves.	The Study Area could provide breeding habitat. Gypsy moth caterpillars were present in the FODM2-1, which would provide Chestnut warblers with an abundance of food.
Blackburnian warbler	Breed in mature coniferous and mixed coniferous-deciduous forests.	Study Area does not present suitable breeding habitat. There is only a small mixed wooded area that does not contain mature trees. The detection was potentially a late migrant or breeding off-site.

Impacts

The Study Area provides habitat to breeding birds in the form of hedgerows, shrub thickets, woodland edges, mature forests, and open fields. The main habitat feature that will be impacted by the proposed development is the conversion of farmland into commercial development. Of the 8 locally uncommon and rare species, the development has the greatest potential to impact Vesper Sparrow habitat, although its preferred habitat is fairly limited within the Subject Property. Higher quality habitat is found within the local area surrounding the Study Area, so its habitat is not being lost from the local area due to this development.



4.5.8. Bat Maternity Colonies

The majority of the trees observed in the WODM4-4 community during the bat maternity colony assessment were black walnuts approximately 25-50 cm in diameter at breast height (dbh); however, none of these trees provided suitable bat maternity colony habitat. One tree cavity was observed in a black cherry identified at the northern edge of the community, as outlined below in Table 15.

Following the MNRF (2017) protocol, which includes trees 10 cm dbh and larger, GeoProcess’s bat maternity colony survey found twenty (20) candidate bat maternity colony trees. These trees ranged in dbh from 11.1 – 75.4 cm. Details of this survey can be found below, in Table 16. Please note that a butternut (DBH 41.4 cm) was found in the WODM4-4 community during this survey, its location can be seen on Map 5. Additional snags were noted east of the WODM4-4 community and in the northwest corner of the Subject Property, but have not been surveyed as they are not anticipated for removal.

In addition, it should be noted that bats were observed flying over the WODM4-4 community during GeoProcess’ amphibian surveys.

Table 15: Stantec’s Bat Maternity Colony Assessment Summary

Tree #	Species	Diameter at Breast Height (cm)	Estimated Tree Height (m)	Estimated Cavity Height (m)	UTM (Zone 17T)
1	black cherry	72	20	10	0583586/4783801

Table 16: Results of GeoProcess’s bat maternity roost surveys

Tree #	Species	DBH (cm)	Height Class	Snag Attributes					Decay Class 1-3	Notes
				Cavity	Loose Bark	Crack	Knot Hole	Other Snag within 10 m		
1	Black cherry	75.4	2	yes	yes	yes	yes	yes	2	Knot hole 2 m up
2	Black walnut	56.5	2	yes	yes	yes	yes	yes	2	Cavity from ground to 4 m up tree, vine competition
3	Black walnut	50.9	2	yes	yes	yes	yes	yes	2	Vine competition, cavities at 3 m & 1 m
4	Black walnut	CD: 14.8, 12.7	2-3	-	yes	-	-	yes	3	
5	Black walnut	29.8	2	-	yes	-	-	-	1-2	Potential cavity under loose bark
6	Black walnut	CD: 12.2, 12.4	4	yes	yes	yes	-	yes	2	Cavity 2-3 m up
7	Black walnut	46.7	2	yes	yes	yes	yes	yes	2	Cavity at 2 m & 4-5 m
8	Black walnut	41.7	2	-	yes	yes	-	-	1	Some branch loss, crack at broken branch @ 3 m



Tree #	Species	DBH (cm)	Height Class	Snag Attributes					Decay Class 1-3	Notes
				Cavity	Loose Bark	Crack	Knot Hole	Other Snag within 10 m		
9	Unknown	54.9	4	yes	yes	yes	yes	-	-	
10	Black walnut	26.3	2	-	yes	-	-	-	1	
11	Black walnut	11.1	3	yes	yes	yes	-	-	-	Cavity at 2 m
12	Black walnut	13.2	3	yes	yes	-	yes	yes	yes	Cavity at 2 m
13	Black cherry	48.4	2	yes	yes	-	yes	-	1	Cavity at ground (30 cm up), natural bark exfoliation
14	Black walnut	34.2	2	-	yes	-	-	-	1	Loose bark forms a chimney
15	Black walnut	40.8	1-2	-	yes	-	yes	-	1	Loose bark on dead branch
16	Black cherry	MS: 7, 20-40	1-2	-	yes	-	-	-	-	One stem is dead, bark naturally exfoliating
17	Black walnut	38.8	1-2	-	yes	-	-	yes	yes	
18	Black walnut	17.4	3-4	-	yes	-	-	yes	yes	
19	Black walnut	43.5	4	yes	-	-	-	yes	-	Cavity at 5 m
20	Black walnut	41.5	1-2	yes	-	-	Yes	-	yes	Cavity at 6m, another potential knot hole further up

Height class 1 = above canopy, 2 = canopy height, 3 = just below canopy, and 4 = well below canopy.
Decay class 1 = healthy, live tree, 2 = declining live tree, part of canopy lost, and 3 = very recently dead, bark intact, branches intact.
Note that all locations were recorded by GPS and can be found on the maps provided in Appendix H.
CD refers to a co-dominant tree
MS refers to a multi-stem tree.

Although the tree identified in Table 15 and Table 16 above exhibited potential habitat for bat maternity colonies, it is not located within a concentration of suitable cavity trees that would attract an abundance of maternal bats.

The FODM2-1 and FODM1-1 communities both contain an abundance of large diameter trees that likely provide suitable habitat for bat maternity colonies. Development is not proposed within these communities, and surveys were therefore not conducted to determine suitability of these communities for bat maternity colonies. The FODM2-1 and FODM1-1 communities have been assumed to provide significant habitat for breeding bats.



4.5.8.1. GeoProcess' Acoustic Monitoring Methods

GeoProcess deployed two Song Meter Mini Bat Ultrasonic recorders in strategic habitat locations in the WODM4-4 community, located on the northwestern portion of the Subject Property. The recorders were set to record and collect full-spectrum data from sunset to sunrise for a minimum of 10 nights. The locations were chosen based on the habitat screening outlined in Section 4.5.8, above.

The collected data were analyzed using SonoBat 4.4.5 North America classifier. This software uses sound files from the acoustic data collector to extract and analyze the full spectrum data, rendering high-resolution sonograms for each call pulse and automated species classification. The automated species classification is further assessed to determine the presence of species at risk bats or significant wildlife habitat.

4.5.8.2. GeoProcess' Acoustic Monitoring Results

Acoustic monitoring analysis resulted in the identification of five bat species

Table 17: Species names and associated codes for the five bat species identified during acoustic analysis

4-letter Code	Scientific Name	Common Name	SAR Status
Epfu	<i>Eptesicus fuscus</i>	Big Brown Bat	Not at risk
Laci	<i>Lasiurus cinereus</i>	Hoary Bat	Not at risk
Lano	<i>Lasionycteris noctivagans</i>	Silver Haired Bat	Not at risk
Labo	<i>Lasiurus borealis</i>	Eastern Red Bat	Not at risk
Myso	<i>Myotis sodalist</i>	Indiana Bat	Not at risk

Monitor 1: A total of 11,162 audio files were recorded by Monitor 1, with 1,406 files accurately detecting bat activity, of which 1,313 audio files were LoF calls and 93 audio files were HiF calls. SonoBat accepted 339 passes as the Big Brown Bat, 273 passes as the Hoary Bat, and 69 passes as the Silver Haired Bat; species presence was confirmed by an MLE value of 100%.

Monitor 2: A total of 11,505 audio files were recorded by Monitor 2, with 805 files accurately detecting bat activity, of which 675 audio files were LoF calls and 130 audio files were HiF calls. SonoBat accepted 83 passes as the Big Brown Bat and 163 passes as the Hoary Bat; species presence was confirmed by a MLE value of 100%. Sonobat also accepted 1 pass as the Eastern Red Bat, 13 passes as the Silver Haired Bat, and 1 pass as the Indiana Bat; however, the MLE percentage was below 75% for all three species, therefore these bats were not confirmed by Monitor 2.

4.5.9. Species at Risk

Several young butternuts were identified by Stantec within the THDM3 hedgerow along the eastern edge of the Subject Property, and three young butternuts were observed in the FOD in the northwest corner of the Subject Property. Surveys conducted by GeoProcess did not identify any Butternut within the THDM3 hedgerow during the 2021 field investigations.



GeoProcess performed a rapid tally of butternut trees in the mentioned communities and found 28 individuals off property in the northwest corner, with protection zones (25 m for the trunk) that extend onto the Subject Property. An additional Butternut is located in the WODM4-4 community. Individuals range in dbh from 5-43 cm, and the majority of these trees have butternut canker present. If removal of these trees is to occur, a more detailed Butternut Health Assessment and DNA hybridity assessment will need to occur. These assessments will also be necessary for the 43 cm dbh butternut that was found in the WODM4-4 community during GeoProcess's bat maternity roost surveys. Butternut canker was not present during the 2020 and 2021 surveys conducted by GeoProcess. The butternut was assessed in 2024 to determine if it was likely a hybrid using field indicators.

Based on the field assessment, it was determined that the tree was a hybrid. The tree displayed numerous hybrid characteristics: a large and healthy condition, a straight trunk, a full canopy of long, dark green leaves, and no evidence of damage by Butternut Canker. The fruit displayed intermediate characteristics between *Juglans* species, further pointing towards its hybrid status. Upon further investigation, the pith of the stem was light brown and widely chambered, distinguishing it from a true Butternut, which consistently has dark brown pith with narrow chambers.

One American chestnut (endangered provincially and federally) was located in the FODM2-1 community in the southwest corner of the Subject Property.

GeoProcess examined the American Chestnut during field surveys in spring and fall of 2020, and it was documented in poor condition with heavy crown dieback. There is limited evidence of root viability, with limited epicormic branching documented in the fall of 2020. Re-examination of the tree in 2024 and 2025 found that the tree was completely dead and had fallen over in 2025. No evidence of living roots were observed or viable young.

No other nationally or provincially endangered or threatened species were observed during field investigations.

Appendix C lists threatened and endangered species known to occur in the City of Hamilton as per MNRF Correspondence (Appendix B); however, field investigations confirmed that habitat for threatened and endangered species is absent from the Study Area, with the exception of habitat for endangered bat species. Potential habitat for endangered bat species is discussed below in Section 4.5.10.

4.5.10. Wildlife Habitat

Significant wildlife habitat is one of the more complicated natural heritage features to identify and evaluate. Pursuant to the SWH Criteria Schedules for EcoRegion 7E (MNRF 2015), there are four general types of significant wildlife habitat: (a) seasonal concentration areas, (b) rare or specialized habitat, (c) habitat for species of conservation concern and (d) animal migration corridors. The Wildlife Habitat Assessment table in Appendix F provides an assessment for each of the Candidate Wildlife Habitat features listed in the SWH Criteria Schedules. A summary of each type of significant wildlife habitat is provided in Sections 4.5.10.1 to 4.5.10.4.

4.5.10.1. Seasonal Concentration Areas

Seasonal concentration areas are those sites where large numbers of a species gather together at one time of the year, or where several species congregate. Such areas include, but are not limited to, deer yards, snake and bat hibernacula, waterfowl staging and moulting areas, raptor roosts, bird nesting colonies, shorebird staging areas, and passerine migration concentrations. Only the best examples of these concentration areas are usually designated as significant wildlife habitat. Areas that support a species at risk, or areas where a large proportion of the population may be lost if the habitat is destroyed, are examples of seasonal concentration areas which should be designated as significant (MNR, 2000).

The following candidate habitat for seasonal concentration areas was identified within the Study Area during field investigations:

Bat Maternity Colonies

According to the SWH Criteria Schedule, significant bat maternity colonies can be found in FOD, FOM, SWD and SWM ELC communities. Potential candidate bat maternity colony habitat therefore occurs in the Study Area within the FODM2-1 and FODM1-1 communities. All trees within the WODM4-4 community were surveyed for potential suitable tree cavities for roosting bats during leaf-off.

In total, the GeoProcess snag survey found twenty potential snags within the WODM4-4 community. Additionally, the acoustic surveys recorded bat calls within the feature. As a result of these two surveys, the WODM4-4 community is identified as potentially supporting bat maternity roosting habitat. As this woodland is identified for removal, compensation for the removal of potential maternity roosting habitat should be considered within the development, specifically within Open Space blocks.

4.5.10.2. Rare or Specialized Habitat

Rare or specialized habitats are two separate components. Rare habitats are those with vegetation communities that are considered rare in the province. It is assumed that these habitats are at risk and that they are also likely to support additional wildlife species that are considered significant. Preliminary field investigations indicated that the ELC communities within the Study Area are all considered common in Ontario (S5). Therefore, no rare habitats exist within the Study Area, pending confirmation of the ELC communities during summer surveys.

Specialized habitats are microhabitats that are critical to some wildlife species. The SWH Criteria Schedules for EcoRegion 7E (MNRF 2015) identifies a number of habitats that could be considered specialized habitats, such as habitat for area-sensitive species, forests providing a high diversity of habitats, amphibian woodland breeding ponds, turtle nesting habitat, highly diverse sites, seeps and springs.

No rare or specialized habitat for wildlife was identified in the Study Area.

4.5.10.3. Habitat for Species of Conservation Concern

The largest habitat group to be assessed is habitat for species of conservation concern. This includes four types of species: (a) those that are rare, (b) those whose populations are significantly declining, (c) those that have been identified as being at risk to certain common activities, and (d) those with relatively large populations in Ontario compared to the remainder of the globe.

Rare species are considered at five levels: (1) globally rare, (2) nationally rare (COSEWIC), (3) provincially rare (COSSARO), (4) regionally rare (at the Site Region level) and (5) locally rare (in the municipality or Site District). This is also the order of priority that should be attached to the importance of maintaining species.

Field investigations screened the Study Area for the presence or absence of marsh breeding birds, area sensitive breeding birds, terrestrial crayfish and species of conservation concern within the Study Area. Investigations documented two species of conservation concern that are summarized below.

Special Concern and Rare Wildlife Species

Eastern wood-pewee and monarch were observed during the field investigations.

Eastern Wood-Pewee

Eastern wood-pewee, was observed singing in the deciduous forest community (FODM2-1) at the southwest corner of the Study Area during both breeding bird surveys. The eastern wood-pewee is ranked as S4B (apparently secure breeding status) in Ontario and is designated as special concern provincially.

The eastern wood-pewee is a forest bird of deciduous and mixed woods. Nest-site selection favors open space near the nest, typically provided by clearings, roadways, water, and forest edges. Nests are cryptic as they are covered with lichens, typically appearing like a knot on top of a branch and little is known about nesting behavior (Cadman et al, 2007).

Eastern wood-pewee is presumed to be breeding within the FODM2-1 community.

Monarch

Monarch was observed along the eastern edge of the wetland feature during the summer botanical survey. Monarch is provincially ranked as S4 (apparently secure) and is designated as special concern federally and provincially. In southern Ontario, Monarch (*Danaus plexippus*) is found primarily wherever milkweed and wildflowers (including goldenrods, asters and purple loosestrife) exist (COSEWIC, 2010). The Larvae occur only where milkweed exists; adults are more generalized, feeding on a variety of wildflower nectar (OMNR, 2010). This includes abandoned farmland, along roadsides, and other open spaces where these plants grow (COSEWIC, 2010). An abundance of milkweed was not observed in any of the vegetation communities in the Study Area. Significant habitat for this species is therefore not considered present in the Study Area.

Appendix C lists special concern species known to occur in the City of Hamilton as per MNRF Correspondence (Appendix B) and the NHIC database search. This includes ten birds, four reptiles, one mammal, two insects and two plant species. Although potential habitat for these species was identified during the habitat assessment, targeted surveys excluded most of the species from being present in the Study Area. Targeted surveys were not conducted for Woodland Vole, and potential habitat for this species may occur in the FODM2-1, FODM1-1 and WODM4-4 communities in the Study Area.

4.5.10.4. Animal Movement Corridors

Migration corridors are areas that are traditionally used by wildlife to move to one habitat from another. This is usually in response to different seasonal habitat requirements. The SWH Criteria Schedules for EcoRegion 7E (MNRF, 2015) speak specifically to amphibian movement corridors. These corridors are only considered

when wetland breeding amphibian habitat is identified for eastern newt, blue-spotted salamander, spotted salamander, gray treefrog, spring peeper, western chorus frog or wood frog.

No significant wetland breeding amphibian habitat was identified within the Study Area, and therefore, no significant Animal Movement Corridors are present within the Study Area. A small number of amphibians were recorded calling within the various vegetation units within and adjacent to the Subject Property. It is recognized that a few of these individuals may be moving across the site between habitat units. It is recommended that providing ways for wildlife to move across the property post-development be considered.

4.5.11. Incidental Wildlife Observations

Incidental mammal species observed during the field surveys included white-tailed deer and eastern cottontail. Bird species included American woodcock, blackburnian warbler, eastern kingbird, great-crested flycatcher, red-bellied woodpecker and ruby-crowned kinglet. A complete list of wildlife species observed during all field investigations is located in Appendix E.

Table 18 below shows all incidental species observed during field work conducted by GeoProcess in 2025.

Table 18: Incidental Wildlife (GeoProcess, 2025)

Common Name	Scientific Name	S-rank*
American Goldfinch	<i>Spinus tristis</i>	S5
American Robin	<i>Turdus migratorius</i>	S5
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5
Blue Jay	<i>Cyanocitta cristata</i>	S5
Carolina Wren	<i>Thryothorus ludovicianus</i>	S4
Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	S5
Gray Catbird	<i>Dumetella carolinensis</i>	S5B,S3N
Monarch	<i>Danaus plexippus</i>	S4B,S2N
Mourning Dove	<i>Zenaida macroura</i>	S5
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5
Northern Flicker	<i>Colaptes auratus</i>	S5
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	S5B
Shamrock Orbweaver	<i>Araneus trifolium</i>	S5
White-tailed Deer	<i>Odocoileus virginianus</i>	S5
Wild Turkey	<i>Meleagris gallopavo</i>	S5

*S-rank is a subnational rank indicating regional rarity. A species that is S1 is critically imperiled, while a species listed as S5 is considered secure within the region.

4.6. Aquatic Resources

The drainage draw within the wetland boundary was walked along its entire length, and four other locations around the Study Area were walked to determine if headwater drainage features were present. Flowing water was noted in the ditch of the Highway 6 right-of-way. The only flowing feature observed in the Study Area



was the drainage draw contained within the boundaries of the wetland on the east side of the site. Some disconnected areas of standing water were observed in the agricultural fields, and standing water was also present within the furrows at the edge of the wetland vegetation. These areas were not connected by flow paths to any channel or natural feature and would be considered as no feature present in the headwater drainage feature guidelines. Standing water was present only due to snow melt on the landscape. Active flow was observed in the channel feature of the wetland, and no other flowing features were observed on site. The wetland drainage draw was observed on subsequent site visits for amphibian call count surveys conducted on April 20 and May 12. Active flow was observed during the April 20 visit, while standing water was present on May 12.

4.6.1. Headwater Drainage Feature

An HDF assessment was completed for the property in the spring of 2021. The assessment looked at four features identified from aerial imagery prior to the field assessment (Map 7).

Site assessments occurred at the following times:

- Visit 1: April 9, 2021. Only HDF4 had flow or standing water present.
- Visit 2: May 11, 2021. Only HDF4 had standing water present
- Visit 3: July 28, 2021. No flow present in any of the HDFs

HDF1: A small feature that conveys flow from the woodland in the southeast corner of the property to the central wetland. This feature has no defined low flow channel and is cropped through.

HDF2: A small feature that is difficult to discern in the field. It conveys flow from the eastern property limit to the central wetland. There is no defined low flow channel, and the feature is cropped through.

HDF3: A small feature that is difficult to discern in the field. It conveys flow from the eastern property limit to the central wetland. There is no defined low flow channel, and the feature is cropped through.

HDF4: This is the main drainage feature on the property, originating in the wetland community, conveying flow north and off the property.

4.6.1.1. HDF Assessment Results

The 2014 HDF Guidelines provides a classification system for the HDF features based on the field data collected. The classification involves a four-step process which considers hydrology, riparian vegetation, fish habitat and terrestrial habitat (Figure 1). These four classification steps are then used to assign a recommended management approach. Table 19 below provides a summary of the classification for each of the HDFs found on the Subject Property.

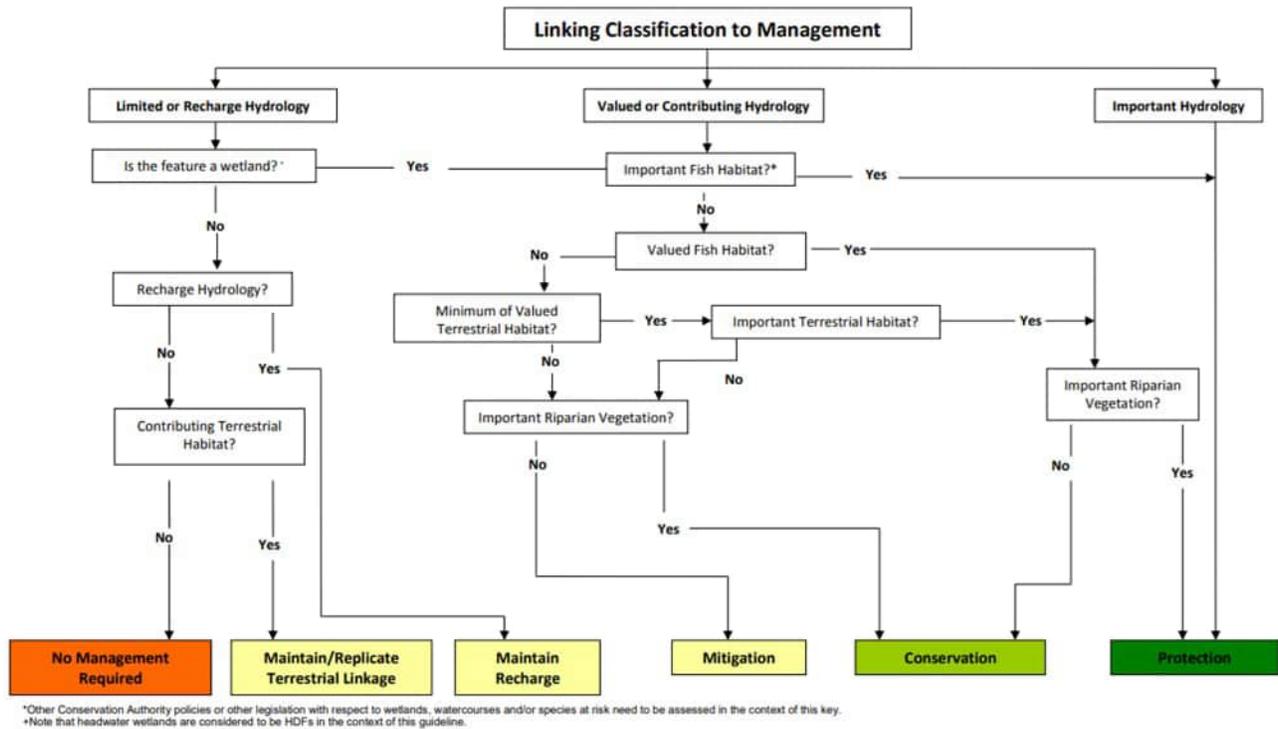


Figure 1: HDF Classification Flow Chart from the TRCA's Evaluation, Classification and Management of Headwater Drainage Features Guidelines (2014)

Table 19: HDF Assessment Results

Drainage Feature Segment	STEP 1		STEP 2	STEP 3	STEP 4	Management Recommendation
	Hydrology	Modifiers	Riparian	Fish Habitat	Terrestrial Habitat	
HDF 1	Limited Functions	Agriculture	Limited Functions	Contributing Functions	Limited Functions	No Management Required
HDF 2	Limited Functions	Agriculture	Limited Functions	Contributing Functions	Limited Functions	No Management Required
HDF 3	Limited Functions	Agriculture	Limited Functions	Contributing Functions	Limited Functions	No Management Required
HDF 4	Valued Functions	Agriculture	Important Functions	Contributing Functions	Important Functions	Protection



4.6.1.2. Management Recommendation

The 2014 HDF Guidelines provides management recommendations related to HDFs, which are to be considered in conjunction with other assessment tools. As stated in the guidelines: *"The outcome of applying this guideline should be integrated with the results of other studies ... and relevant information should be used to tie back to aquatic functions, and vice versa"*. In addition, the 2014 HDF Guidelines recognize that: *"[o]ther Conservation Authority policies or other legislation with respect to wetlands, watercourses and/or species at risk need to be assessed in the context of [the management options] key"* (ref. p. 20).

The HDF assessment for the Subject Property identified a management recommendation of:

- **Protection** for HDF 4;
- **No Management Required** for HDF 1, HDF 2 and HDF 3.

The 2014 HDF Guidelines provides the following direction for each of the management recommendations:

Protection – Important Functions:

- Protect and/or enhance the existing feature and its riparian zone corridor, and groundwater discharge or wetland in-situ;
- Maintain hydroperiod;
- Incorporate shallow groundwater and base flow protection techniques such as infiltration treatment;
- Use natural channel design techniques or wetland design to restore and enhance existing habitat features, if necessary; realignment not generally permitted;
- Design and locate the stormwater management system (e.g. extended detention outfalls) are to be designed and located to avoid impacts (i.e. sediment, temperature) to the feature.

No Management Required – Limited Functions:

- The feature that was identified during desktop pre-screening has been field verified to confirm that no feature and/or functions associated with headwater drainage features are present on the ground, and/or there is no connection downstream. These features are generally characterized by a lack of flow, evidence of cultivation, furrowing, presence of a seasonal crop, and lack of natural vegetation. No management recommendations required.

5. Species at Risk Screening

The Endangered Species Act, 2007, S.O. 2007, was passed to protect the biodiversity of Ontario by using the best available scientific, community, and indigenous traditional knowledge and the precautionary principle as its doctrine. The purpose of the Act is to identify species at risk, protect species at risk and their habitats, and promote the recovery of species at risk and stewardship activities that assist in these goals. The Committee on the Status of Species at Risk in Ontario (COSSARO) functions to maintain an up-to-date database of information pertaining to species in Ontario and their classification. COSSARO advises the Minister of the Environment, Conservation and Parks, who makes and files a regulation that lists all plant and animal species classified by COSSARO as extirpated, endangered, threatened, or of special concern. This regulation is the Species at Risk in Ontario List (Ontario Regulation 230/08). Ontario Regulation 242/08 provides general policies concerning exemptions and habitat specifications for those listed SAR species.

5.1. Species at Risk Long List

A Long List of potential SAR was developed for the Study Area based on Provincial and Federal status. Following the MECP Client’s Guide to Preliminary SAR Screening (2019), this screening was based on a review of the Natural Heritage Information Centre (NHIC) database (Atlas ID: 17NH8483,17NH8383), the regional species list, atlases (Ontario Breeding Bird, Butterfly, Moth, Reptile and Amphibian; Atlas Square: 17NH88), citizen science databases (i.e. iNaturalist and eBird), and any additional sources provided by the MECP. Descriptions of the various data sources are included in Appendix I. Observations of SAR within these squares do not necessarily represent observations within the boundaries of the Study Area. The SAR Long List is provided in Table 20 below for data sources acquired on October 31, 2025.

Table 20: Screening results

Species		Status		
Common Name	Scientific Name	S_Rank	SARO	SARA
Birds				
Barn Swallow ^{2,4}	<i>Hirundo rustica</i>	S4B	SC	THR
Bobolink ^{1,2}	<i>Dolichonyx oryzivorus</i>	S4B	THR	THR
Canada Warbler ²	<i>Cardellina canadensis</i>	S5B	SC	THR
Cerulean Warbler ²	<i>Setophaga cerulea</i>	S2B	THR	END
Chimney Swift ²	<i>Chaetura pelagica</i>	S3B	THR	THR
Common Nighthawk ⁴	<i>Chordeiles minor</i>	S4B	SC	SC
Eastern Meadowlark ^{1,2}	<i>Sturnella magna</i>	S4B,S3N	THR	THR
Eastern Wood-pewee ^{1,2,4}	<i>Contopus virens</i>	S4B	SC	SC
Least Bittern ²	<i>Botaurus exilis</i>	S4B	THR	THR
Louisiana Waterthrush ²	<i>Parkesia motacilla</i>	S2B	THR	THR
Peregrine Falcon ⁶	<i>Falco peregrinus</i>	S4	SC	-
Rusty Blackbird ⁴	<i>Euphagus carolinus</i>	S4B,S3N	SC	SC
Wood Thrush ²	<i>Hylocichla mustelina</i>	S4B	SC	THR
Amphibians and Reptiles				
Eastern Milksnake ^{1,3}	<i>Lampropeltis Triangulum</i>	S4	NAR	SC
Eastern Musk Turtle ³	<i>Sternotherus odoratus</i>	S3	SC	SC
Jefferson Salamander ³	<i>Ambystoma jeffersonianum</i>	S2	END	END
Jefferson Salamander-dependent unisexual salamander ^{3,6}	<i>Ambystoma hybrid pop. 1</i>	S2	END	END
Midland Painted Turtle ^{3,6}	<i>Chrysemys picta marginata</i>	S4	-	SC
Northern Map Turtle ^{3,6}	<i>Graptemys geographica</i>	S3	SC	SC
Snapping Turtle ³	<i>Chelydra serpentina</i>	S4	SC	SC



Species		Status		
Common Name	Scientific Name	S_Rank	SARO	SARA
Timber Rattlesnake ¹	<i>Crotalus horridus</i>	SX	EXP	EXP
Insects				
American Burying Beetle ¹	<i>Nicrophorus americanus</i>	SH	EXP	EXP
Monarch ^{5,6}	<i>Danaus plexippus</i>	S4B.S2N	SC	END
Plants				
Butternut ⁶	<i>Juglans cinerea</i>	S2?	END	END
Spotted Wintergreen ¹	<i>Chimaphila maculata</i>	S2	THR	THR
Molluscs				
Threehorn Wartyback ⁶	<i>Obliquaria reflexa</i>	S1	THR	THR
Sources: ¹ NHIC Database, ² OBBA, ³ Ontario Reptile and Amphibian Atlas, ⁴ eBird Database, ⁵ Ontario Butterfly Atlas, ⁶ iNaturalist				

5.2. Species at Risk Assessment

Based on the screening, in combination with vegetation communities and other environmental features observed during field work, the following species were identified for further assessment:

Possibly Occurring

- Eastern Milksnake (*Lampropeltis triangulum*)
- Midland Painted Turtle (*Chrysemys picta marginata*)
- Species At Risk Bats
- Snapping Turtle (*Chelydra serpentina*)

Confirmed Presence

- American Chestnut (*Castanea dentata*)
- Butternut (*Juglans cinerea*)
- Eastern Wood-pewee (*Contopus virens*)
- Monarch (*Danaus plexippus*)

5.2.1. Possibly Occurring Species

5.2.1.1. Eastern Milksnake (*Lampropeltis triangulum*)

The Eastern milksnake is ranked 'S4' (apparently secure) in Ontario and listed as Special Concern under Schedule 1 of the federal Species at Risk Act (SARA). It is a non-venomous constrictor snake with brightly coloured, variable patterning and glossy, smooth scales. This species is threatened by a variety of factors, including habitat loss and degradation, road mortality, and persecution by humans.

Although no Eastern milksnakes were reported during field studies, this species was flagged during the desktop Species at Risk screening by the Ontario Reptile and Amphibian Atlas. Given this species' use of open and edge habitats, including farm fields and forest edges, for thermoregulation, it is possible that Eastern milksnake could occur onsite. This species is also known to make use of old farm buildings, such as those present onsite, which can provide egg-laying, foraging, and hibernation habitat. No snakes were observed during the three rounds of surveys performed on the Property in 2024.

5.2.1.2. Midland Painted Turtle (*Chrysemys picta marginata*)

The midland painted turtle is ranked 'S4' (apparently secure) in Ontario and is listed as Special Concern under SARA. This is a small to medium-sized turtle species with a smooth, dark green to black upper shell with red markings on the outer shell edges. The lower shell is yellow to tan with a dark central blotch. Midland painted turtles occupy slow moving, relatively shallow and well-vegetated wetlands and water bodies. Threats to this species include road mortality, habitat loss and degradation, invasive species, and nest predation.

Midland painted turtles are known to occur within the Ancaster community, and due to the wetland habitat on site, it is possible midland painted turtle could travel through or inhabit the Study Area. No midland painted turtles were observed during field studies and no habitat with permanent or semi-permanent water was observed in the study area.

5.2.1.3. Species At Risk Bats

Four bat species are listed as Endangered in Ontario: the Eastern Small-Footed Myotis (*Myotis leibii*), the Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis septentrionalis*), and the Tri-colored Bat (*Perimyotis subflavus*). Adequate habitat for these species is present within the Study Area. During field studies, acoustic monitoring methods were deployed, and numerous bat species were found to be present or have a likelihood for presence in the Study Area. However, none of the recorded bat species detected were SAR Bat species, making their presence unlikely.

5.2.1.4. Snapping Turtle (*Chelydra serpentina*)

The Snapping Turtle is ranked 'S4' (apparently secure) in Ontario and is listed as Special Concern under SARA and SARA. This species is Canada's largest freshwater turtle species, and is distinguished by their large, dark shells and long, triangular-shaped tails. Hatchlings have pronounced ridges along the length of their shell that smooth out with age. Threats to this species include slow maturation rates, nest predation, road mortality, and loss of habitat.

Snapping turtles are known to occur within the Ancaster community, and due to the wetland habitat on site, it is possible snapping turtles could travel through or inhabit the Study Area. No snapping turtles were observed during field studies and no habitat with permanent or semi-permanent water was observed in the study area.

5.2.2. Species with Confirmed Presence

5.2.2.1. American Chestnut (*Castanea dentata*)

The American chestnut is ranked 'S1S2' (critically imperiled or imperiled) in Ontario and is listed as Endangered under both SARO and SARA. It is a large deciduous tree species with distinct, coarsely serrated leaves and spiny, bur-like fruits containing edible nuts. Since the introduction of Chestnut Blight to North America in the early 1900s, the American chestnut has been in rapid decline. In Canada, the range of this species is restricted to southwestern Ontario, where it occurs in deciduous forests.

One American chestnut (endangered provincially and federally) was located in the FODM2-1 community in the southwest corner of the Subject Property. No other American chestnuts were observed.

5.2.2.2. Butternut (*Juglans cinerea*)

The butternut is ranked 'S2?' (imperiled) in Ontario and is listed as Endangered under both SARO and SARA. Butternut can be found in the sunny clearings and edges of deciduous forests, and prefers moist, well-draining soils. It can also be found along streams and in floodplains. This species is shade intolerant and readily hybridizes with several exotic *Juglans* species, including the Japanese walnut (*Juglans ailantifolia*) and the Persian walnut (*Juglans regia*).

Once a widespread canopy tree species in southern Ontario, the butternut has been in decline since the introduction of the non-native butternut canker (*Sirococcus clavigignenti-juglandacearum*) to Ontario in the 1990s. Most butternut trees in Ontario are infected with this fungus, with surviving trees few and far between. Trees that persist despite infection are potential sources for genetic disease resistance or tolerance and are crucial for the recovery of the population.

GeoProcess performed a rapid tally of butternut trees in the mentioned communities and found 28 individuals off-property in the northwest corner, with protection zones (25 m for the trunk) that extend onto the Subject Property. One butternut hybrid individual is located in the WODM4-4 community.

5.2.2.3. Eastern Wood-pewee (*Contopus virens*)

The Eastern wood-pewee is ranked 'S4B' (breeding population apparently secure) in Ontario and is listed as Special Concern under both SARO and SARA. This species is a small forest bird with greyish-olive upper parts and pale under parts. The Eastern wood-pewee is distinguished by its clear, three-part song that resembles its name, often transliterated as 'pee-a-wee'. Threats to this species include loss of habitat, habitat degradation and fragmentation, increased predation by predator species such as blue jays, and a decrease in the population numbers of flying insects, which they predominantly feed on.

An Eastern wood-pewee was observed singing in the deciduous forest community (FODM2-1) at the southwest corner of the Study Area during both breeding bird surveys.

5.2.2.4. Monarch (*Danaus plexippus*)

The monarch is ranked 'S4B, S2N' in Ontario, meaning that the breeding population is apparently secure while the nonbreeding population is imperiled within the province. This species is listed as Special Concern under SARO and endangered under SARA. The monarch is a large butterfly with orange and black wings in their adult form. Monarch caterpillars can be distinguished by their black, white, and yellow striping, and will only feed on milkweed species (*Asclepias spp.*).

The Ontario Species at Risk Evaluation Report for Monarch (COSSARO 2020) identified habitat degradation and pollution as the most significant risk to Monarch in Ontario. Specifically, they note that increased use of herbicide and conversion of agricultural lands to more intensive cropping is the most significant risk. They further note that low-risk threats include residential and commercial development on the presence of milkweed and road mortality.

Two monarchs were observed feeding on Red Clover (*Trifolium pratense*) on the mown lawn in the cultural-residential (CVR) community during a vegetation survey performed on August 22, 2025. On August 26, 2025, a monarch caterpillar was observed on milkweed along the edge of Hedgerow One. Further discussion of the presence of this species on site can be found in Section 6.6.1.1. 'Monarch Butterfly Significant Wildlife Habitat Assessment'.

6. Significant Natural Features and Policy Implications

This section provides an assessment of significance of each of the natural heritage features and associated ecological functions within the Study Area. This assessment is based on the Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement (MNR, 2010) and the SWH Criteria Schedules for EcoRegion 7E (MNRF, 2015b). Consideration for the natural heritage designations of the Urban Hamilton Official Plan, which implements similar policies, is also provided.

6.1. Significant Wetlands

6.1.1. Provincially Significant Wetlands

There were no provincially significant wetlands identified within the Study Area.

6.1.2. Other Wetlands

An unevaluated wetland community was identified on the east section of the Subject Property (Appendix A, Figure 4). This wetland has not been identified as a Key Natural Hydrological Feature in the Urban Hamilton OP. Section 3.1.7 (a) of the HCA Policies states that development, site alteration, and/or interference with wetlands will generally not be permitted in or on the areas of non-PSWs or within the adjacent lands of non-PSWs (30 m) unless the hydrological, hydrogeological, and ecological function of the Subject Property and of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on natural features or their ecological functions.

6.1.2.1. Historical Wetland Review

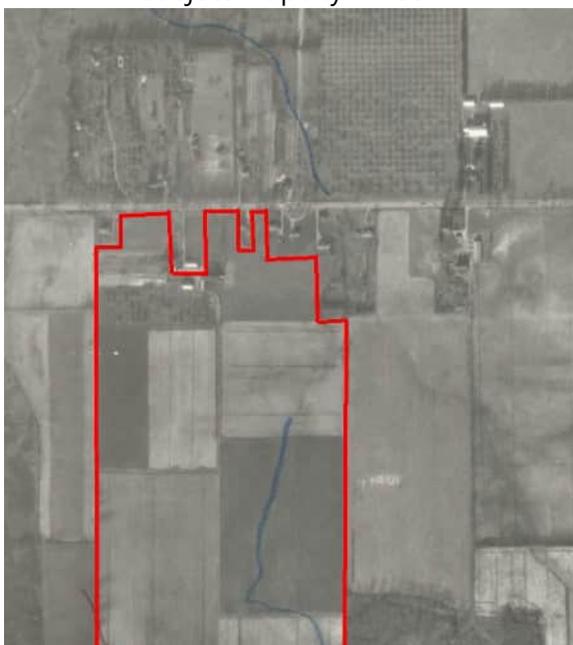
A review of available aerial imagery (1954, 1959, 1967, 1972, 1974, 1977, 1979, 2004 and 2021) was conducted in order to assess the former and current condition of the wetland located on the eastern portion of the Subject Property. In the 1954, 1959 and 1967 aerial photographs, the HDF 4 feature can be seen, however no wetland feature is present. It appears that the entire area was cropped in these three photos. A small depression is evident within the 1972 photograph; however, it appears to be cropped through within the 1972, 1974 and 1977 aerial images. The wetland did not appear in its current form until 1979. As such, it can be inferred that the wetland is approximately 46 years old.



Subject Property in 1954



Subject Property in 1959



Subject Property in 1967



Subject Property in 1972



Subject Property in 1974



Subject Property in 1977



Subject Property in 1979



Subject Property 2004



Subject Property 2021



Subject Property 2023

6.1.2.2. Impacts of Common Reed (*Phragmites australis*)

Common Reed is a fast-growing, perennial grass that reproduces both sexually and asexually. Once established, it forms monotypic stands which quickly reduces wetland plant diversity. The wetland on the Subject Property is approximately 1.8 ha (Map 5) in size. In 2004, the Common Reed monotypic stand was estimated to be 0.22 ha or 11% of the wetland area based on aerial imagery. High-resolution drone imagery captured in 2023 was used to estimate that coverage had increased to approximately 60% of the wetland area at 0.84 ha, a 281% change over a nineteen-year period. Common Reed grows so tightly that it chokes out native plants, reducing wetland diversity and structure, and making the habitat unsuitable for common wetland species such as turtles and snakes (Robichaud and Rooney 2016). Additionally, Common Reed does not support enough insect assemblages compared to a wet cattail community because insects native to Ontario do not prefer it (Robichaud and Rooney 2016). As a result, there is limited food for breeding marsh birds. Generalist species such as the Red-wing Blackbird are found nesting in reed stands; however, more specialist species such as the Least Bittern are quickly losing their habitat to this invasive species.

In addition, the breeding bird surveys completed by Stantec and GeoProcess detected a total of 47 and 33 bird species, respectively, of which nine (9) were considered marsh/wetland birds. All nine species are considered generalists and stable within Ontario. Due to the aforementioned factors, the wetland in question has low structural diversity and habitat value for sensitive marsh breeding species, various birds, amphibians and reptiles.

6.2. Significant Habitat for Endangered and Threatened Species

Butternut was documented on-site within the WODM4-4 community and off-property to the northwest. Butternut individuals identified by Stantec during their field surveys are no longer present on-site. The Ontario Recovery Strategy Series for Butternut (MNR 2013) identifies a 25 m setback to the stem of a Butternut tree. An MNRF authorization may be required for development adjacent to the Butternut occurrences. Authorization requirements depend in part on the results of a Butternut Health Assessment.

The butternut was assessed in 2024 to determine if it was a hybrid using field indicators. The tree was determined to be a hybrid. The field assessment sheet and photos can be found in Appendix L.

One American Chestnut (endangered provincially and federally) was located in the FODM2-1 community in the southwest corner of the Subject Property, approximately 20.3m from the edge of the proposed woodland buffer. The Ontario Recovery Strategy Series for American chestnut (MNR 2012) recommends habitat for American Chestnut to include the ELC community where the tree is located, and if an individual is close to the polygon edge, a 30 m setback from the stem of the tree. An MNRF authorization may be required for development adjacent to the American chestnut occurrence.

GeoProcess's assessment of the American chestnut found that it had declined since the Stantec survey and now appears to be dead, with one possible leader, however the leader's viability could not be confirmed. Based on observations made in 2024 and 2025, the tree has entirely died and is no longer standing. No viable shoots were observed, nor were any young trees found in the area.

No other nationally or provincially endangered or threatened species were observed during field investigations.

Appendix C identifies potential habitat for various threatened and endangered species in the Study Area; however, field investigations confirmed that species at risk habitat is absent from the Study Area, with the exception of habitat for endangered bat species. Potential habitat for endangered bat species is discussed below in Section 6.6.1.

6.3. Fish Habitat

According to a review of fish habitat mapping by Dillon and Aquafor Beech (2011), the intermittent tributary in the eastern portion of the Subject Property is a seasonal warmwater watercourse. It is believed that the Dillon and Aquafor Beech designation was based on desktop mapping, and no site assessment was ever conducted. The MNRF have not identified the watercourse on the Subject Property as supporting direct fish habitat; however, they have identified direct fish habitat further downstream in Ancaster Creek. The watercourse on the Subject Property is only present downstream of the wetland, as there is no defined channel within the wetland. The channel downstream of the wetland is also poorly defined, only having a defined bed and banks in the last approximately 60 m before the northern property limit. The channel lacks morphologic features such as pools, runs and riffles, and would generally be classified as a run throughout. Hydrometric data collected in 2024 found that the channel only conveys intermittent flow, directly dependent on rainfall, and there are no extended periods of base flow in the channel, even between rain events. No fish have been observed within the feature on the Subject Property on any site visit. Based on the evidence provided in background reports and field observation (intermittent flow regime, lack of a defined channel), it has been determined that the feature does not support direct fish habitat within the Subject Property.

While the feature may not provide direct fish habitat, it does provide a number of indirect aquatic habitat functions typical of first-order headwater systems, namely, providing downstream flow and inputs such as organic matter and sediment. These are three important components of a stream's headwaters. The wetland community associated with the feature provides an attenuation of flows, which would then be released over time, providing a regulated flow regime. Organic inputs are critical to providing energy to the system by providing a food source for macroinvertebrates, which then become a food source for larger aquatic organisms such as fish, essentially beginning the downstream transfer of energy. Maintaining sediment inputs and continuity to downstream reaches is important to the fluvial geomorphic processes, which maintain the physical shape of the downstream channel.

A review of the DFO aquatic SAR mapping found there are no aquatic SAR present within the Subject Property or in the immediate downstream reaches of Ancaster Creek.

6.4. Significant Woodlands

There are no significant woodlands identified in the Urban Hamilton Official Plan (City of Hamilton 2013) or the Rural Hamilton Official Plan (City of Hamilton 2012); however, the Study Area contains three woodlands identified as Linkages in the Urban Hamilton OP.

6.4.1. Significant Woodland Evaluation

Criteria suggested by the Natural Heritage Reference Manual (MNR, 2010) for designating Significant Woodlands include woodland size, ecological function (shape, proximity to other woodlands or natural

features, linkages), species diversity, uncommon characteristics, and economic and social values. However, it is the local planning authority’s responsibility to designate Significant Woodlands.

The Urban Hamilton OP significant woodland designations are based on size, presence of interior forest, proximity to water or other significant natural areas, age and the presence of rare species, including species at risk.

The WODM4-4, FODM2-1 and FODM1-1 communities have been assessed for significance in Table 21 using the Urban Hamilton OP criteria based on observations of this community in the field and GIS analysis.

Per Chapter G of the UHOP, Significant Woodlands must meet two or more of the criteria outlined in Table 21.

Table 21: Significant Woodland Assessment, this corresponds to Table 5.1 of Stantec (2018)

Woodland Evaluated	≥4 ha? Y/N	Interior forest Present? Y/N	Within 50 m of a Significant Natural Area? Y/N	Within 30 m of a hydrological feature? Y/N	10 or more trees over 100 yrs old? Y/N	Rare species present (includes SAR)? Y/N
FODM2-1	Y	N	N	Y	Y	N
FODM1-1	N	N	N	Y	N	N
WODM4-4	N	N	N	N	N	N

The minimum patch size for woodland significance is determined using percent forest cover for the planning unit described in the Urban Hamilton OP. For the subject planning unit, forest cover is <15% and forested areas 4 ha or greater are considered significant. The FODM2-1 community is approximately 10 ha (including contiguous forest to the west of the Subject Property) and therefore meets the size criteria for significance. It is within 30 m of a hydrological feature. The boundary of this woodland was delineated under the supervision of City of Hamilton staff on September 21, 2016 (Section 3.2.2).

The WODM4-4 did not meet any of the criteria for significance.

The FODM1-1 community only meets the criteria of being within 30 m of a hydrological feature, as it is within 30 m of headwater drainage features, which extend into the feature. It does not meet the other criteria as the butternut was determined to be a hybrid.

An important consideration for the FODM1-1 woodland is the future expansion of Highway 6. There is currently an Environmental Assessment underway, with the MTO sharing the preliminary design for the Highway 6 widening with the study team. The widening will increase the Highway from its current two lanes to four lanes as a double carriageway separated by a vegetated median. Based on shared design drawings, it appears that the width of the woodland, which is currently around 60 m in width, will be reduced by approximately 25 m to 30 m. In this scenario, the woodland falls below the minimum 40 m width to be classified as a woodland under the UHOP.

The WODM4-4 and FODM1-1 communities do not meet the criteria threshold to be classified as Significant Woodlands.



6.5. Significant Valleyland

There are no significant valleylands identified within the Study Area according to the Urban Hamilton Official Plan (City of Hamilton, 2013).

6.6. Significant Wildlife Habitat

According to the Wildlife Habitat Summary in Section 4.5.10, potential candidate significant wildlife habitat for bat maternity colonies occurs in the Study Area within the FODM2-1, FODM1-1, and WODM4-4 communities, and confirmed significant wildlife habitat for eastern wood-pewee, occurs in the deciduous forest community (FODM2-1) at the southwest corner of the Study Area. Potential habitat for woodland vole may occur in the FODM2-1, FODM1-1 and WODM4-4 communities in the Study Area.

The results of the assessment indicated the presence of candidate and confirmed SWH within two of the five categories, including:

- **Seasonal Concentration Areas of Animals**
 - Bat Maternity Colonies – Candidate
- **Habitat for Species of Conservation Concern**
 - Field Observations of Special Concern and rare wildlife species

The full screening in Appendix J included a review of the ELC codes and habitat criteria for the candidate SWH. Any SWH on the Subject Property or Study Area was noted in Column 4, and a rationale was provided in Column 5.

6.6.1. Bat Maternity Colonies

The FODM2-1, FODM1-1, and WODM4-4 communities were identified as candidate habitat for bat maternity colonies. Because the FODM2-1 and FODM1-1 communities will be retained post-development, only the WODM4-4 community underwent acoustic monitoring to confirm bat presence. Acoustic monitoring of the WODM4-4 community confirmed the presence of three bat species: Big Brown Bat, Hoary Bat, and Silver Haired Bat. Acoustic monitoring also provided evidence of three other species potentially occurring on site: Eastern Red Bat, Silver Haired Bat, and Indiana Bat. A total of 20 trees with snag qualities beneficial for bat maternity colony use were counted in the WODM4-4 community. The presence of adequate roosting habitat, combined with the number of bats observed, indicates that the WODM4-4 serves as bat maternity colony habitat.

6.6.2. Field Observations of Special Concern and Rare Wildlife Species

Four Species at Risk were observed within the Study Area: American Chestnut (*Castanea dentata*), Butternut (*Juglans cinerea*), Eastern Wood-pewee (*Contopus virens*), and Monarch (*Danaus Plexippus*). The potential for significant Monarch habitat is discussed further in Section 6.6.2.1 below.

Additionally, three rare plant species were observed during field studies: Cup Plant (*Silphium perfoliatum*), which is provincially ranked S2 (imperiled), Virginia False Dragonhead (*Physostegia virginiana*) which is provincially ranked 'S4' (apparently secure) but is listed as rare in the Hamilton region, and Ontario Aster

(*Symphyotrichum ontarionis*) which is provincially ranked 'S5' (secure) but is listed as rare in the Hamilton region. The approximate locations of these plants are shown on Map 6.

6.6.2.1. Monarch Butterfly Significant Wildlife Habitat Assessment

Monarch was observed by Stantec along the eastern edge of the wetland feature during the 2016 summer botanical survey. During the 2025 vegetation surveys, additional Monarch observations were recorded in the cultural residential community, as well as a deciduous woodland community, thicket community, and along hedgerow one. Common milkweed (*Asclepias syriaca*), one of several host plant species for the monarch, was observed to occur occasionally throughout many of the plant communities within the Study Area. As such, the Study Area was assessed for potential to provide optimal breeding and nectar-feeding habitat.

The Monarch Butterfly is provincially ranked as 'S4' (apparently secure) in Ontario and is designated as 'Special Concern' federally and provincially. In southern Ontario, the Monarch is found primarily in locations where milkweed and preferred nectar species (including goldenrods and asters) exist. In Canada, Common Milkweed is the main species of milkweed fed on by Monarch caterpillars (COSEWIC, 2010). Although Common Milkweed was observed throughout the Study Area, this species was not abundant in any of the vegetation communities observed.

According to the Saskatchewan Prairie Conservation Action Plan's 'Guide to Managing for Optimal Habitat Attributes: Monarch (*Danaus plexippus*)', optimal breeding habitat for the monarch would have multiple small patches of more than ten stems of milkweed per patch, with the same patch containing greater than eight nectaring plants additional to milkweed, and optimal patches would not be in full sun (Saskatchewan Prairie Conservation Action Plan, 2020). Milkweed presence to this degree was not observed within the Study Area, with Common Milkweed observed to occur occasionally, but not meeting optimal stem density, in four plant communities: CUM1-1, THDM2, MAMM2-4, SWT2-2a. As a result, the milkweed present on the property is not considered to be Significant Wildlife Habitat.

Optimal nectar-plant habitat is defined in the guide by three characteristics: nectar-forb diversity, blooming-forb frequency, and vegetation buffers. Candidates for optimal nectar-feeding habitat within the Study Area include the CUM1-1 and MAMM2-4 communities. The cultural meadow (CUM1-1) community was observed to contain late-season nectaring plants, including various *Asters* (*Symphyotrichum spp.*) and Goldenrods (*Solidago spp.* and *Euthamia graminifolia*), as well as sparse occurrences of Common Milkweed (*Asclepias syriaca*). However, due to the narrow width (100 meters at its widest) of this community and surrounding land uses and vegetation communities, it does not meet the optimal vegetation buffer standards outlined by the Saskatchewan Prairie Conservation Action Plan, which describes optimal nectaring patches to be surrounded by at least 200 meters of perennial herbaceous vegetation.

Similarly, the Mixed Forb Mineral Meadow Marsh (MAMM2-4) community contained occasional amounts of Common Milkweed, as well as various *Asters* and Goldenrods, as well as non-native but high-value nectar plants, including Purple Loosestrife (*Lythrum salicaria*) and Creeping Thistle (*Cirsium arvense*). Other meadow marsh communities on the site were ruled out due to the overall lack of species diversity present within them, which resulted in a low number of nectar-forb species. However, due to the narrow width (50 meters at its widest) of this community throughout its entirety, as well as the surrounding agricultural land use, it does not meet the optimal vegetation buffer standards outlined by the Saskatchewan Prairie Conservation Action Plan.

6.7. Significant Areas of Natural and Scientific Interest

No ANSIs have been identified within the Study Area.

6.8. Linkage Assessment

When development or Site alteration is proposed within a Linkage per Schedule B – Natural Heritage System of the UHOP, the City of Hamilton requires the completion of a Linkage Assessment following City of Hamilton Linkage Assessment Guidelines (2015). Linkages are defined in the City of Hamilton guidelines, “*as remnant natural areas in the landscape that connect or support the function of Core Areas*”. The intent of the Linkage policies is to protect and enhance connections between Core Areas to enhance the ecological functions of the Natural Heritage System. The purpose of the Linkage Assessment is to integrate the design of a development proposal in a manner that protects or enhances the ecological functions of the Linkage (City of Hamilton 2015).

Linkages are intended to increase local species richness and biodiversity, provide more immigration and movement opportunities for individuals among core natural areas, and provide greater likelihood of seed dispersal and exchange of other genetic material between populations. The size and nature of linkages depend on the ecological function it is intended to perform. Environment Canada et al. (2013) suggest a minimum corridor width of 50 to 100 m. Corridors 50 m in width can facilitate movement for common generalist mammal species (Environment Canada, 2013), such as white-tailed deer and raccoon. Other relevant guidelines referenced by Environment Canada (2013) include:

Corridors as narrow as 10 to 30 m are sufficient to support the majority of plants in riparian areas (Spackman and Hughes, 1995)

Corridors in urban environments < 50 m support urban adapted breeding birds (e.g. mourning dove, house wren), while forest birds (e.g. hairy woodpecker) are only found in corridors >50 m wide (Mason et al., 2007)

The WODM4-4, FODM2-1 and FODM1-1 communities are identified as linkages in Section C.2.7.5 of the Urban Hamilton Official Plan.

As per Policy of 2.2.2 of the Urban Hamilton OP, the boundaries of Linkages shown on Schedule B can be refined through an EIS; however, major changes, including the removal of Core Areas and Linkages require an amendment to the OP.

Linkages contained within the Subject Property are shown on Map 2 as well as described in Table 22 and Table 23 below.

Table 22: Summary of Designated Linkages and Ecological Functions, Viability, and Integrity.
Adapted from Stantec (2018)

Ecological Functions	WODM4-4	FODM2-1	FODM1-1
ELC Communities	Naturalizing woodland originating as a deciduous plantation (air photo coverage 1956, 1959, 1967). Mid-aged community dominated by black walnut in the canopy, with rare occurrences of black cherry. Understory includes a dense layer of non-native, invasive species, including Tatarian Honeysuckle and Common Buckthorn. It is approximately 0.84 ha in size.	Dry-Fresh Red Oak Deciduous Forest: Mid-aged to mature community dominated by red oak and red maple with black cherry and white ash. Approximately 1.7 ha falling within the Subject Property.	Mid-aged to mature community dominated by red oak with an abundance of black cherry and occasional white pine. Approximately 1.9 ha in size, with approximately 0.4 ha situated within the Subject Property.
Soil Type/Moisture	Loam/Dry-Fresh	Loam/Dry-Fresh	Loam/Dry-Fresh
Watercourse, water bodies, other drainage	None	HDF	HDF
Areas of groundwater recharge or discharge	None	None	None
Significant species	None	Eastern wood-pewee,	Potential butternut (physiologically presents as a hybrid)
Use by other wildlife, including foraging, resting or dispersal areas for species in the Core Area	Common bird species, small mammals.	Common bird species, small mammals, and spring peeper.	Common bird species, small mammals, and amphibians (grey treefrog, spring peeper).
Connects habitat needed by wildlife to complete their lifecycles (e.g. amphibian movement corridors)	None Known	None Known	None Known
Adjacent to Core Area	No	No	A Core Area is located to the east of Highway 6. However, the highway would act as a barrier to movement for many species.
Adjacent to natural area outside the Study Area	There are two identified Linkage features: one to the northeast, approximately 274 m, separated by Garner Road East; another to the southwest, approximately 366 m on the property to the west.	There is a connection to an adjacent linkage to the south associated with the Hydro corridor, which further connects to core areas outside of the Study Area.	There is a connection to an adjacent core area and linkage through the hydro-corridor to the south, which further connects to core areas outside of the Study Area.



Ecological Functions	WODM4-4	FODM2-1	FODM1-1
Continuous or Broken Linkage	<p>The 0.8 ha WODM4-4 community is located in the northwest corner of the Subject Property, surrounded by agricultural lands to the north, west and south, a residential property to the north and cultural woodlands to the east.</p> <p>This community acts as a broken linkage between the wetland on the east portion of the property and the adjacent property. Wildlife movement from the wetland is restricted to the east by the Highway 6 corridor and the north by residential homes and Garner Road.</p>	<p>The 1.6 ha FODM2-1 community is adjacent to a linkage directly associated with the hydro corridor that extends west into the rural Hamilton area, and east into urban Hamilton. This linkage connects the community to a core area immediately to the east of the Subject Property, and near Fiddler's Green Rd to the west of the Subject Property.</p>	<p>The 1.9 ha FODM1-1 community is bound by agricultural fields to the south and west, Highway 6 to the east and cultural meadow to the north.</p> <p>Major transportation routes act as a barrier to movement for some species. There is an adjacent core area to the east of the Subject Property, across Highway 6. This community also connects to another linkage directly south of the Subject Property, which connects it to other core areas to the west, as mentioned for FODM2-1.</p>
Scale of Linkage Function	<p>Local broken connection between natural features to the west and the headwaters feature/intermittent drainage in the east.</p>	<p>Supports a larger natural heritage feature to the west of the FODM2-1 community. It has only a limited linkage function as the feature does not directly connect to features to the east. It is connected to a larger complex to the west, but as it is situated on the eastern limit, it is not acting as a movement corridor.</p>	<p>Isolated woodland along Highway 6. It has limited linkage function.</p>
Linkage Width	Approximately 78 m.	Approximately 135 m.	Approximately 62 m.



Table 23: Impacts on Linkages

Ecological Characteristics	Proposed Development	Development Impacts	Mitigation Measures
FODM2-1: Dry-Fresh Oak-Red Maple Deciduous Forest	The proposed development is commercial in nature and involves the creation of 5 commercial buildings, a SWM pond, and a road network with one connection to Garner Rd E, and surface parking.	The feature will be retained within the proposed development plan and will provide a 15 metre VPZ. In addition, Open Space blocks immediately to the north and east will be planted with native trees to a woodland density, increasing the overall size of the feature, strengthening its ecological functions and resilience.	A 15 m VPZ will be applied in conjunction with the open space blocks along the northern and eastern boundaries. The Open Space blocks and VPZ will be planted with native trees and shrubs to a woodland density.
WODM4-4: Dry-Fresh Black Walnut Deciduous Woodland Type		This 0.8 ha linkage will be removed as a result of development.	Tree removal is recommended to occur outside breeding bird and bat maternity roosting periods (April to November).
FODM1-1: Dry-Fresh Red Oak Deciduous Forest Type		This linkage is adjacent to the Subject Property and will be retained. A 10 m VPZ is proposed. The largest impact to this feature will not come from this development, rather it will come from the expansion of Highway 6, which may result in a loss of up to fifty percent of the feature.	A 10 m VPZ will be applied. The VPZ is proposed to be planted with trees. A service easement ranging from 6 m to 10 m will abut the VPZ and will be naturalized with native grasses and forbs. Combined, a 16 m to 20 m naturalized setback to the development area will be provided.

Linkages within the NHS identified for the Study Area are associated with fragmented woodland features in the north and south of the property. Major transportation corridors associated with Highway 6, Highway 403 and Garner Road East, along with urban development to the north, have impacted the linkage function across the site.

The proposed development will result in the removal of the one linkage associated with the WODM4-4 community and the retention of the remaining two linkages associated with the FODM2-1 and FODM1-1 communities, with associated buffers. The WODM4-4 community originated as a deciduous plantation, as shown on historical air photo coverage, and over time has naturalized into a Black Walnut woodland with a dense non-native, invasive understory and groundcover. In addition, documented use of the woodland as a storage area for residential/agricultural equipment and supplies associated with the adjacent landowner was noted. Informal trails created by the adjacent landowner were also noted within the feature. As a result of the conditions associated with this feature, its isolated location and proximity to major transportation routes to the north and east, the woodland provides limited functionality on a local and regional scale, nor does it provide supporting habitat to Core Area for most species through the provision of resting or dispersal areas.



Long-term impacts from the removal of this feature are not anticipated, given its ecological value and functions, and its limited connectivity across the landscape. Proposed restoration measures for the property will mitigate the removal of this feature through the inclusion of native species that will provide greater wildlife value for local and migrating species.

The proposed development plan retains both FODM2-1 and FODM1-1 communities with 15 m and 10 m VPZs, respectively, from the staked dripline. Although these features are identified as continuous linkages with the hydro-corridor linkage to the south of the property, the hydro-corridor linkage is currently farmed. It is recognized that animals can generally move freely through agricultural landscapes, although agricultural lands can also pose challenges for animal movement, particularly for small mammals, amphibians, and reptiles. To strengthen the linkage between the FODM2-1 and FODM1-1 communities, an approximately 198-meter long, 10-meter wide vegetated strip has been included in the plan. This strip is intended to have a varied topography with small hills and depressions and be planted with native species. This planted strip will strengthen the hydro-corridor linkage to the south, providing a more ecologically functional linkage between the two woodlands.

6.9. Significant Natural Heritage Features Summary

The following is a summary of the significant natural heritage features found within the study area:

- Significant Habitat for Endangered or Threatened Species:
 - Butternut located in the WODM4-4 (1 hybrid butternut). The 25-metre protection zone associated with Butternut located off-property in the northwest.
 - American Chestnut (FODM2-1 community); however, this tree is now dead.
- Significant Wildlife Habitat:
 - Potential Bat Maternity Colony Habitat (FODM2-1, FODM1-1, and WODM4-4 communities); and
 - Confirmed Habitat for Species of Conservation Concern (FODM2-1 community that supports Eastern Wood-Pewee)
- Significant Woodlands (FODM2-1 community and woodland east of Highway 6)

7. Natural Hazards

Pursuant to Section 3.1 of the PPS, development shall generally be directed to areas outside of the hazardous lands adjacent to river and stream systems that are impacted by flooding hazards and/or erosion hazards. Similar policies exist for HCA to direct development away from hazardous areas. According to HCA's natural hazard mapping, the intermittent drainage draw through the center of the Subject Property occurs within the HCA Regulation Limit and will be subject to HCA development policies.

There are no identified hazard lands within the Study Area. The location of the HCA Regulation Limit is shown on Map 3.

8. Proposed Development

The proposed development is for warehouse usage on the site. Currently, the number and size of the buildings to be constructed are unknown, and the plan reflects only one large development block (Block 1). It is anticipated that up to five buildings could be constructed on the site. The plan assessed includes the following elements: a collector road (Street A) accessed from Garner Road East, a stormwater management (SWM) facility, three Open Space blocks to be planted with trees and shrubs, and two Open Space blocks associated with the wetland outlet channel and associated riparian area, a large wetland, a 10 m linkage along the southern property limit, and an easement corridor which will be a mix of asphalt and vegetation cover. The plan proposes relocating and enlarging the existing wetland, with the wetland's water balance maintained through Low Impact Development (LID) measures, including bioswales, soak away pits, and rooftop water harvesting. According to staking completed with the HCA (Stantec, 2018), the existing wetland feature is approximately 1.8 ha in size, of which 1.6 ha is proposed for relocation. The realigned wetland will be increased in size to 2.67 ha, with a wetland block of 3.94 ha when wetland setbacks are included. The significant woodland (Section 6.4) found in the southwest corner of the subject property will be preserved, and a 15 m VPZ in combination with Open Space Blocks to the north and east. The FODM1-1 woodland community will receive a 10 m VPZ. The SWM pond block will consist of a dry pond and will be fully vegetated. A servicing easement is located along the edge of the natural features (Open Space Blocks, wetland and woodland) along the east side of the property. The easement will be mostly vegetated with grasses and forbs, with a few small portions to be asphalt. The easement will provide additional vegetation cover and complement the site natural heritage system. The site design has resulted in the development area being ringed by natural heritage features and complementary uses (e.g., a vegetated SWM block).

The proposed site plan and resulting natural heritage system are shown on Map 8 and Map 9, respectively.

8.1. Wetland Realignment

Before relocating a wetland is contemplated, consideration has to be given to the applicability of doing so. This is particularly important in Southern Ontario where there has been a loss of wetland cover due to agricultural practices and urbanization. For this application, the mitigation sequence for no net loss of wetlands was considered. The mitigation sequence for the existing wetland and why compensation has been determined to be supportable is outlined in Table 24. A comparison of the known wetland functions (i.e. those that have been quantified through surveys by GeoProcess and Stantec) to eligibility criteria gathered from GeoProcess's review of wetland literature is given in Table 25.

8.1.1. Mitigation Sequence

Table 24: Mitigation Sequence for no net loss of wetlands

	Avoid	Minimize	Mitigate	Compensate/Offset
Description	Prevent impacts by changing the project location, scope, nature, and timing of activities.	Reduce the duration, intensity, and/or extent that cannot be avoided.	Rehabilitate or restore features or functions that have been exposed to impacts that could not be avoided or minimized.	Create or restore new habitat to compensate for loss that could not be avoided, minimized, or mitigated.
Applicability	Consideration was given to maintaining the wetland in its current location or relocating. A fulsome description of the options analysis is provided in Section 8.1.2.	The site plan has been reduced in size to accommodate a larger wetland unit.	Wetland function will be enhanced relative to its current condition through increased plant and habitat diversity.	The wetland will be relocated, and its area will increase from 1.8 ha to 2.8 ha (excluding wetland setbacks). Habitat complexity will be increased through varied topography, open-water features, and diverse native plantings.

8.1.2. Options Analysis

An options analysis was performed to determine how various wetland treatments would affect the form and function of the wetland community under a future development scenario. Two options were considered: 1) maintaining the existing wetland in its current location with a VPZ setback; 2) relocating the wetland with a VPZ setback. Table 25 presents the options analysis. It is important to note that if the existing wetland supports species at risk or diverse wildlife functions and/or a diverse native plant community, wetland relocation would not be considered.

Table 25: Wetland options analysis under future development scenario

Option Criteria	Wetland Maintained in Place	Wetland Relocated	Preferred
Plant Diversity	Wetland plant community will be maintained as it is. This will likely result in phragmites eventually taking over the feature.	Wetland will be planted with a variety of native wetland species, creating a diverse wetland plant community	Relocation
Phragmites Control	There are methods to control phragmites, including physical removal, spraying, cutting, rolling, and burning; additional research is underway to identify additional control and removal methods. These methods typically require multiple years of consecutive interventions and often employ multiple approaches.	The phragmites community would first be cut to remove all stocks, and then the root system would be physically removed with large equipment.	Relocation. Given the timelines associated with development and the time required to control phragmites in place, it will be difficult to implement a phragmites control plan within the scenario of retaining the wetland in place.



Option Criteria	Wetland Maintained in Place	Wetland Relocated	Preferred
Development Interface	The wetland will be surrounded by development along three sides.	The wetland will interface with development along two sides	Relocation
Wetland Hydrology	Rooftop drainage will be directed to the wetland to ensure the existing hydrologic cycle is maintained.	Rooftop drainage will be directed to the wetland to maintain the hydrologic cycle.	Equal
Wildlife Diversity	The wildlife habitat of the current wetland, which is limited, will likely remain approximately the same. There may be a loss of amphibian use of the feature, as: a) connectivity to surrounding habitats such as woodlands will be mostly cut off; b) there is very little to no habitat (open water) to support new generations, making amphibian use highly likely to decline.	The additional habitat complexity that will be introduced into the wetland will enhance wildlife habitat functions. Connectivity to terrestrial habitats such as FODM1-1 will be strengthened. It is predicted that wildlife use should improve relative to the existing condition.	Relocation
Wetland Size	The size of the wetland community will be maintained	The size of the wetland community will be increased by approximately a hectare.	Relocation
Connectivity	The wetland will be connected to the SWM block (which will be vegetated) and the stream corridor. No other direct connections to open space/natural heritage features will be present.	The wetland will be connected to the SWM block (which will be vegetated) and the stream corridor. It will also be connected to the woodland located in the southeastern corner of the property (FODM1-1) via the 14 m MTO setback and VPZ of the two features.	Relocation
Groundwater	The hydrogeologic report indicates that the groundwater table ranges from 1 to 4 m below the surface, depending on the time of year. The shallow groundwater table will be maintained through infiltration galleries and soakaway pits.	The hydrogeologic report indicates that the groundwater table ranges from 1 to 4 m below the surface, depending on the time of year. The shallow groundwater table will be maintained through infiltration galleries and soakaway pits. In addition, deeper pools will intersect the groundwater table, providing open water habitat.	Relocation

Based on the results of the options analysis, the preferred option for the wetland treatment is relocation.



8.1.3. Offsetting Eligibility

Table 26: Overview of the eligibility of the current wetland feature for offsetting

Wetland Criteria	Description	Applicability to Present Project	Eligible for Offsetting?
Policy Designation	Provincially Significant Wetlands (PSWs) and coastal significant wetlands should not be considered eligible for offsetting.	The wetland is unevaluated and would not typically be evaluated because it is under 2 ha. From our experience with the OWES, this wetland would be very unlikely to score enough points to meet provincial significance criteria.	Yes
Wetland Classification / Type	Peat-dominated wetlands that include Bogs and Fens should not be considered eligible for offsetting.	The wetland is not peat-dominated or a bog/fen.	Yes
Vegetation Communities	Ineligible wetlands may contain rare plants and culturally valued harvesting and medicinal plants that cannot be translocated successfully. The composition of vegetation and replaceability also relates to the offset timing. For example, it will take longer to replace a treed swamp in an area without wet-tolerant trees than it will to replace a grass and forb-dominated feature in an open area.	No rare plants or culturally valued plants are known to occur in the wetland. The wetland is dominated by common reed, non-native narrow-leaved cattail and reed canary grass with occasional trees.	Yes
Species at Risk	If wetland removal/relocation will directly impact SAR that cannot be translocated without harm, offsetting should be reconsidered.	No species at risk (i.e., those listed as threatened or endangered under the <i>Endangered Species Act</i>) are known to be associated with the wetland.	Yes
Geography	Offsets should occur as close to the original site as possible (e.g., on site or within same subwatershed).	Offsetting will occur within the same property.	Yes
Hydrologic Regime	If hydrologic flow and function can not be adequately maintained, the wetland may not be a candidate for offsetting. Especial attention should be paid to groundwater-fed wetlands, as this hydrologic regime can be more difficult to re-create.	The hydrogeologic and water balance investigation completed by Burnside found that the shallow groundwater system can be maintained within the proposed development and that it will help maintain a similar hydrologic regime. The water balance analysis determined that both the groundwater and surface water supplied through rooftop harvest will maintain the wetland hydrologic regime.	Yes



Wetland Criteria	Description	Applicability to Present Project	Eligible for Offsetting?
Soil Characteristics	Wetlands with organic substrates can likely not be re-created within a reasonable time frame; this links back to bogs and fens not being eligible for offsetting.	See wetland type above; organic soils are not present.	Yes
Wetland Size	Some policies consider smaller wetlands more eligible for offsetting. However, small and isolated wetlands have been found to offer ecosystem services that may be disproportionate to their area (Marton et al., 2015). The cost and resources that would go into replacing a larger wetland may be prohibitive, and the functions of larger, more complex systems may be harder to quantify.	The wetland size is appropriate for offsetting.	Yes
Cultural Significance	"Cultural significance may include access by elders, hunting, fishing and gathering relationships, sacred sites, economic importance and ceremonial values, for example." (Ontario Nature, 2017)	The wetland is not known to be culturally significant. Based on aerial imagery, the wetland is at maximum around 50 years old.	Yes
Knowledge	Adequate knowledge of wetland functions is critical to ensure the success of offsets.	The wetland has been studied by Stantec (2018), GeoProcess, and Burnside from approximately 2016 to 2025. There is sufficient baseline information on the feature and its functions.	Yes
Wildlife Use	A wetland with significant wildlife use (i.e. confirmed amphibian breeding habitat) might be less replaceable than one without.	Only limited amphibian breeding activity was found, and not enough to designate this as a significant amphibian breeding habitat.	Yes
Timing for Replacement	The replacement wetland should be fully functional within a reasonable timeline for a given project.	Given the relatively simple nature of the wetland (e.g. no organic soils, low canopy cover), it is possible to replace this wetland within a reasonable time frame. The design must be done with consideration of time frames and vegetation establishment. Based on GeoProcess's experience with creating wetland communities dominated by emergent vegetation and shrub thickets, it is reasonable to assume the wetland will be functional after two growing seasons, and fully functional after approximately five years.	Yes – design dependent

Based on the Offsetting Eligibility analysis, the wetland is a candidate for relocation.



8.2. Wetland Realignment Design

The wetland realignment will include maintaining the treed swamp and outlet channel, but relocating a portion of the wetland dominated by phragmites and cattail communities. The existing wetland feature is approximately 1.8 ha, and the proposed design will offset its removal with the creation of 2.57 ha of new wetland. Table 27 provides a breakdown of the existing wetland and proposed wetland sizes.

Table 27: Wetland Sizing Existing and Proposed

Element	Size (ha)
Staked Wetland Area	1.83
Portion of Wetland Retained	0.23
Portion of Wetland Modified	1.6
New Wetland Area in Block 7	2.44
Area of New Wetland in Block 4	0.08
Area of New Wetland in Block 5	0.05
Area of New Wetland Created (4,5,7)	2.57
Total Area of all Wetlands in the Proposal	1.80

The wetland replacement ratio is calculated using the following formula.

$$\text{Replacement Ratio} = \frac{\text{area of new wetland created}}{\text{portion of existing wetland modified}} = \frac{2.57 \text{ ha}}{1.60 \text{ ha}} = 1.61$$

The proposed realigned wetland is intended to create a feature with greater diversity of structural form, plant communities, and wildlife habitats. Key components of the realigned wetland include:

- Maintaining the treed swamp community, the existing wetland outlet, the outlet channel, and its riparian zone.
- Realigning portions of the wetland dominated by common reed (*Phragmites australis*) and narrow-leaved cattail (*Typha angustifolia*).
- Providing a larger wetland, with the realigned portion of the wetland being 1.61 times larger than the area of the disturbed wetland.
- Variable water depths, including deep pools up to 1 m in depth.
- Greater wetland surface area.
- Greater wetland volume.
- Greater wildlife habitat variability.

8.2.1. Design Objectives

Designing a healthy wetland involves several objectives to ensure ecological balance, functionality, and sustainability. The guiding principles of the conceptual design include:

- **Biodiversity Enhancement:** Promote a diverse range of plant and animal species to create a resilient ecosystem.
- **Hydrological Function:** Ensure proper water flow and retention to support wetland processes and maintain hydrological balance.
- **Habitat Creation:** Design varied habitats to support different species, including open water, marshes, and upland areas.
- **Flood Mitigation:** Design wetlands to attenuate runoff, reducing downstream flood risks.
- **Connectivity:** Ensure ecological connectivity with surrounding habitats to support wildlife movement and genetic exchange.

To meet these objectives, a range of wetland depths will be included to create areas with open water, emergent vegetation, and meadow marsh. In addition, a pit and mound approach is recommended in the areas surrounding these deeper pockets. The purpose of pit and mound features is to integrate an undulating landscape that will offer a variety of niches that would otherwise take decades to develop naturally. Once earthworks are complete, the installation of various habitat features is proposed (e.g., avian perch poles, large woody debris, boulder clusters).

Native species have been selected based on their preferred soil conditions, moisture tolerance, and associated plant hardiness zone. Plantings of native trees and shrubs of varying age classes will be distributed throughout the site. Post-planting, a native seed mix will be applied across all disturbed soil areas.

Surrounding the existing wetland are narrow meadow communities, which include a number of native wetland meadow species. It is recommended that portions of these meadow communities be salvaged through sod salvage methods. Areas with low levels of invasive species, specifically phragmites, can be identified in the field for salvage. An advantage of sod salvage is that a vegetation community can be established immediately, reducing the time lag associated with planting fresh plant stock or seeding.

8.2.2. Design Elements

The following design elements have been incorporated into the realigned wetland design.

8.2.2.1. Water Depths

Variable depths were intentionally proposed within the newly constructed wetland to provide a range of niches available throughout the fluctuating hydroperiod. The hydroperiod refers to the duration and portion of the year during which a wetland holds water. For most wetlands, the sources of inflows (e.g., precipitation, surface flow, groundwater) and outflows (e.g., evapotranspiration, surface flow, groundwater) vary over time. As such, hydrology is rarely stable but fluctuates, resulting in pulsing hydroperiods, therefore creating and maintaining habitat conditions for different plants to grow (Cherry, J.A. 2011).

The hydroperiod of a wetland is extremely important in determining the suitability of amphibian breeding habitat, given that it determines the length of time available for amphibian larvae to develop into juveniles. Furthermore, it determines the wetland's capacity to provide habitat for fish and aquatic insects, which prey on amphibian larvae and eggs (Tarr & Babbit 2021).

The proposed wetland design includes wetland pockets excavated to three elevations. The primary wetland area, which encompasses subsequent wetland pockets, will be lowered to an elevation of 243 masl. This will provide a seasonally wetted area and will be comprised of a meadow marsh and treed swamp community. An emergent marsh community will be established at 242.70 masl. Two wetland pockets will be excavated in the swamp community to an elevation of 242.5 m masl, and will act as vernal pools, intersecting the groundwater table for an extended period of the year. Three more wetland pockets within the emergent marsh community will be excavated to 242 masl. These areas are expected to provide additional year-round wetted areas that should maintain a minimum depth of approximately 0.75 m.

The existing treed wetland community will be retained within the proposed design. The treed community contains a wetland outlet channel that discharges into the downstream channel. To maintain the hydrology of the downstream channel, a wetland outlet has been designed into a small berm feature. The outlet crest height is set approximately 5 cm higher than the current grade control of the wetland. This elevation has been established to maintain both the hydroperiod in the larger wetland while still maintaining downstream flows, when combined with the SWM pond discharge. A second outlet has been proposed, which extends into Block 5, extending the wetland area and providing additional discharge relief under large storm events. An additional floodplain wetland is proposed in Block 4. This wetland will receive flow from the channel, creating a wetland pocket. The wetland will be designed to avoid existing trees and will include additional tree plantings around it to create a vernal pool.

A variety of depths within the wetland design will provide a range of growing conditions from permanently wetted to seasonally wetted. As such, the wetland design integrates with the wetland's hydroperiod to maintain a wide range of ecological services.

See Appendix M, Drawing No. 1 for the proposed wetland design.

8.2.2.2. Forested Swamp – Pit and Mound Features (0.25 to 0.5 m depth)

The pit and mound features will be constructed throughout the interstitial spaces between the deeper wetland pockets. These pit and mound features are used to create a topography that would be found on the floor of an old-growth forest, which would take decades to establish on its own. Naturally, this type of landscape would be created when trees with shallow roots were uprooted during a storm. As a result, the mass of roots and soil would become the mound, and water infilling would form a pit. These features will create a diverse microtopography across the study area, enhancing the variability of niches for a range of organisms.

The pit and mound features will range in depth, shape, and orientation. They will range in size from 5 to 10 m² and have depths between 0.10 to 0.20 m. The pits and mounds will intercept surface flows and hold water intermittently throughout the year. The mounds are made from the spoils of digging the pits and should range from 0.15 to 0.30 m in height and should be placed alongside the pits.

Native plantings and seed mix will be installed within the pits and mounds, resulting in a forested swamp ecotype. In addition, large woody debris, fine branches, and stone piles will be placed throughout the features to enhance their structural diversity.

8.2.2.3. Emergent Marsh (0.5 m depth)

An emergent marsh is proposed for approximately 50% of the wetland area. This community is generally located within the shallow shelves to an approximate depth of 0.3 m. The wetland bottom will be graded heterogeneously with variations of +5 to -5 cm of the proposed grade to mimic the rise and fall of a natural wetland bottom. Narrow and broad-leaved herbaceous plants, sedges, and cattails characterize these features. Additional details regarding recommended native plant species and habitat features can be found in Section 10.1.

8.2.2.4. Shallow Open Water Wetlands (1 m depth)

Open-water wetlands have water depths of up to 1 m and are too deep for emergent marsh vegetation to establish. Floating-leaved and submerged aquatic vegetation are common within this community. Three open water wetland pockets are proposed.

8.2.2.5. Wetland Outlet Channel

A key component of the wetland design is the wetland outlet channel. The size, shape, and elevation of the outlet channel control the elevation of the water within the wetland and the rate at which the wetland drains. The wetland outlet channel includes the following design criteria:

- The outlet crest must support water retention in the proposed wetland at the design depth.
- The outlet channel must provide flow characteristics similar to those of the downstream watercourse in a pre-development scenario.
- The outlet channel must remain stable during the full range of expected flows.
- The outlet must not create excessive erosion downstream.

The outlet for the existing wetland is located within the swamp community. By maintaining the swamp community, the existing outlet will be maintained in its current location. However, to better facilitate control of the wetland hydrology and to provide better opportunities to modify the wetland's hydrology based on monitoring results, a second outlet is proposed. This outlet will be established with a small berm (approximately 30 cm in height) that will be installed around the edge of the existing swamp feature. The outlet will be sized to provide the wet/dry cycle required to maintain the wetland and to maintain downstream flow contributions comparable to current conditions. A key advantage of this approach is that, if monitoring indicates changes to the discharge volume from the wetland are required, they can be readily accommodated within the constructed outlet structure, rather than modifying the natural grade control within the existing swamp community.

8.2.2.6. Thermal Mitigation

As the wetland's catchment area will be reduced, clear water will be directed to the wetland through roof capture for the adjacent warehouses. A potential issue associated with using rooftop water capture to feed the wetland is the temperature of the water being discharged from the roof into the wetland. Rainwater hitting a hot roof in the summer can heat up, and this warm water entering the wetland could have a negative impact on the ecology of the wetland at the discharge locations. A number of mitigation measures are proposed:

- The use of high solar reflectance surfaces on the roof. High albedo roofing surfaces (such as a white rooftop) absorb less thermal energy from the sun and are cooler than a dark roof.
- Water will be directed through underground piping, which will allow for a heat exchange between the roof-runoff and the cooler pipes.
- Consideration of tying a portion of the rooftop leaders to the bioswale system, which will help to cool the stormwater before it enters the wetland.

8.2.2.7. Habitat Features

Avian Perch Poles

Avian perch poles are recommended for the site. These features are designed to provide perching habitat for small-bodied birds and encourage foraging and resting within the wetland area. The height of the wooden poles can vary depending on available materials, but they should stand at least 2 to 2.5 m above ground and have 1 to 2 cross beams for increased perching surface area.

Large Woody Debris

It is recommended that large woody debris be placed within the pit and mound features and the surrounding open area to increase the structural diversity of the site and provide habitat for a range of organisms, including plants, mosses, lichens, small animals, and insects. In addition, decaying wood is an organic material that stores nutrients, holds moisture, and provides a beneficial environment for fungi, bacteria, and other microbes that improve water quality.

Various forms of large woody debris are encouraged, including root wads, habitat logs, and brush piles. It is recommended that the material come in various lengths and widths, including varying levels of decay if possible.

Basking Logs

Basking logs are used by turtles, amphibians, birds, and other animals as a place to rest, hunt, or thermoregulate. Basking sites are particularly important for turtles that need to maintain a constant temperature and, therefore, rely on outside sources of heat to maintain their body temperature. These habitat features will need to be secured into the bank of the constructed wetland so that they do not mobilize during high flows. The basking logs should extend at least 2 metres into the open water and have a diameter of 0.25 to 0.5 m.

Boulder Clusters

Piles of stones will be placed within the pit and mound features, the wetland pockets, and in the open areas to create different microclimates and cover structures throughout the site. This provides habitat for a range of wildlife.

Bat Box

Bat boxes provide female bats with a warm place to raise their young. Most female bats only produce one pup per year, resulting in slow population growth. Due to habitat loss and white-nose syndrome, bat populations have declined rapidly; therefore, providing additional roosting locations to raise their young is increasingly important. A multi-chambered artificial roosting structure is recommended. This construction type offers space to move around within the bat box as temperatures fluctuate throughout the day or night.

8.2.3. Hydrologic Assessment of the Proposed Realigned Wetland

A Feature-Based Water Balance Report was prepared by RJ Burnside (September 2025), which characterized the existing hydrological functions of the wetland. This characterization informed the form and function of the existing wetland, provided parameters such as the outflow function for the proposed wetland realignment, and tested the function of the proposed realigned wetland to ensure the proposal is functional and will provide a net ecological benefit. To assess the existing and proposed wetland hydrological function, RJ Burnside developed a continuous Visual Otthymo model that used inputs from an Environment Canada thirty-year precipitation record and groundwater inputs from the RJ Burnside hydrogeological investigation (RJ Burnside 2025a).

The hydrologic assessment considered three scenarios: 1) the existing condition, 2) a realigned wetland without any flow input mitigation measures, and 3) a realigned wetland scenario, which includes flow augmentation from rooftop capture. In addition to utilizing water from rooftop capture, the proposed development includes soak-away pits, which will recharge the shallow groundwater system and help to maintain water within the realigned wetland.

A pre-development wetland water balance model was developed by RJ Burnside (RJ Burnside 2024b). This model was calibrated using hydrometric flow monitoring data collected by GeoProcess (Appendix N) between November 2023 and July 2024. The model was calibrated to existing conditions and performs well in replicating outflows over the hydrometric monitoring period; therefore, it can be used to assess long-term wetland performance using thirty-year climatic data. Further, the model can be used to predict the wetland performance under future development scenarios.

8.2.3.1. Modelling Results and Discussion

The existing wetland was found to be wet during winter and spring, with depths ranging from 0 m to 0.39 m; average depths were 0.15 m in winter and spring, 0.13 m in the transition months of June and November, and 0.04 m in late summer and early fall. The average drawdown time for the wetland was approximately four days after the peak of a storm event. Groundwater discharge into the wetland was observed through the winter and spring, while the infiltration from the wetland into the shallow groundwater system was observed during the summer and fall.

As discussed in the Feature-Based Water Balance Report (RJ Burnside 2024), the proposed development will reduce the catchment area, directing water to the wetland. This loss of catchment would result in a reduction

of annual runoff volume to the wetland of approximately 38%. As a result, it was determined that by directing rooftop captured runoff to the wetland, there would be a sufficient volume of water to sustain the realigned wetland. The water captured on roofs will meet water quality targets and be considered safe for discharge to the wetland.

The model found that there will be sufficient water from both surface and groundwater sources to maintain the wetland and the pools, with water being maintained to a minimum depth of 243 masl, which corresponds to maintaining water within the pool features throughout the year. The proposed wetland will intercept the sand layer, ensuring that the shallow groundwater that interflows through it continues to deliver water to the wetland in the same mechanistic way as currently occurs.

The proposed water levels in the swamp communities will be inundated during the winter and spring months with approximately 12 to 16 cm of water. During the summer and fall, water depths will drop to the point that the community will no longer have standing water for a period of time. Seasonal drawdowns are an important function of wetland systems and are important for creating and maintaining variable habitat conditions for different plants to grow. Another function of drawdowns is the consolidation of wetland soils. Often, in areas with deeper water, wetland soils mixed with water are found, creating more of a slurry that is difficult for many wetland plants to root in. When a drawdown occurs, as proposed in the realigned wetland, this unconsolidated layer has a chance to consolidate, creating a bed for many plants to root (Wisconsin Wetlands Association 2018).

The wetland areas listed as emergent marsh will follow a similar hydroperiod as the swamp community, as they are, for the most part, at the same approximate elevation. Based on 2024 conditions, which was a wetter summer, the pools would have maintained water throughout the summer, while in 2025, a much drier year, the pools likely would have dried out. Along the drier margins of the emergent marsh, grasses and sedges typically dominate, whereas closer to the open water, species diversity is reduced due to deeper water and more aerobic conditions (Cohen et al., 2020).

The shallow, open-water wetland is potentially inundated year-round, with water depths of 0.75-1 m. Because the shallow groundwater feeding the wetland is dependent on precipitation, the period of water being maintained within the pools will be dependent on precipitation during the summer. In wetter years, the pools will likely be maintained throughout the summer, whereas in drier years they may dry up. Within shallow open-water wetlands, submergent and floating plant species are recommended and suitable for these water depths. Shallow open-water wetland communities, absent from the existing wetland, will support a range of plants and wildlife that are currently not supported.

One of the functions the wetland should serve at the landscape level is to retain runoff and prevent downstream flooding. The wetland will help manage additional runoff from the proposed development. By its nature, development increases the amount of impervious area, and as a result, greater volumes of surface water runoff are generated during a precipitation event. The realigned wetland is larger in size, not just in surface area but also in the volume of water that it will store. The RJ Burnside Feature-Based Water Balance Report (2024b) suggests that the realigned wetland would have approximately three times more active storage than the existing wetland. That is, 11,384m³ versus 3,022 m³, respectively. The report also shows that the proposed development will increase average annual runoff volume into the wetland by 41%, while the proposed wetland will release approximately 42% less water annually. It should be noted that the reduced discharge from the wetland does not translate into a loss of downstream flows in Ancaster Creek, as SWM pond discharge will replace the reduced wetland discharge flows. Water entering the realigned wetland will

either recharge the water table or be lost through evapotranspiration. As a result, the realigned wetland will provide enhanced management of the runoff generated by the development, a highly desirable approach. If the existing wetland is maintained as is, it will only be able to retain approximately a third of the runoff. This is an excellent example of how the realigned wetland would provide onsite runoff control and downstream flood protection.

The wetland works in conjunction with the stormwater management solution. Water delivery to the downstream receiving system is the result of releases from both the wetland and stormwater management pond. Oden Detech Functional Servicing Report (October 2025) completed an analysis of the pre-and post-development peak flows for various storm events. Their analysis found that in the post-development condition, peak flows downstream of the site are equal to or less pre-development levels. Further analysis by RJ Burnside, as reported in the Feature-Based Water Balance Report (2025b), suggests that the results of the Otthymo model, which includes the stormwater management pond, support the FSR findings, showing a decrease in peak flows across storm events. The models show that a greater volume of water will be discharged from the Subject Property, typical of all development that increases imperviousness. The modelling suggests that this additional water will be discharged through the extended detention function, primarily from the stormwater management pond. The additional water is released slowly over time, helping maintain flow in the downstream reaches of Ancaster Creek, which in turn benefits the biological aquatic systems that depend on flow.

8.3. Stormwater Management

The stormwater management (SWM) criteria for the proposed development site follows City of Hamilton Airport Employment Growth District (AEGD) Subwatershed Study and Stormwater Master Plan (SWMP) Implementation Documents (Aquafor Beech Limited, 2017) and are as follows:

- Water Quality – Provide Enhanced (Level 1) water quality control as identified in Table 3.2 of the Stormwater Management Planning and Design Manual (MOE, 2003)
- Water Quantity – Control proposed flows to pre-development peak flow rates up to and including the 100-year return period event
- Infiltration – Evaluate the infiltration potential on the site as it relates to the existing water budget and recommend measures to meet the goal of maintaining or enhancing groundwater recharge.

The proposed stormwater management system for the development is described in the Oden Detech Functional Servicing Report. The proposed development will have a 1.49 ha SWM facility and Low Impact Development (LID) systems to control post-development peak flow rates to pre-development levels for events from 2-year to 100-year (inclusive). The SWM pond is a dry detention facility.

8.4. Infiltration

Per the AEGD secondary plan, Low Impact Development (LID) measures have been incorporated into the site plan, including bioswales and soakaway pits. These will provide infiltration and treatment of smaller storm events, will maintain the relocated wetland's water balance, and will maintain groundwater recharge per the pre-development water balance.

The proposed LIDs will consist of bioswales located on both sides of Street A and soakaway pits installed below grade. Bioswales have been designed to contain native plants with deep root systems. These plants will be placed in a fast-drainage bioswale soil mix that includes 50% coarse sand, 20% peat moss, and 30% sandy loam, covered with 50-75 mm of hardwood mulch. Underneath the soil mix will be a pipe per the grading and serving plan, contained within ¾" (20 mm) crushed rock. The swale shall be depressed at a minimum of 150 mm from the surrounding land grade, and an overflow control structure in the centre of the swale will feed into the pipe where needed.

The soakaway pits will be located below grade under buildings. They are large, perforated chambers to which rooftop drainage is directed. The stored water is then provided time to soak into the surrounding soil matrix.

8.4.1. Water Balance - Infiltration

Odan Detech provides a water balance for the site in their FSR as it relates to site infiltration. By implementing soakaway pits, an overall increase of volume of water will be infiltrated into the shallow groundwater system. In total, Odan Detech predicts an increase of approximately 18,427 cubic metres of water infiltration across the site.

As the majority of this water is being infiltrated into the sand layer, which is directly connected to the wetland, it is anticipated that this additional water will be available as groundwater discharge to the wetland. This has the potential to slow the rate at which groundwater levels decline within the wetland, thereby extending the summer period during which groundwater will be available to plants and wildlife.

8.5. Wetland Sizing

The proposed realigned wetland is 1.61 times larger than the existing wetland area that is proposed to be disturbed. Table 27 provides a breakdown of the areas of wetland to be retained, disturbed and recreated. In addition to the wetland area, consideration was given to the ecological gain that can be achieved through the wetland realignment. Both spatial and biotic enhancement factors were considered to determine an overall benefit ratio for the new wetland.

8.5.1. Wetland Functional Capacity Modelling

To better understand the potential ecological change that the realigned wetland can provide, a Functional Capacity Modelling approach was applied. The wetland functional capacity modelling provides a quantitative approach to assessing the magnitude of ecological functions.

8.5.1.1. Assessment Framework

This analysis applies a modified Hydrogeomorphic (HGM) wetland assessment approach to compare the functional capacity of the existing and proposed offsetting wetland. The HGM method, originally developed by the U.S. Army Corps of Engineers (Smith et al., 1995), evaluates wetland functional capacity using measurable hydrological and ecological variables. While the standard HGM protocol compares site-specific wetlands with reference wetlands representing optimal conditions within a regional subclass, this assessment adapts the method to a direct comparison between the existing and proposed offsetting wetlands within the

Subject Property. By applying consistent scoring logic to both wetlands, the analysis maintains the integrity of the HGM framework while enabling a practical evaluation of relative functional capacity.

This approach is conceptually aligned with the Toronto and Region Conservation Authority’s (TRCA) Wetland Risk Evaluation method, which similarly uses a ratio-based comparison of pre- and post-development wetland conditions to assess ecological risk and inform mitigation requirements. The TRCA framework emphasizes the importance of quantifying functional loss and gain and supports offsetting ratios that reflect both ecological performance and uncertainty. In this assessment, the offsetting ratio between the existing and proposed wetlands is evaluated based on the relative functional indices described below.

8.5.1.2. Scoring Template

The functional capacity of each wetland was characterized using a series of dimensional variables (e.g., volumetric wetland storage capacity in m³). Hydrological and ecological variables were selected based on data availability and relevance to the project. Variables were converted into dimensionless sub-indices by calculating the ratio of proposed to existing values. In most cases, the direct ratio was used directly as the sub-index value (i.e., proposed divided by existing). For variables where a decrease indicates improved functionality (e.g., outflow volume), the inverse ratio (i.e., existing divided by proposed) was used. This approach eliminated the need for normalization, as all values were expressed relative to the existing wetland’s condition, providing a consistent and interpretable basis for comparison. Sub-Indices were averaged to produce a functional capacity index (FCI), representing the functional capacity of the proposed versus existing wetlands. The process follows these steps:

1. **Define and Quantify Variables:** Each function is assessed using a measurable variable. For example:
 - Wetland catchment area (ha)
 - *Typha spp.* (Cattail) Cover (% of total wetland area)
2. **Derive Sub-Index Values:** Real metrics are used to derive dimensionless index values.

Scenario	Increase indicates improved wetland function	Decrease indicates improved wetland function
Equation	$x = \frac{\textit{proposed}}{\textit{existing}}$	$x = \frac{\textit{proposed}}{\textit{existing}}$

3. **Calculate Functional Capacity Index (FCI):**

$$FCI = \frac{x_1 \cdot x_2 \cdot \dots \cdot x_n}{n}$$



where x_1, x_2, \dots, x_n are the values of each index.

8.5.1.3. Variables and Sub-Indices - Hydrological

Catchment Area

Catchment area values for both wetlands were sourced from Section 2 of the R.J. Burnside report. Under the post-development scenario, no additional runoff from the proposed development area was directed to the wetland, as all flow was assumed to be conveyed to the stormwater management (SWM) facility. The index was calculated as the ratio of proposed to existing catchment area, with the direct value (i.e., proposed divided by existing) used.

Average Outflow (March to October)

Outflow volumes for the March–October period were obtained from Table 10 of the R.J. Burnside report. Since reduced outflow is associated with improved water retention and hydrologic function, the index was calculated as the inverse of the proposed-to-existing outflow ratio (i.e., existing divided by proposed).

Average Inflow (March to October)

Inflow volumes for the same period were sourced from Table 10 of the R.J. Burnside report. To mitigate anticipated runoff deficits and enhance storage depth, roof runoff diversion was incorporated into the proposed wetland design. The index was calculated as the ratio of proposed to existing inflow, with the direct value used.

Volumetric Storage Capacity

Storage volumes were derived from Section 3 of the R.J. Burnside report. These represent the average volume of water retained within each wetland. The index was calculated as the ratio of proposed to existing storage volume, with direct value used.

8.5.1.4. Variables and Sub-Indices - Ecological

Wetland Buffer

The index describes the wetland buffer as the percentage of the wetland perimeter surrounded by undeveloped habitat ≥ 30 m in width (i.e., percent of wetland perimeter surrounded by 'buffer area') (Upper Des Plaines River Basin reference). For existing conditions, the buffer area was estimated using 2024 staked wetland limits, GeoProcess ELC data, and aerial imagery. For proposed conditions, buffer area was estimated from the site plan. The wetland buffer variable was calculated as the ratio of buffer area to total area, expressed as a percentage:

$$\text{Wetland Buffer} = \frac{\text{Buffer area (ha)}}{\text{Total area (ha)}}$$

The index was calculated as the ratio of proposed to existing.

Adjusted Floristic Quality Index (AFQI)

Adjusted Floristic Quality Index (AFQI) was used to assess intrinsic plant biodiversity. For existing conditions, species lists were sourced from ELC surveys, and C-values were derived from the most recent NHIC Ontario species list. For proposed conditions, species lists were taken from planting and seed mixes outlined in the wetland design. AFQI was calculated using the formula:

$$AFQI = 100 \left(\frac{\text{Native Mean } C}{10} \right) \times \left(\sqrt{\frac{\text{Native Species Richness}}{\text{Total Species Richness}}} \right)$$

Where *Native Mean C* is the mean coefficient of conservatism amongst the native species present at a site.

Native Species Richness is the total number of native plant species.

Total Species Richness is the total number of plant species.

The index was calculated as the ratio of proposed to existing.

Surface Area With *Typha* spp.

The index describing *Typha* spp. (broadleaf cattail) cover was defined as the percentage of the wetland area occupied by this species (Des Plaines reference). For existing conditions, coverage was estimated using ELC polygons, assuming 90% *Typha* cover in MAMM1-2 and 0% elsewhere. For proposed conditions, *Typha* was assumed to occupy 40% of the Mid-Depth Emergent Planting Zone, based on design drawings. Coverage was calculated as:

$$\text{Surface Area With } Typha \text{ spp.} = \frac{\text{Area of } Typha \text{ spp. (ha)}}{\text{Total area (ha)}}$$

As a decrease in surface area covered by *Typha* spp. signifies an increase in wetland functionality, the index was calculated as the ratio of existing to proposed.

Surface Area Without Phragmites

The index describing surface area without phragmites was defined as the percentage of wetland area not occupied by the species. For existing conditions, coverage was estimated using ELC polygons and aerial imagery. For proposed conditions, no phragmites were included in the planting design, and surface area without phragmites was assumed to be 100%. Surface area was calculated using the equation:

$$\text{Surface Area Without Phragmites} = \frac{\text{Area without Phragmites (ha)}}{\text{Total area (ha)}}$$

The index was calculated as the ratio of proposed to existing.

Surface Area Without Invasive Species Cover

Surface area without invasive species cover was estimated for each ELC polygon community within the wetland based on a combination of field data and photos. ELC field sheets included abundance codes for each species, indicating whether the invasive species present within the polygon occurred dominantly,

abundantly, occasionally, or rarely throughout. To provide a conservative estimate, non-wetland invasive species (i.e., common buckthorn) were included in the estimation. The abundance information, along with field notes on total percentage cover in the ground layer and photos taken during field visits, was used to find a rough estimate of the area without invasive species cover (expressed as a percent) within each polygon.

Surface area was calculated as an average surface area without invasive species cover, weighted based on the area of each polygon and expressed as a percent. The index was calculated as the ratio of proposed to existing.

8.5.1.5. Results

Table 28: Results of the various indices of the wetland functional capacity modelling

Parameter	Units	Existing Wetland	Offset Wetland	Ratio (Offset/Existing)	Modification for Index	Index Value
Hydrological Indices						
Wetland Area						1.6
Catchment Area	ha	31.46	10.94	0.35	N/A	0.35
Average Outflow (Mar-Oct)	m ³	51101	45129	0.88	Inverse	1.13
Average Inflow (Mar-Oct)	m ³	32307	96966	3.00	N/A	3.00
Volumetric Storage Capacity (243-243.5 masl)	m ³	3022	11384	3.77	N/A	3.77
Ecological Indices						
Wetland Buffer	%	36.28	81.09	2.23	N/A	2.23
Adjusted Floristic Quality Index	N/A	20.80	46.89	2.25	N/A	2.25
Cattail Cover	%	36.10	13.44	0.37	Inverse	2.69
Phragmites Cover	%	39.89	0.00	0		*complete removal
Invasive Species Cover	%	25.42	0.00	0		*complete removal

*The proposed value is zero, so compared to the existing value, this represents a 100% reduction.

Hydrological Results

Results of the hydrological calculations show a decrease in total catchment area, but an increase in volumetric storage capacity. Additionally, although average inflow is estimated to increase, average outflow is estimated to decrease. Ultimately, the increase in storage capacity and decrease in outflow demonstrate how the proposed wetland will provide greater water retention than the existing wetlands on-site.

Ecological Results

Results of the ecological calculations show an increase in wetland buffer percentage, a decrease in invasive species percentage cover, and an overall increase in floristic quality. The results of the adjusted floristic quality index can be found in further detail in Section 8.5.2.

Functional Capacity Change

The index values for the individual model parameters were averaged to provide an overall modelled change in functional capacity. All parameters were weighted equally. Phragmites Cover and Invasive Species Cover were not

assigned an index value, as they are also functionally captured in the Adjusted Floristic Quality Index, and because they consider all phragmites to be removed and invasive species cover to go to zero, an index number cannot be calculated.

The Wetland Functional Capacity average index score is 1.99, which suggests that the new wetland will provide an enhancement of the ecological capacity of almost double the current condition.

8.5.2. Adjusted Floristic Quality Index Analysis

The Floristic Quality Index (FQI) is the measurement of a natural area's habitat condition or quality and can help to provide quantitative metrics for understanding the ecological quality of a site. It is a widely used and highly influential method of assessment in North America that uses the plant species in an area to measure floristic quality. The traditional Floristic Quality Index uses two primary values in its calculations: the total mean C (the mean coefficient of conservatism for all species present on a site) and the total species richness (the number of species present on a site). Total FQI is calculated by multiplying the total mean C by the square root of the total species richness, providing a value typically between 0 and 100 that represents the floristic quality of a site.

However, in areas with a high level of disturbance or introduced species, the traditional FQI calculation can result in species richness having a disproportionate impact on the resulting value (Spyreas, 2019; Miller and Wardrop, 2006). The wetlands currently present at 140 Garner Road were observed to have a high proportion of introduced species (9 out of 36 species) and a high level of disturbance, given the surrounding agricultural land use. As such, the chosen metric for comparing the current wetlands at 140 Garner Road to the proposed wetlands resulting from the wetland enlargement plan is not the traditional FQI, but instead an adjusted Floristic Quality Index (AFQI) adapted by Miller and Wardrop in 2006.

The AFQI reduces the effect of species richness on the resulting FQI value by, instead of only using the square root of total species richness, using the square root of native species richness divided by total species richness, allowing for non-native species richness to be taken into account. AFQI was calculated using the formula:

$$AFQI = 100 \left(\frac{\text{Native Mean } C}{10} \right) \times \left(\sqrt{\frac{\text{Native Species Richness}}{\text{Total Species Richness}}} \right)$$

In the above equation, *Native Mean C* refers to the mean coefficient of conservatism (0–10), which represents the estimated probability of a plant to occur in a habitat that is relatively unaltered by human activity. *Native Species Richness* is the total number of native species observed at site, and *Total Species Richness* is the total number of species observed at a site.

8.5.2.1. Calculations and Results for the Existing Wetlands

The AFQI was calculated for the wetlands located towards the center of the 140 Garner Road Property using data from a vegetation survey performed on August 26th, 2025. A total of 39 species were found to occur in this area, 37 of which were identified to species. 36 out of 37 species have been assigned a C-value (Coefficient of Conservatism) under the most recent NHIC Ontario Species List, which reflects how tolerant a

species is to disturbance, and was used to calculate the floristic quality (FQI) index for the area. The resulting adjusted FQI for the existing wetlands is 20.8.

8.5.2.2. Calculations and Results for the Proposed Wetlands

The wetland enlargement plan provides planting lists for three main sections: the forested swamp planting zone, mid-depth emergent marsh planting zone, and the shallow emergent edge marsh planting zone. The potential adjusted floristic quality index (FQI) values for each of these four sections were calculated using the assigned C-value for each plant species as assigned under the most recent NHIC Ontario Species List and the total number of species proposed to be planted on-site. The species list used for calculating adjusted FQI for each section was taken from the proposed plant lists given in the wetland enlargement plan document.

The values for the proposed future wetlands are representative of potential plant community quality and are based on the presumption that invasive species onsite will be appropriately addressed and thus not present in the proposed future wetlands, and that the species planted and seeded onsite will persist.

The resulting adjusted AFQI values for each section are: 44, 52, and 48. The weighted average across the entire proposed wetland complex was calculated by multiplying the AFQI value for each wetland section by its respective area, summing the three resulting values, and then dividing the sum by the total area. The resulting area-weighted average AFQI across the entire proposed wetland is 46.9.

8.5.2.3. AFQI Interpretation

In general, a higher AFQI indicates higher floristic quality, with values ranging between 0 and 100, with a score of 100 being an extremely improbable result that would indicate a site containing only native species with a C-value of 10. The adjusted FQI for the existing wetlands is 20.8, which is a value towards the low to average end of the scale and reflective of the high percentage of non-native species present and the relative lack of conservatism of the native species present. The native species currently present are all common to the Hamilton region (Oldham, 2017). Amongst the native species present, the Mean C is 2.4, further indicating their tolerance to disturbance and subsequent common regional status.

The AFQI values for the proposed wetlands are 44, 52, and 48, resulting in an area-weighted average of 46.9. This value is more than twice the current AFQI for the existing wetlands at 140 Garner Road, indicating that the proposed wetland realignment plan has the potential to greatly improve the wetland's floristic quality.

It should be noted that this assessment is based on species richness and does not take into account abundance. The abundance of non-native species in the wetland is far higher than the abundance of native species. As this assessment is only based on richness, the results of the AFQI for the existing wetland is likely over-estimating its quality, and this assessment is actually under-estimating the floristic improvement that will be gained through the wetland realignment.

8.6. Vegetation Protection Zone

Setbacks are a physical distance separation between a natural feature and the activity being proposed to avoid or mitigate potential adverse impacts. Buffers are planned and managed strips of land and vegetation located between natural features and the development site, intended to protect and sustain the natural

feature and its ecological functions over the long term. Buffers can be a combination of topography, vegetation, soil and drainage catchments in a relatively narrow band of land. In many cases, setbacks form part of a proposed buffer area and are combined with restoration or naturalization to minimize or offset potentially adverse impacts.

Based on current field conditions, the recommended VPZs are provided below for each natural heritage feature. The VPZ/buffers that follow are recommended for the proposed development:

- 25 m setback to butternut trees to be retained, this is contingent on further assessments of butternut health and hybridity and discussions with the MECP.
- Variable 15 m setback from the FODM2-1 Significant Woodland
- Minimum 10 m setback from the FODM1-1 woodland
- Minimum 15 m setback from the relocated/created wetland (Map 6).
- Minimum 15 m watercourse setback

Wetland Setback

The 15 m VPZ is provided to the wetland, consistent with the UHOP recommendations for non-provincially significant wetlands. The VPZ will be planted with native species common to the local area. The 15 m setback slopes from the development area towards the wetland, as there is approximately a 2 m grade difference between the development and the wetland. The slope will provide opportunities to include structures such as bat boxes.

Watercourse Setback

A minimum setback of 15 m for the edge of the watercourse is provided for the wetland outlet watercourse. This is consistent with the recommendations in the UHOP for warmwater fish habitat.

Southwest Woodlot (FODM2-1) VPZ

The southwest woodlot is a red maple forest, including a mix of oak and hickory, and is considered a Significant Woodland. A variable-width VPZ has been proposed around the woodland. Along the northern limit, a 15 m VPZ is provided. This is in conjunction with an open space block to the north of the VPZ. Combined, the VPZ and the Open Space block will be planted with native species, at a woodland density, expanding the size of the woodland. Along the eastern woodland limit, a 15 m VPZ is also provided. However, at the northeastern corner, the VPZ narrows down to approximately 11 m at its narrowest due to its proximity to the edge of the road right-of-way (ROW).

The UHOP states (Policy C.2.5.10), *where vegetation protection zone widths have not been specified by watershed and sub-watershed plans, secondary plans, Environmental assessments and other studies, the following vegetation protection zone widths shall be evaluated and addressed by Environmental Impact Statements*. The policy states that for a Significant Woodland, the recommended setback is 15 m. The proposed variable VPZ will be evaluated against the no negative impact test of the UHOP.

Two factors need to be considered when determining the width of the VPZ:

- a) The sensitivity of the feature to impacts. This is based on the composition of the feature, its age class, level of existing disturbance, support of species at risk, and support of significant wildlife habitat.

- b) Risk that the proposed development poses to the surrounding natural heritage features. The risk factor is driven by the density of the development, the frequency of use, the likelihood of introducing non-native species, and the likelihood of encroachment into the natural area.

In addition to the sensitivity and impact risk from the development, mitigation incorporated into the VPZ contributes to its function and ability to minimize impacts at a given width.

The following provides a summary of the sensitivity of the feature and the risk factor from the proposed development.

- *Feature Sensitivity:* Overall, the feature is considered to have moderate sensitivity to development. The overstory is comprised of mature deciduous trees. There is a healthy edge community along the woodland, including shrub species such as sumac, choke cherry, and raspberry. The woodlot shows evidence of standing water in the spring, and potentially groundwater close to the surface in the western extent of the woodland. These wetter components of the woodland are not the edge of the feature adjacent to the development. Additionally, both surface and groundwater flow away from the woodland, towards the development; therefore, development proposed north and east of the woodland is unlikely to have an impact on the water balance of the woodland. The edge of the woodland is well established and is already preventing edge effects such as light, sunlight and wind penetration into the woodlot. The current plan does not propose to remove this existing edge but will build on it.
- *Feature Sensitivity:* Adjacent historical land use has been farming for many decades. This farming activity has reduced the outward expansion of the rooting zone of edge trees. As any proposed disturbance within the VPZ will occur within former active agricultural lands, the rooting zone of the woodland trees will not be impacted by the proposed development activities.
- *Development Risk Factor:* The adjacent proposed land use is warehouse uses. Warehouse use is a less density dependent use, as the overall number of people at the site is relatively low given the area, activity is mostly restricted to the interior of the buildings, and traffic movement is low as it is primarily trucks coming and going from the site. As warehouses are becoming more and more automated, it is anticipated that the number of people on-site may decrease over time.
- *Future adjacent land use immediately adjacent to the woodlot will be a road.* This is advantageous as it is very unlikely that encroachment into the woodlot will occur beyond the limits of the road, as can happen with homes backing onto a VPZ. A road represents a fixed, single impact, which allows for specific mitigation measures to be applied. For example, shielded, directional lighting can be used adjacent to the woodland.

The UHOP test has no negative impact. Overall, the combination of a variable-width woodland with a planted open space block to the north will provide, on the whole, a net benefit to the woodland. The woodland will be expanded in size, which is fundamentally the best way to improve the woodland's ecological function and resilience. The large woodland decreases its edge-to-area ratio, which functionally means less of the woodland is susceptible to impacts from adjacent land uses. The benefit of the larger woodland outweighs the smaller VPZ along the northeast corner of the woodland. The relatively smaller size of the VPZ in this one location will have no measurable effect on the majority of the woodland.

It is important to note that the reduction in the VPZ from the recommended Significant Woodland 15 m VPZ in the UHOP is the result of Street A 30 m ROW. This is an enhanced ROW width, which accommodates

ditching, paths and the road. It also means that the actual edge of any built form, a path, is a minimum of 5 m for the edge of the ROW. This means that there will be a vegetated separation of 16 to 20 m between the woodland dripline and the curb.

Southeastern Woodland (FODM1-1) VPZ

Based on the assessment of significance, this woodland is not considered a significant woodland. As a result, a 10 m VPZ has been applied to the feature. The 10 m VPZ is applicable as the outside of edge of the woodland is comprised of young trees, creating an edge of trees more resilient to disturbance. The feature is small, at just under 2 ha, with an average width of approximately 65 m. Portions of the feature are dominated by buckthorn, a non-native invasive species, with low tolerance to development. An additional important factor to consider is the future widening of Highway 6, from its current two-lane alignment adjacent to the woodland to a four-lane dual-carriageway. This will reduce the woodlot size and width. It should be noted that a naturalized landscape/service easement strip will be provided between the VPZ and the development. This vegetated strip will be planted with native grasses and forbs, which will result in a vegetated separation of the woodland to the edge of curb of 16 m to 20 m. Combined, the VPZ and the naturalized service easement provide a sufficient vegetated separation between the development and the woodland.

Butternut Setbacks

The 25 m setback to the Butternut locations is consistent with the recommended buffer in the Ontario Recovery Strategy Series for Butternut (MNR 2013); if any activity that may cause harm to a Butternut, including grading or development within 25 m of the stem of a Butternut tree, MECP authorization may be required for the activity. Authorization requirements depend in part on the results of a Butternut Health Assessment. Based on GeoProcess's preliminary assessment of the trees, many, if not all, of the trees appear to be hybrids and likely will not require 25 m setbacks.

8.6.1. Vegetation Protection Zone Planting Structure

It is recommended that the vegetation protection zones (VPZ) adjacent to FODM1-1 be planted to mimic natural successional edges found around forests. Multi-layered plantings forming distinct vegetation layers should be implemented, mirroring a natural forest model of canopy-understory-ground layer. Typically, a woodland edge will include a gradient profile of increasingly taller vegetation to naturally regenerate from the edge of the adjacent open community. Graded forest edges better support biodiversity, filter and shelter functions, and increase wildlife habitat value. In parallel, they aid in sheltering potential hazardous trees from adjacent land use.

GeoProcess recommends a gradient profile comprised of two equally sized planting bands, demonstrated in Figure 2, as follows:

- **Band 1:** Tree plantings immediately adjacent to the woodland. Proposed to be 5 m in width, incorporating native tree species suitable to the property's soil texture, moisture regime and woodland community type.
- **Band 2:** Shrub and herbaceous plantings up to the edge of the vegetated protection zone. It will vary depending on the proposed buffer width, comprising the rest of the buffer beyond the 5 m of band 1. It

will incorporate native shrub species and suitable herbaceous species, with common milkweed and nectar species recommended to provide habitat for Monarch.

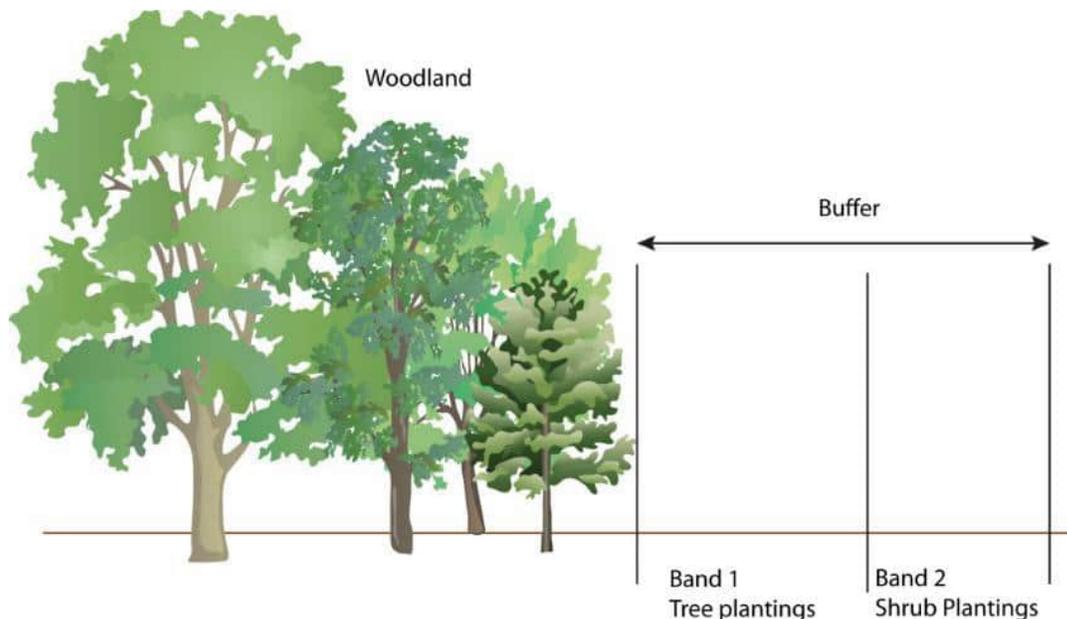


Figure 2: Proposed buffer planting approach, two planting bands of trees, shrubs and herbaceous species

This banding approach will be modified for the planting associated with the Open Space blocks and VPZ for the FODM2-1 community, as the blocks and VPZ will be planted as a single unit at a woodland density. It is recommended that an edge be created, with a 5 m outer band dominated by shrubs, and the remaining planting area planted at woodland density for both trees and shrubs.

9. Impact Assessment

Whenever work is proposed within or adjacent to natural features, there is potential for the proposed activities to have an impact on the natural features. In order to avoid or minimize impacts to the natural environment, it is important to identify potential impacts and provide measures to preferably avoid the impacts, or mitigation measures if avoidance is not possible. An assessment of the potential impacts of the proposed development on the natural heritage features on and adjacent to the Subject Property has been conducted. This assessment first identified the valued components of the natural environment that could reasonably be impacted by the proposed development. Each identified valued component was further broken down into its features and functions, with potential impacts for each feature/function identified, recommended mitigation measures, and an assessment of the overall anticipated impact if the mitigation measures are implemented. Table 29 presents the results of the valued component impact assessment.

More general impacts are also assessed in terms of short- and long-term impacts. These impact assessments are provided in Tables 31 and 32, which discuss the potential impacts, causal factors, recommended mitigation measures, and the net environmental impacts of their implementation. If an impact cannot be avoided or completely mitigated, then a residual effect will remain. If a residual impact remains, it must be determined whether it is acceptable. If the proposed works are deemed unacceptable, adjustments are required to eliminate the residual effect.

9.1. Value Component Impact Assessment

The value components (VC) for the impact assessment were derived from the consulting team's site baseline characterization studies and from a review of background information. The VCs represent both abiotic and biotic components of the natural environment. The identified VCs may include multiple distinct features or functions, each assessed individually. For each identified VC, specific impacts have been identified, and correspondingly, specific mitigation measures have been identified and discussed. The following VCs have been identified for this assessment:

- Landforms
- Groundwater
- Surface water
- Woodlands
- Wetlands
- Wildlife
- Significant Wildlife Habitat
- Species at Risk

Table 29 below provides a detailed assessment of each identified VC.

Table 29: Impact Assessment Table

Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
Landform	Topography	The Subject Property is generally flat, sloping gently downward to the northeast.	Site grading, specifically raising the grades of the site.	Raising the site will alter surface drainage. Drainage will be directed to the north, similar to the existing condition.	Low	<ul style="list-style-type: none"> No mitigation measures required 	No impact	No negative impact predicted. Overall, the site will continue to function in its existing condition.
Groundwater	Shallow Groundwater	Shallow groundwater within the site is associated with shallow sand deposits embedded within tight soils. The shallow groundwater flows towards the northeast of the site. Shallow groundwater levels are directly connected to precipitation, which rises and falls directly in relation to the amount of rainfall that occurs on short time frames.	<ul style="list-style-type: none"> Site grading Realigning the wetland onsite. The success of the wetland relocation needs to intercept the shallow groundwater table. 	Reduction in infiltration of surface water into the shallow groundwater system.	High – altering the shallow groundwater system could have a negative impact on the wetland and water discharged from the site.	<ul style="list-style-type: none"> Infiltration galleries that will infiltrate groundwater into the shallow groundwater system. Modelling suggests that with mitigation, a 29% increase in yearly infiltration volume will be achieved. Roadside ditches are proposed along Street A. 	Altering the shallow groundwater system could negatively affect the wetland and the water discharged from the site. The mitigation measures are expected to increase the volume of water that can infiltrate the shallow groundwater table. This additional infiltration of water will help maintain the wetland.	No negative impact predicted, potential for enhancement.
Surface Water	Headwater Drainage Features	Three Headwater Drainage Features (HDFs) were identified, which provided surface drainage to the wetland.	Site grading	Removing HDFs draining surface water to the wetland.	Moderate importance due to the small size of the HDFs and the limited amount of surface water that they drain to the wetland.	<ul style="list-style-type: none"> LID features, including bioswales, are included between buildings. There is a greater length of bioswales proposed within the development than there is length of HDFs in the existing condition. Bioswales are proposed along both sides of Street A for its entire length. Surface water drainage loss to the wetland will be replaced through rooftop drainage capture and discharge to the wetland. 	The LID measures proposed throughout the site will replicate the function of the HDFs. The LIDs likely represent a net gain, as the length of bioswales will be greater than in the length of HDFs in the existing condition. The bioswales will result in less surface erosion and deposition of sediment into the wetland and encourage greater infiltration compared to the existing HDFs.	No negative impact on the HDF function of the property is predicted. A net gain in the function that HDFs provide is likely due to the LID measures proposed.



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
	Watercourse and Fluvial Geomorphology	A small, poorly defined watercourse is present as the wetland outlet.	Site alteration altering flow regime	<ul style="list-style-type: none"> Modifying the channel form Increased flow results in channel erosion and channel instability Siltation of the channel from excessive sediment releases during construction. 	Moderate importance due to the overall small volume of water that is conveyed through the watercourse. The watercourse does not support direct fish habitat.	<ul style="list-style-type: none"> The channel will be maintained in its current form. No disturbance to the channel is proposed. Outflow from the wetland has been designed to match as closely as possible the existing conditions. There will be an overall reduction in flow. As a result, erosion in the channel is unlikely. Discharge from the site will match existing conditions through the addition of water discharged from the stormwater pond. Implementation of sediment and erosion control measures will reduce sedimentation into the watercourse during the construction phase. 	<ul style="list-style-type: none"> No impacts to channel stability are anticipated No impacts to fish habitat are anticipated 	No negative impacts are predicted.
Woodlands	Dry – Fresh Oak – Red Maple Deciduous Forest (FODM2-1) Community	Woodlot in the southwest corner of the Subject Property. It has been identified as a Significant Woodland that is contiguous with woodlands and wetlands on properties to the west.	Development adjacent to the woodland. Specifically, Street A has been shown to run adjacent to the woodland.	Short-term disturbance to the woodland from construction activities, such as dust and noise, and long-term disturbance from traffic on the roadway.	High importance based on the age of the woodland and its composition. The impact is limited to one edge of the woodland; as a result, the over influence of the development on the feature is limited.	<ul style="list-style-type: none"> A VPZ that is 15 meters wide for the majority of its width will be established along the eastern limit of the woodland. The VPZ will be planted with native species reflective of the local area. An Open Space blocks have been placed along the northern and eastern limits of the woodland. The Open Space Block will increase the FODM2-1 woodland area by approximately 45% within the Subject Property. 	The combination of the planted VPZ and the Open Space Block plantings will result in a larger woodland block. The increased size will provide greater resilience of the feature to site activities. The location of the woodland in the southwest corner of the property also means that it is fairly isolated from the activities on the site.	No negative impacts on the woodland are predicted. A net gain for the woodlot is predicted based on the increased size of the feature.



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
	Dry – Fresh Red Oak Deciduous Forest (FODM1-1) Community	The woodland is located in the southeast corner of the Study Area. The woodland is a remnant parcel from the larger woodland to the east of Highway 6. The woodland has a small portion of mature trees, with young regenerating trees around its perimeter. The woodland will likely be reduced in size when Highway 6 is widened to a double carriageway.	Development adjacent to the woodland	<ul style="list-style-type: none"> Encroachment into the woodland by site activities (i.e. storing material, placing fill, etc.) Workers establishing informal trails. Noise from site activities Light penetration from the site Removal of trees 	Moderate importance. Highway 6 to the east impacts the woodland. The woodland is narrow, so it experiences edge effects throughout the entire feature. As a result, the cumulative effects associated with the proposed development will be lower due to the high degree of current and ongoing disturbance.	<ul style="list-style-type: none"> A 10-meter VPZ is proposed along the interface with the development. A 6 m to 10 m service easement will immediately abut the VPZ. The service easement will be naturalized with native plants. This will increase the naturalized separation of the woodlot from the development, with a range of 16 m to 20 m naturalized setback provided. The woodland will be directly connected to the wetland along its northern limit, creating a larger contiguous vegetated block. 	It is predicted that the impacts on the woodland from the proposed development will be minimal for the following reasons: <ul style="list-style-type: none"> The proposed development activity adjacent to the woodland is a low-intensity activity, being warehouse usage. 16 m to 20 m of naturalized vegetated setback will be provided between the development and the woodland. Increased connectivity to adjacent natural heritage features will provide greater opportunities for the movement of wildlife and vegetation into and out of the woodland, providing the opportunity for a strengthening of its ecological function. 	No negative impact on the woodland is predicted, given the mitigation measures proposed.
	WODM4-4	This community is a black walnut plantation that is almost entirely comprised of black walnut. A butternut tree in the community was identified as a hybrid. Bat surveys indicate that the community supports candidate maternity roosting habitat.	Removal of the feature to allow development.	<ul style="list-style-type: none"> Removal of vegetation and loss of tree cover. Loss of bat maternity roosting habitat. Weaken east/west linkage across the northern portion of the property. 	Moderate. The woodland is an anthropogenic feature, planted as a plantation and does not support a diverse mix of tree species.	<ul style="list-style-type: none"> Tree planting a diversity of trees within Open Space Blocks 3, 7, and 7. Bat habitat structures such as bat boxes, bat condos, BrandenBark to be installed in Blocks 3, 7 and 8, within the wetland and around the SWM pond. 	<ul style="list-style-type: none"> Tree cover within the property will be maintained through tree plantings in Open Space Blocks 3, 7, and 8. Bat roosting habitat will be maintained on the property. Landscaping features and LID measures provide 	No negative impact predicted. Tree cover on the site will be preserved, while increasing the diversity of tree species. Tree planting within Open Space Block 7 and 8 provides a



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
					The woodland is a monoculture, which limits its ecological functions.	<ul style="list-style-type: none"> Perform tree and vegetation removal outside of the combined timing window (between April 1 and September 30th) for migratory birds and bat roosting. 	east/west vegetated features across the site to help facilitate the movement of wildlife across the site.	net gain to the FODM2-1 feature, representing a greater ecological gain than the ecological loss associated with removing the WODM4-4 feature; therefore, on balance, the mitigation measure is a net positive across the site and local area.
Wetland	Water Balance	Understanding the water balance of the wetland is critical to its function. There needs to be sufficient water available to maintain the wetland's vegetation. Both surface and groundwater contributions need to be considered. The water balance of the existing and proposed wetland has been modelled by RJ Burnside. The results of the model are used to determine inflow and outflow rates pre- and post-development.	<ul style="list-style-type: none"> Realignment of approximately 86% of the wetland. Increasing the size of the wetland by approximately 1.61 times. Increasing the physical diversity of the wetland. Increasing the wetland plant communities. 	<ul style="list-style-type: none"> Reduction in surface water directed to the wetland by overland flow due to changes in site grading. Increase in impervious surfaces, reducing opportunities for surface water infiltration and recharging of the shallow groundwater system. Thermal inputs into the wetland from warm stormwater discharge. 	Highly important. Maintaining water in the wetland through both surface and groundwater inputs is critical to maintaining the wetland.	<ul style="list-style-type: none"> Precipitation and snow melt will be captured on the warehouse roofs. This water will be directed to the wetland. The surface area of the rooftop water capture that is directed to the wetland has been modelled to ensure a sufficient volume of water is directed to the wetland. Infiltration galleries and bioswales will be used to recharge the shallow groundwater table found within the sand deposits that the wetland is in. These LID measures will result in potentially greater recharge to the shallow groundwater system than current conditions. 	Based on modelling, a sufficient volume of water can be delivered to the wetland to maintain its functions.	A net ecological gain is predicted due to the increased size of the wetland, the increased physical complexity of the wetland, and the increased diversity of vegetation communities. These increases in wetland functions have the potential to support a greater diversity of wildlife habitats. The increased connectivity of the wetland to the wooded features to its north and the southeast



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
						<ul style="list-style-type: none"> White roofs will be used to reduce thermal loading on rooftop harvested water. Deeper pools have been included in the wetland design, which will intercept the shallow groundwater table for extended periods of the year. A 15 m VPZ is provided around the wetland. An additional 10 m naturalized service easement is located immediately adjacent to the VPZ, increasing the naturalized setback between the development and the wetland to 25 m. 		woodland creates a stronger north/south linkage across the site.
	Vegetation	The vegetation community of the wetland is dominated by non-native species, specifically common reed (<i>Phragmites australis</i>) and narrowleaf cattail (<i>Typha angustifolia</i>).	Removal of the feature to allow development	<ul style="list-style-type: none"> Removal of existing vegetation 	Moderately important due to the high percentage of non-native species comprising the current vegetation community.	<ul style="list-style-type: none"> Planting multiple wetland communities, including marsh and swamp communities, with a diversity of native plants. Increasing the coverage of native wetland plantings on the site. Monitoring of the created wetland habitat for a period of seven years post-installation. Transplanted species will be monitored for a period of two years post-transplant. 	A net gain in wetland community and plant diversity will be achieved. The increased diversity and size of the feature are expected to enhance the wetland's ecological integrity over the long term and the ecological services it provides.	The revegetation plan for the wetland is expected to have no negative impacts and to achieve an overall net ecological gain.



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
	Wildlife and Wildlife Habitat	Wildlife surveys, including spring amphibian calling surveys and breeding bird surveys over multiple years, found limited use, few amphibians or birds. The wetland has no open water, so it can support only limited amphibian breeding and cannot support species such as turtles or fish.	Removal of the feature to allow development	<ul style="list-style-type: none"> Loss of wildlife habitat 	Moderately important due to the limited wildlife habitat quality currently supported by the wetland.	<ul style="list-style-type: none"> Increase the diversity of the wetland's physical form and the diversity of wetland vegetation communities. Inclusion of wildlife habitat structures within the wetland, including brush bundles, large woody debris, and bat boxes, will provide an immediate and greater diversity of wildlife habitat. Submission and approval of a wildlife salvage permit application, prepared by a qualified biologist, prior to preliminary grading and servicing. 	Due to the limited wildlife function and habitat structure currently provided within the wetland, the proposed mitigation measures are expected to increase the wetland's wildlife habitat function over time. The inclusion of physical habitat structures in the wetland not only enhances habitat heterogeneity but also provides immediately usable habitat structures, which will help offset the time lag in establishing plant communities.	No negative impact is predicted on the wildlife habitat function of the wetland. Overall, a net gain in wildlife habitat function is predicted from the realignment of the wetland.
Wildlife	Birds	<p>Vegetation and tree clearing is a disturbance to all bird species inhabiting an area and can be detrimental when undertaken during the nesting season.</p> <p>Several locally uncommon bird species were identified during breeding bird surveys. Of those locally uncommon species, the development has the greatest potential to impact the potential Brown Thrasher and Vesper Sparrow habitat, although the Vesper Sparrow preferred habitat is fairly limited within the Subject Property.</p>	Site clearing and tree removal	<ul style="list-style-type: none"> Impact to nests and nesting birds 	Moderate importance: mitigation measures are critical to ensuring this does not significantly impact the birds present on-site.	<ul style="list-style-type: none"> Vegetation and tree clearing should not occur between April 1 and September 30th as per the Migratory Birds Convention Act (1994). If clearing is to occur during the nesting season, a nest survey should be completed by a qualified bird biologist 48 hours prior to the proposed works to identify any nest which are not to be disturbed until the young have fledged. Nests are not to be disturbed until the young have fledged or until the nest is deemed inactive. Education of contractors on wildlife encounters. 	Tree removal and vegetation clearing will be performed when no nests are active within the natural areas. Overall tree cover within the property will be maintained through tree plantings in Open Space Blocks 3, 7 and 8, within the wetland and SWM pond, plus landscaping trees and within the Linkage block.	Residual effects are expected to be minor as the bird species observed within the development footprint area are not particularly sensitive species, and the removed habitat will be offset with tree plantings in the Open Space Blocks.



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
		Excessive noise could displace forest breeding birds within wooded areas. Noise may lead to the avoidance of adjacent areas during construction.	Noise from development activities	<ul style="list-style-type: none"> Disturbance of bird species 	Low importance due to the temporary nature of the increased noise.	<ul style="list-style-type: none"> Construction noise is very difficult to mitigate; the most effective measure is to limit construction activities during the April 1-September 30th season as per the Migratory Birds Convention Act (1994). 	Due to the temporary nature of the impact, existing bird species are anticipated to return to the area once construction activities end.	Residual effects are anticipated to be minor and short-lived.
		Due to the overall size of the proposed development, it is likely to create additional ambient light pollution. Light pollution at night can negatively affect birds by disrupting their biological rhythms.	Development	Light pollution	Moderate importance due to the long-term nature of the impact.	<ul style="list-style-type: none"> Direct outdoor lighting away from natural areas. Reduce the number of outdoor lights that remain on throughout the night, including those in offices with windows. Use long wavelength (ambers and reds) lighting for outdoors, as this colour is perceived as being lower intensity to wildlife (most mammals). 	The impact of lighting introduced by the proposed development depends on the lighting choices made during the building design.	Building designs are not finalized at the time of writing this EIS. If lighting options are carefully considered during the building design, residual impacts can be limited.
		New developments close to natural areas with glass surfaces pose a threat to birds. Birds can see through glass and what is reflected on glass, but not the glass itself, leading to death for birds who attempt to fly through it.	Window installations	Potential for residual negative impact on the local and migrating avian population from bird strikes.	Moderate importance due to the long-term nature of the impact.	<ul style="list-style-type: none"> Bird-friendly measures are recommended for installation in the proposed buildings. For more information on bird strikes and bird-friendly building design, visit FLAP Canada's website. 	The impact is dependent on the choices made during building design. As these are warehouse structures, it is expected there will be relatively few windows in the structures.	Building designs are not finalized at the time of writing this EIS. If window options are carefully considered and/or bird friendly measures are incorporated during the building design, residual impacts can be limited.



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
	Fish and Amphibians	The wetland has no open water areas, so it can only support limited amphibian breeding and cannot support species such as turtles or fish.	Wetland realignment	Potential for short-term negative impact during wetland realignment period. Potential for long-term positive impact due to increased open water areas and habitat diversity.	High importance due to long-term nature of impact.	<ul style="list-style-type: none"> New wetland habitat should be created prior to removing the current wetland, if timing allows, to provide habitat to move any encountered amphibians directly into. If any resident species are encountered during wetland relocation, relocation should occur by a qualified biologist in accordance with available best management practices. A permit for collecting and handling wildlife will be required from the MNRF as part of any relocation program. Randall et al. (2018) recommends against scheduling projects when amphibians may be present or unable to move, which includes the winter. 	Should the appropriate mitigation measures be undertaken and the restoration of the lands allocated for wetland realignment be achieved, the overall impact on wildlife will be positive and provide greater habitat diversity for local species.	Residual negative impacts will be short-term should the realignment plans be properly undertaken, with long-term positive impacts due to increased habitat diversity.
	Incidental	Lighting penetrating into the woodlands can disrupt nocturnal wildlife by attracting insects to places they may not normally be and making it more difficult for prey to hide in the dark, it may force some animals away from habitats they would otherwise occupy and can alter day/night patterns.	Development	Light pollution	Moderate importance due to long-term nature of impact.	<ul style="list-style-type: none"> Direct outdoor lighting away from natural areas. Reduce the number of outdoor lights that remain on throughout the night, including those in offices with windows. Use long wavelength (ambers and reds) lighting for outdoors, as this colour is perceived as being lower intensity to wildlife (most mammals). The VPZ will help to reduce lighting impacts into woodlands. 	The impact of lighting introduced by the proposed development is dependent on the lighting choices made during building design.	Building designs are not finalized at the time of writing this EIS. If lighting options are carefully considered during the building design, residual impacts can be limited.



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
WODM4-4 Community/ Northern Woodland	Trees and vegetation	Removal of the WODM4-4 community is required to accommodate the proposed development, including all trees and vegetation present within the woodland.	Tree removal and vegetation clearing in WODM4-4 community situated in the north end of the Property.	<ul style="list-style-type: none"> Disturbance and removal of habitat of wildlife, including birds that may be inhabiting the WODM4-4 community Loss of potential bat habitat. 	<p>Moderate importance due to species composition (common species Black Walnut (<i>Juglans nigra</i>) is the abundant tree species, and there were no uncommon or rare native* species found to occur in the community).</p> <p>*The butternut hybrid is not considered a native species due to its hybridization with non-native Juglans species, as butternut cannot hybridize with the native black walnut.</p>	<ul style="list-style-type: none"> Vegetation and tree clearing should not occur between March 31st and August 31st as per the Migratory Birds Convention Act (1994). If clearing is to occur during this time, a nest survey should be completed by a qualified bird biologist to identify any nests that are not to be disturbed until the young have fledged. The proposed VPZ zone setbacks from the FODM2-1 and FODM1-1 communities will include a mix of native tree, shrub and herbaceous plantings, which will mitigate the loss of trees removed to accommodate the proposed development. Tree planting in Open Space blocks 1 and 3 will offset for the loss of WODM4-4. In addition, tree plantings within the swamp community in the new wetland will offset for additional tree removals within the Subject property, and will strengthen the existing swamp community. Further correspondence with the MECP surrounding the removal of potential bat habitat is needed. It is recommended that bat boxes, bat condos and BrandenBark be installed within the Open 	<p>The proposed development will result in the removal of the northern woodland (WODM4-4). This was found not to be a significant woodland (Section 6.4). Although this feature is identified in UHOP as a Linkage, it is isolated and likely provides limited linkage functions. No rare plant communities occur in this woodland. However, surveys performed by GeoProcess identified one hybrid butternut and potential bat maternity roots, and mitigation of bat habitat removal will likely be required.</p> <p>Tree plantings on within the development proposal will be accommodated in Open Space Blocks 3, 7, and 8, within the VPZ for FODM1-1, within the VPZ for Blocks 4 and 5, within the wetland as a swamp community will be established and the wetland VPZ, within the SWM pond block, within the linkage along the southern property limit and within the landscaping.</p>	<p>Residual effects from tree removal are assumed to be relatively minor with proper implementation of recommended mitigation measures, including proposed plantings within the proposed VPZ from the adjacent woodland.</p> <p>The impacts from the loss of vegetation are well compensated for within the proposed plan. The overall number of trees proposed to be planted on the site is approximately double the number of trees proposed to be removed. On an area basis, the proposed plan is creating approximately 1.9 ha of treed area compared to the</p>



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
						Space blocks, around the SWM pond and within the wetland VPZ. These features will help to offset potential bat maternity roosting habitat that may be provided in the trees proposed for removal.		1.3 ha of treed area being removed. With the implementation of recommended mitigation measures, their development will have minimal long-term impacts on site vegetation removal.
Linkages	Linkage associated with WODM4-4	A 0.8-hectare linkage mapped by the UHOP. This linkage is associated with a Dry-Fresh Black Walnut Deciduous Woodland.	Removal of linkage	Loss of linkage	Moderate: the linkage will be lost and will require adequate mitigation measures to restore the lost functions.	<ul style="list-style-type: none"> Establishing a linkage block along the southern property limit that will link the FODM2-1 and FODM1-1 communities. This linkage will be created to strengthen the hydro-corridor linkage and will be planted with native trees and shrubs, and have a varied topography to increase cover structure. The SWM pond block will be vegetated and will replace many of the functions of the WODM4-4 community in the northern portion of the site. Combining this with a green access lane, strategic landscape tree plantings, and a wildlife crossing at Street A will maintain linkage functions across the northern part of the site. Tree removal is recommended to occur outside of the 	<p>The inclusion of a new linkage along the southern property limit will maintain east/west connectivity across the site.</p> <p>Design considerations for the SWM pond and access lane, combined with wildlife passage at Street A, will maintain linkage across the northern portion of the site.</p>	The creation of a linkage along the southern boundary, where there is currently a weak linkage through agricultural fields, and the inclusion of linkage functions along the northern portion of the property associated with the SWM pond, will maintain east/west connectivity through the site.



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
						combined breeding bird and bat maternity roosting periods (April to October). <ul style="list-style-type: none"> An open space block will be provided to the west of the existing linkage. An appropriately sized wildlife crossing will be installed under the proposed roadway, providing access to the open space block to the west. 		
	Linkage associated with FODM2-1	The proposed development will result in the retention of this linkage.	Construction and development	Potential for encroachment into the linkage during and after construction	No impact identified	<ul style="list-style-type: none"> Installation of silt fencing to delineate the extent of development and discourage the making of informal trails during construction. Creation of a 15-meter vegetation protection zone (VPZ) around the FODM2-1 community, using native plant species to buffer the linkage. Addition of vegetated lands to strengthen the hydro-corridor linkage south of the Property, providing further connection between the FODM2-1 and FODM1-1 communities. An appropriately sized wildlife crossing will be installed under the proposed roadway that separates FODM2-1 from the new linkage lands. 	The linkages associated with FODM2-1 are being retained. With mitigation measures to deter encroachment into the linkage during construction, no significant impacts are anticipated. Additional lands will be added to buffer the hydro-corridor linkage connecting FODM2-1 to FODM1-1.	No impacts to the linkage functions associated with the FODM2-1 woodland are anticipated.
	Linkage associated with FODM1-1	The proposed development will result in the retention of this linkage.	Construction and development	Potential for encroachment into the linkage during and after construction	No impact identified	<ul style="list-style-type: none"> The realignment of the wetland, in combination with its increase in size, will strengthen the connection between the wetland and the FODM1-1 community. 	The linkages associated with FODM1-1 are being retained. With mitigation measures to deter encroachment into the linkage during construction, no significant impacts are	No impacts to the linkage functions are anticipated. An enhancement of the linkage



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
						<ul style="list-style-type: none"> Installation of silt fencing to delineate the extent of development and discourage the making of informal trails during construction. Creation of a 10-meter vegetation protection zone (VPZ) using native plant species to buffer the linkage. Addition of vegetated lands to strengthen the hydro-corridor linkage south of the Property, providing further connection between the FODM2-1 and FODM1-1 communities. 	anticipated. Additional lands will be added to buffer the hydro-corridor linkage connecting FODM1-1 to FODM2-1. A stronger connection with the wetland will be created when the wetland is realigned and increased in size.	functions is anticipated.
Significant Wildlife	Potential Bat Maternity Colony Habitat (FODM2-1, FODM1-1, and WODM4-4 communities)	<p>GeoProcess performed a bat maternity roost survey within the WODM4-4 community in 2020 and found twenty (20) candidate bat maternity colony trees.</p> <p>Other forest communities within the Study Area, including the FODM2-1 and FODM1-1 communities, are outside of the proposed development footprint and were therefore not assessed and are assumed to provide habitat for bat maternity colonies.</p>	Removal of the WODM4-4 community in order to build the proposed development.	Complete loss of potential bat maternity colony habitat.	High importance.	<ul style="list-style-type: none"> Further correspondence with the MECP surrounding the removal of potential bat habitat is needed. It is recommended that bat boxes, bat condos and BrandenBark be installed within the Open Space blocks, around the SWM pond and within the wetland VPZ. These features will help to offset the potential bat maternity roosting habitat that may be provided in the trees proposed for removal. Tree removal should be done outside of the bat maternal roosting window, April 1 to October 30, as dictated by Ontario Ministry of Natural Resources and Forestry (MNRF) bat protocol. 	The overall potential roosting trees was not very high within the WODM4-4 community. The roosting habitat will be replaced throughout the site at a higher level than what is being removed. The final number of bat roosting structures will be established with the MECP.	It is anticipated that there will be no impact on bat roosting habitat and functions across the property due to the installation of bat roosting structures, the plantings that will occur across the site, and the protection of other woodlands, particularly the FODM2-1 community.



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
	NHIC species element occurrences and field observations of Special Concern and rare wildlife species	<p>Habitat for Eastern wood-pewee is present within the Study Area. Eastern wood-pewee is further discussed in the Species at Risk section below.</p> <p>Potential habitat for woodland vole is present in FODM2-1 and FODM1-1 communities. Targeted surveys were not done for this species.</p> <p>Both provincially rare (S2) species Cup Plant (<i>Silphium perfoliatum</i>) and locally rare Virginia False Dragonhead (<i>Physostegia virginiana</i>) are present in the WODb community. As these plants are located in an area that appears to have been planted with a variety of species, it is likely that these are not naturally occurring. The habitat that the cup plant was found in is not characteristic of its natural habitat of wet prairies and floodplains.</p> <p>Regionally rare Ontario Aster (<i>Symphyotrichum ontarionis</i>) is present in the SWDM4-1a community.</p>	Removal of northern woodland communities to make way for development.	Loss of a cultural community containing Cup Plant and Virginia false dragonhead.	Moderate importance	<ul style="list-style-type: none"> Education of contractors on interactions with wildlife. Preparation and implementation of a Transplant Plan for provincially and locally rare plant species observed in any communities that will be disrupted by construction. 	The two communities that provide potential habitat (FODM2-1 and FODM1-1) are not within the development footprint and will not be impacted. A transplant plan will be created for the cup plant and Virginia false dragonhead.	Impacts are not anticipated on the potential vole habitat. Transplanting of rare plant species to a new and suitable location.
Species at Risk	American Chestnut	One American Chestnut (endangered provincially and federally) was located in the FODM2-1 community in the southwest corner of the Subject Property, approximately 20.3m from	No proposed activity within the community where this tree is present. The FODM2-1 will be provided with a VPZ of 15 meters.	<ul style="list-style-type: none"> No impact identified—the roots of a sick and/or dead American chestnut are not likely to reach the distance to where 	Minor—the community this tree is present in will continue to exist post-development and has	<ul style="list-style-type: none"> The Ontario Recovery Strategy Series for American chestnut (MNR 2012) recommends habitat for American Chestnut to include the ELC community where the tree is located, and if an individual is close to the polygon edge, a 30 m setback 	No impact.	No impacts expected. The community this tree is present in will continue to exist post-development and will receive a VPZ.



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
		<p>the edge of the proposed woodland buffer.</p> <p>GeoProcess’s assessment of the American chestnut found that it had declined since the Stantec survey and now appears to be dead, with one possible leader, the leader’s viability could not be confirmed. Based on observations made in 2024 and 2025, the tree has entirely died and is no longer standing. No viable shoots were observed, nor were any young trees found in the area.</p>		development is occurring.	received a buffer. Additionally, the tree has already been noted to be in steep decline and potentially dead.	from the stem of the tree. An MNRF authorization may be required for development adjacent to the American chestnut occurrence.		
	Butternut	GeoProcess found numerous butternuts in the locations surveyed by Stantec, which are all located off-property and beyond the development footprint. Only one butternut was found on site, within the WODM4-4 community, which has been identified as a hybrid.	Removal of one butternut hybrid in WODM4-4 community.	The presence of hybrid butternut within wind-pollination distance of the butternuts outside of the development footprint can lead to genetic mixing with the native butternut population, which can threaten conservation of the native and Endangered butternut species.	Minor – only one butternut was identified within the development footprint, and this tree has been identified as a hybrid.	<ul style="list-style-type: none"> Removal of the butternuts along the property limit are not proposed, but further study and application of buffer zones will be finalized in consultation with the MECP. The butternut in the WODM4-4 has been determined to be a hybrid based on field indicators. A Butternut DNA hybridity assessment is recommended to make a final determination on whether the tree is a hybrid. 	The removal of one butternut hybrid can have a positive impact, given the potential for the hybrid butternut to cross-pollinate with butternuts within the range of wind pollination.	Impacts to butternut are not anticipated.
	Eastern Wood-pewee	Eastern wood-pewee was observed singing in the deciduous forest community (FODM2-1) at the southwest corner of the Study Area during both breeding bird surveys and is presumed to be breeding in the area (Stantec, 2018).	Adjacent construction and development.	Minimal impact- no direct encroachment into Eastern wood-pewee habitat, however noise and light pollution could pose an indirect impact.	Minor impact.	<ul style="list-style-type: none"> Development will not directly impact this forest, meaning that habitat loss will be avoided. A 15 m VPZ is provided along with an enlargement of the woodland. 	Eastern wood-pewee prefers larger woodland units. As the woodland size is proposed to become larger through the planting of Open Space Blocks and the VPZ, it is likely that the habitat for the pewee will be enhanced.	The deciduous forest community in which the Eastern wood-pewee was observed (FODM2) will be protected.



Valued Component	Feature/Function	Discussion	Proposed Activity	Identified Impact	Impact Importance	Mitigation Measures	Impact Assessment	Residual Impacts
								The proposed development will increase the size of the pewee habitat, providing an enhancement over current conditions.
	Monarch	Monarchs were observed in several locations throughout the Property. Optimal breeding habitat for this species was not observed anywhere on the Property; however, the meadow community on site does serve as foraging habitat.	Removal of the meadow community and nectar plant species present across the development footprint.	Loss of nectar plant species within the development footprint.	Minor impact- no significant monarch habitat (foraging or breeding) was observed within the Study Area.	<ul style="list-style-type: none"> The realigned wetland includes a wet meadow community, which will support nectar-feeding plants for monarchs. Milkweed will be included in the planting lists for the drier locations, including the wetland VPZ. Should any monarch caterpillars be encountered during vegetation clearing, the caterpillar and the plant they are on should be moved to a milkweed plant outside of the vegetation clearing zone. 	Currently, the site provides marginal habitat functions for monarchs. The combination of planting nectar plants and milkweed on the site will, at a minimum, maintain the current habitat functions, but will likely improve upon it.	No impact to this species or its habitat is anticipated from the development.
	SAR Bat species	Potential bat maternity roost habitat was found within the WODM4-4 community.	Removal of WODM4-4 community.	Loss of bat maternity roost habitat.	Moderate impact- bat habitat will be lost, but offsetting measures will provide new habitat options.	<ul style="list-style-type: none"> Tree clearing should occur outside of the bat active period of April 1st until September 30th as described by the Ontario Ministry of Natural Resources and Forestry (MNRF) bat protocol. It is recommended that bat boxes and bat condo structures be included in the wetland block VPZ, SWM pond block and Open Space blocks. 	Bat maternity habitat will be removed, but if mitigation measures are taken, they will provide new habitat options to offset the loss.	Including built bat habitat structures will offset the loss of potential roosting habitat within the WODM4-4 community. The results of the snag survey and off-setting bat habitat will be discussed with the MECP.



9.2. Short-Term Impacts

Short-term impacts are most likely to occur during the construction phase of the development. These impacts are considered transient and only exist while perturbation is occurring.

Table 30: Short-Term Impacts

Impact	Impact Assessment	Mitigation Measures	Residual Effects
Noise from construction activity	Excessive noise could displace forest breeding birds within wooded areas. Noise may result in the avoidance of the adjacent areas during construction; however, as the majority of the wildlife found within the local landscape is tolerant to disturbances, they are anticipated to return to the area once construction activities end.	Since construction noise is very difficult to mitigate, the most effective measure is to limit construction activities during the most active calling times, dawn and dusk, during the breeding bird season (April to August).	Residual effects are anticipated to be minor and short-lived. Since the Subject Property is close to the airport and adjacent to Highway 6, noise is already present. It is likely that the species within the Study Area are generally tolerant to this noise and adjacent urban activities.
Dust from construction activity	Dust from construction activities could drift to natural areas and adjacent residential areas. With proper controls, this should be limited.	Water suppression of dust should occur for all construction activities, including, but not limited to, site grading, haul roads and concrete cutting.	Residual effects are anticipated to be minor and short-term, given that appropriate mitigation measures are incorporated to reduce levels of dust due to construction.
Sediment loading off-Site	Sediment can enter downstream water bodies, especially during storm events, through erosion of exposed earth. This is particularly associated with site grading activities and the storage of fill.	With the implementation and maintenance of proper Erosion and Sedimentation Control Measures, impacts to the adjacent lands should be minimal.	No adverse effects from construction generated sediment runoff are expected with the implementation and maintenance of an approved ESC plan.
Tree cutting	Tree removals are proposed to accommodate the development.	Vegetation and tree clearing should not occur between March 31st and October 31st as per the Migratory Birds Convention Act (1994) and to protect roosting bats. If clearing is to occur during this time, a nest survey should be completed by a qualified bird biologist to identify any nests that are not to be disturbed until the young have fledged. Compensatory tree plantings are proposed across the site. It is anticipated that more trees will be replanted than are proposed to be removed. Currently, it is expected tree replacements will be at a ratio of 2:1	Residual effects from tree removal are assumed to be relatively minor with proper implementation of recommended mitigation measures, including proposed plantings within the proposed VPZ from the adjacent woodland.



9.3. Long-Term Impacts

Long-term impacts are generally the result of permanent land-use changes, or at least those likely to persist in the foreseeable future. Examples of long-term impacts include the removal of natural heritage features, changes to flow regimes within watercourses and changes to groundwater tables.

Table 31: Long Term Impact Assessment

Impact	Impact Assessment	Mitigation Measures	Residual Effects
Vegetation removal	<p>The proposed development will result in the removal of the northern woodland (WODM4-4). Although this feature is identified in UHOP as a Linkage, it is isolated and likely provides limited linkage functions. No rare plant communities occur in this woodland. However, GeoProcess’s surveys found one butternut and potential bat maternity roosts, and mitigation of bat habitat removal will likely be required.</p>	<p>Tree planting in Open Space blocks 3, 7 and 8 will offset for the loss of WODM4-4. In addition, tree plantings within the swamp community in the new wetland will offset for additional tree removals within the Subject property, and will strengthen the existing swamp community.</p> <p>Further correspondence with the MECP surrounding the removal of potential bat habitat is needed. It is recommended that bat boxes, bat condos and BrandenBark be installed within the Open Space blocks, around the SWM pond and within the wetland VPZ. These features will help to offset potential bat maternity roosting habitat that may be provided in the trees proposed for removal.</p> <p>Butternut assessment in consultation with the MECP will be required to make a final determination on whether the tree is a hybrid.</p>	<p>The impacts of vegetation loss are well compensated for in the proposed plan. The overall number of trees proposed to be planted on the site is approximately double the number of trees proposed to be removed. This is consistent with the City’s goal of increasing tree cover within urban Hamilton. With the implementation of recommended mitigation measures, the development will have minimal long-term impacts on site vegetation removal.</p>
Erosion of downstream receiving channels from stormwater discharge.	<p>Uncontrolled storm-runoff from the development has the potential to create destabilization of the downstream channel and impact downstream fish and fish habitat that might exist.</p>	<p>The Odan Detech Functional Servicing Report shows that peak flows in the downstream channel match between the pre- and post-development conditions. Water quality treatment is required to meet MOE targets. Stormwater will be controlled through the installation of a SWM pond and</p>	<p>The FSR shows that flows will be controlled to pre-development peak flows, and a greater volume of water will be captured for infiltration into the shallow groundwater system than under current conditions. This analysis indicates that, overall, stormwater from the site should not cause downstream channel erosion or increased flood risk. The increased shallow</p>



Impact	Impact Assessment	Mitigation Measures	Residual Effects
		LID measures outlined in Section 8.	groundwater recharge should help to maintain the on-site wetland and downstream channel/wetlands. Residual effects are not anticipated, given that appropriate mitigation measures are incorporated as recommended.
Light pollution	Lighting penetrating into the woodlands can disrupt nocturnal wildlife by attracting insects to places they may not normally be and making it more difficult for prey to hide in the dark, it may force some animals away from habitats they would otherwise occupy and can alter day/night patterns.	Direct outdoor lighting away from the woodland feature and reducing/eliminating all lighting on the side of the building facing the woodlands. Reduce the number of outdoor lights that remain on overnight, including those in offices with windows. Use long wavelength (ambers and reds) lighting for outdoors, as this colour is perceived as being lower intensity to wildlife (most mammals). The VPZ will help to reduce lighting impacts on woodlands.	Building designs are not finalized at the time of writing this EIS. If lighting options are carefully considered during the building design, residual impacts can be limited.
Thermal impacts on downstream waters	Stormwater discharge can cause thermal impacts on downstream receiving waters.	Stormwater discharge from the dry pond is likely to have only limited heating impacts, as the water is not stored for extended periods in the pond before release and is less susceptible to heating than water in a wet pond. As a result, the temperature of discharged water should be close to that of the ambient rainfall.	Currently, discharge from the site is discharged from the wetland community, which, based on the hydrogeology study, does not include groundwater discharge. Therefore, it is highly unlikely that the site is contributing cold water downstream. Due to the dry-pond design and the new wetland, it is anticipated that the thermal regime of water leaving the site post-development will be similar to current conditions, and that thermal impacts of stormwater will not be observed in downstream waters.
Thermal impacts on wetland from rooftop drainage	Stormwater generated on rooftops during the summer can be warmed by hot roof surfaces. This warm water could negatively impact the wetland.	A number of mitigation measures are recommended, including a high-albedo roof surface, buried outlet pipes, and potentially directing some flow to bioswales before discharge into the wetland.	It is anticipated that using a high-albedo surface, in combination with buried pipes, will provide sufficient cooling measures to reduce the greatest risks from thermal inputs into the wetland. It should be noted



Impact	Impact Assessment	Mitigation Measures	Residual Effects
			that most wetlands are quite thermally tolerant, as standing water in wetlands tends to get quite warm during the summer under natural conditions. Rooftop discharge, with the applied mitigation measures, should not enter the wetland at temperatures outside of the natural tolerance range for wetlands.
Fish Habitat	Flow	The Functional Stormwater Management Report, completed by The Odan/Detech Group Inc., has determined that adequate flow will be maintained from the site to downstream fish habitat. No mitigation measures are required.	Flow will be maintained to the downstream reaches of Ancaster Creek. No residual effects are expected.
Indirect Fish Habitat	Organic Matter	Include native vegetative material within the storm pond to maintain organic material transport to the downstream reaches of the watercourse.	A planted storm pond will allow the transport of organic material to Ancaster Creek to be maintained. No residual effects are expected.
Fragmentation from Street A	Street A can result in conflicts with wildlife and reduce the permeability of the development for wildlife movement.	Wildlife crossing structures/mitigation measures will be designed for Street A at two locations. Where Street A crossed the southern linkage, and between Block 3 and the SWM pond.	Incorporating wildlife crossing measures along Street A at multiple locations will improve animal movement across the site and reduce vehicle interactions.
Wetland Relocation	<ul style="list-style-type: none"> Please see Section 9.4 for a summary of potential impacts of wetland relocation and recommended mitigation measures. 		

9.4. Wetland Realignment

The proposal to relocate the on-site wetland needs careful consideration. The relocation should not occur if impacts cannot be mitigated, and an overall net gain can not be demonstrated. As discussed in Section 8.1, careful consideration has been taken before determining that the current wetland is even eligible for relocation. Based on the current condition of the wetland, it is a candidate for relocation, and the relocation can be completed to provide a net ecological gain. The following mitigation measures are in place to minimize impacts associated with the relocation. As a result, no residual impacts to the ecological functions of the wetland are anticipated.

9.4.1. Wildlife & Vegetation Clearing

In general, the impacts of the wetland relocation on wildlife can be avoided by adhering to the *Migratory Birds Convention Act* prohibition on vegetation and tree clearing from March 31st to August 31st of a given year. Wildlife use of the wetland was generally limited to a small number of amphibians, and methods to reduce impacts on these species are discussed below. Mitigation will also be important during wetland relocation to prevent impacts to resident species, such as birds, amphibians, and reptiles. If any resident species are encountered, relocation should be performed by a qualified biologist in accordance with applicable best management practices. A permit for collecting and handling wildlife will be required from the MNRF as part of any relocation program.

Amphibians enter their active breeding period in March in southern Ontario. Randall et al. (2018) recommend against scheduling projects when amphibians may be present or unable to move. Although amphibian calling from the existing wetland was limited during both GeoProcess' and Stantec's studies, translocation of frogs and toads should be performed for those that do live within the wetland. This translocation should occur following Randall et al. (2018) Guidelines for Mitigation Translocations of Amphibians: Applications for Canada's Prairie Provinces. Although these guidelines are intended for the prairies, however, they are applicable to the Subject Property. In general, these guidelines outline methods for successful translocation from the early spring to fall, and provide recommendations as follows:

- It is recommended that the new wetland habitat be created prior to removing the current wetland, if timing allows, to provide habitat to move the amphibians directly into.
- Recognizing that creating the new wetland prior to removal of the current wetland may be difficult due to site grading conflicts, amphibians will be relocated immediately downstream of the new wetland location if the new habitat is not available at the time of relocation.
- Prior to the commencement of any grading works, efforts should be made by a qualified biologist to capture and relocate any amphibians found within the wetland, following the guidelines outlined by Randall et al. (2018).
- Fencing should be erected between the retained downstream habitats and the new wetland.
- It is recommended that the relocation of amphibians occur in the early fall, allowing time for them to locate suitable overwintering habitat (Randall et al., 2018). Fall translocation is also beneficial as there will be fewer life stages of amphibians that need to be moved. If this is not possible, translocation could also occur in spring. However, a spring translocation has the potential to create more stress during the amphibians' critical breeding period and lead to lower population recruitment for that year, which could be detrimental due to the low number of amphibians currently present. To increase the efficacy of spring translocation, eggs can be moved to the new wetland, allowing for newly hatched individuals to establish in this feature, but there should still be a focus on the successful translocation of breeding adults. Movement of eggs in late spring could also be coupled with fall translocation of breeding adults to maximize the success of a new population. Summer movement is generally not recommended, as temperature stress could prevent translocation success.

Overall, multiple years of amphibian surveys have identified only a limited number of the amphibians utilizing the wetland feature; therefore, it is unlikely that many individuals will be required to be translocated.

9.4.2. Wildlife Road Mortality

Road mortality is a significant factor of species decline, especially for herpetofauna (e.g. snakes and turtles). This is especially problematic for species like turtles, which have long life spans and prefer roadside surfaces for nesting (Thompson, 2015; Patrick, Gibbs, Popescu & Nelson, 2012; Steen & Gibbs, 2004; Haxton, 2000; Ashley & Robinson, 1996). MacKinnon et al. (2005) studied reptile road mortality near a major water body (Georgian Bay), and one of their findings was that road crossing and mortality patterns were explained by the proximity to adjacent wetland habitat and water crossings. This indicates that enhancing habitat within the wetland could also increase road mortality, and that mitigation measures may be necessary. These mitigation measures are generally classified as exclusion (e.g. fencing) and connectivity (e.g. underpasses) structures and are further discussed in Section 10.1 (Mitigation Measures – Relocated Wetland Measures). It is recommended that fencing be placed along the property line with Highway 6 and around the perimeter of the wetland setback (along the development edges). The lower metre of the fencing should include a fine mesh that will prevent smaller wildlife from moving through the fencing and into the highway corridor.

Additionally, wildlife crossings are proposed at two locations where the proposed roadways would interrupt connectivity. One crossing is proposed in the northwest of the Property, allowing for passage under the road into the open space block to the west of it, and another crossing in the southwest, providing wildlife passage under the road between the FODM2-1 community and the proposed linkage expansion north of the existing hydro-corridor linkage.

Wildlife crossings should be appropriately sized for wildlife that may make use of them. Small mammals, amphibians, and reptiles, as well as medium-sized mammals such as raccoons, must be considered when sizing culverts. Sizing wildlife crossings requires consideration of the appropriate openness ratio. The openness ratio is calculated by dividing the cross-sectional area (culvert width x culvert height) of the opening by its length. This ratio represents the amount of light visible that can be seen through the crossing. The longer the passageway, generally the larger the opening needs to be to allow sufficient light through the crossing. Table 32 below shows the minimum and recommended openness ratios for different target species groups.

Table 32: Recommended and Minimum Openness Ratios per Target Species Group*

	Turtles	Amphibians, Snakes, and Small Mammals	Medium Mammals
Recommended Openness Ratio	≥0.25	≥0.1	≥0.4
Minimum Openness Ratio	0.1	0.07	0.1
<i>*Adapted from the City of Guelph Wildlife Crossing Guideline Version 1 (2023)</i>			

9.4.3. Road Salts

Since the wetland is located approximately 60 m from Highway 6, a potential indirect or long-term impact on the wetland is salination from salt runoff and spray. This may occur along Highway 6 and from proposed roads and parking surfaces within the Subject Property.



Pederson et al. (2000) compared deposition patterns of de-icing salts and resulting concentrations in soil water along a major road with a 70 km/hr speed limit, with the objective of evaluating the effect of distance from roadside and straw mat protective measures for trees. They found that salt deposition and soil water concentrations of NaCl decreased significantly within the 2 m adjacent to a roadside, when compared to areas far away. Straw mats around all sides of trees did have a small measurable effect in terms of protecting trees from salinity. They also found that salt concentrations were highest in winter, but that there was a strong tendency for elevated concentrations to persist in the summer, which is a serious concern for vegetation during the growing season. Overall, Pederson et al. (2000) recommended that plantings should occur more than 2 m from the roadside to prevent impacts on trees and lower salt concentrations in soil water.

Equiza et al. (2016) studied salt impacts on trees in Edmonton. Using collection bags placed at 2 m from the ground, they found that airborne salt salinity was four times higher along roadsides than in their control site. They also found that sodium levels remained relatively high at 20-50 m from the main roadway (Equiza et al., 2016). Meanwhile, in their study of de-icing salt transport in the Oak Ridges Moraine, Buttle & Labadia (1996) found that wind transport of salt was minor and was generally restricted to sites that were relatively exposed. This could indicate that trees and shrubs that are planted an appropriate distance (Pederson et al. 2000) away from the roadway could help prevent airborne salt deposition in the proposed created wetland.

The proposed wetland is approximately 60 m from the gravel shoulder of Highway 6, meaning that airborne salt spray from Highway 6 will likely not be a major impact on the proposed wetland. There is the potential for spray from internal roads to impact the wetland. While the 15 m VPZ between the proposed wetland and these roads will help to prevent salination, road runoff will be directed away from the wetland to the SWM pond, and salt alternatives should be considered on-site. These alternatives are outlined in Section 9.1 (Mitigation Measures – Relocated Wetland Measures). As highlighted by Pederson et al. (2000) in their study of salt impacts on trees adjacent to roads and mitigation by straw mats, it is possible to observe a small but measurable lessened impact if structures are used to block this deposition. Therefore, it is also recommended that salt spray and runoff blocking functions should be considered in the design of wildlife exclusion fencing, which is also discussed in Section 9.1.

9.5. FODM2-1

Site plans show that a roadway is proposed beyond the VPZ that will be afforded to the Dry – Fresh Oak – Red Maple Deciduous Forest (FODM2-1) community, which is a significant woodland. Traffic on this road is anticipated to be relatively low due to the access to the proposed building likely occurring before the road terminus. Including the buffer and adjacent open space blocks north and east of the FODM2-1 community, the woodland will be expanded from 1.48 hectares within the Property to 2.42 hectares, which is an approximately 63% increase. This increase in size will lead to a greater resilience to activities occurring on site. The first 5 meters of the Right-Of-Way (ROW) will be swale and will be composed of naturalized vegetation. The road surface starts approximately 10 m into to the ROW. The ditch is intended to act as an infiltration gallery, which will provide shallow groundwater recharge to the woodland edge, although the major groundwater flow direction is away from the woodland to the northeast. Impacts are not anticipated to the FODM2-1 community.

9.6. Cumulative Impacts

Cumulative impacts are changes to the environment resulting from past, present, and foreseeable future activities. The Subject Property and surrounding landscape have undergone considerable anthropogenic change over the past one hundred years. Former forest and marsh communities were converted into agricultural lands and, more recently, into residential housing to support the population growth from the urban areas of the City of Hamilton. The introduction of European species for cultivation and aesthetics, and the fragmentation of natural habitats, have altered the area's species composition and ecology. It is assumed that during an initial period of human development in the 1800s, local species would have been impacted to an unknown degree.

In recent years, the construction of the John C. Munro Airport, Highways 403 and 6, and residential subdivisions has altered the local area's character, moving it away from an agriculturally dominated landscape. As agricultural land use changed the natural functions of the landscape, so too does urbanization. The majority of the lands to the north of the site are developed, with the exception of narrow linkages and small core areas. The shift towards an urbanized landscape has already begun around the subject property, and impacts such as noise from Highways 6 and 403, and the airport, are already occurring.

The proposed works for the Subject Property will add to the cumulative impacts of urbanization over time through the addition of increased impervious surfaces, increased traffic, and loss of tree cover. Given existing disturbances in the surrounding landscape, the additional impacts of the proposed development will be only a small incremental increase over the antecedent conditions. Measures such as infiltration trenches, which will help to maintain shallow groundwater systems, will help to mitigate some of these impacts.

The majority of pre-European settlement wetlands in the surrounding area have likely been lost to development. The cumulative effects of wetland loss can be much larger than anticipated by their size (i.e. small wetlands can support important local functions like habitat connectivity and biogeochemical cycling), which include changes in ecology and hydrology. Impacts on wetlands should be thought of in terms of their effects on the larger interconnected landscape of hydrologic features, rather than only considering impacts at the site level. As such, the hydrologic and ecological connectivity and character of the newly created wetland have been carefully considered.

Although wetland relocation is proposed, it is not expected to lead to habitat fragmentation. The wetland is currently surrounded by farmland on all but the northern side, where there is a connection to an intermittent watercourse. This watercourse leads to a wooded area before it goes under Garner Road and further connects to Ancaster Creek. The northern connection will be both maintained and widened through the site plan, as the watercourse will be directed to an open channel adjacent to the stormwater management pond. The proposed wetland location also provides a connection to the southeastern wooded linkage per the UHOP (FODM1-1), thereby enhancing overall landscape connectivity.

9.7. Climate Change Impacts

The construction of the warehouse development intended for 140 Garner Road is planned with climate resilience in mind, as it will be part of the surrounding community for the long term. The proposed development plans aim to reduce climate change impacts through a number of initiatives. The following

considers the measures taken to reduce the development's impact on the climate and how the project has considered adaptations to climate change impacts.

The development of the site includes a variety of climate impact and sustainability values, including:

- Sustainable Materials and Supply Chain
- Sustainable Transportation and Mobility Choices
- Resource Efficiency and Waste Reduction
- Water Management and Conservation
- Sustainable Energy Performance and Building Efficiency
- Long-Term Plans for Climate Resilience and Adaptation
- Sustainable Construction Practices

While the final configuration of the buildings is unknown at the time of writing the EIS, a number of measures being adopted within the warehouse industry to become more energy efficient can be adopted at this site. These measures include:

- Installation of LED lighting to reduce power consumption
- Potential for the use and installation of solar cells on the building's roofing
- The use of high-albedo roofing colours to reduce heat radiance from the site
- The use of smart HVAC systems (heating, ventilation, and air conditioning) that are computerized and run on sensors that adjust consumption based on real-time occupancy and environmental data
- The electrification of equipment, including forklifts, and in the future, potentially trucking
- AI and Route Optimization: AI-driven management systems optimize warehouse processes and, more importantly, assist in the logistics chain by consolidating loads and planning the most fuel-efficient routes for the transportation supporting the warehouse

The development application recognizes the value that the natural environment provides for climate resilience. Specific to this application, the inclusion of protections and enhancements of natural areas within the Subject Property helps to mitigate climate change impacts. Maintaining natural areas and replanting trees removed to facilitate development at a ratio of approximately 2:1 provides carbon offsetting measures. In terms of long-term plans for resilience, the water balance to the new wetland will be maintained through Low Impact Development (LID) measures, including bioswales, soak-away pits, and rooftop water harvesting. These measures provide multiple benefits, including reducing stormwater runoff volumes that need to be managed and treated, replenishing the shallow groundwater system, and providing water directly to the wetland for use in sustaining its ecological functions. Managing stormwater in this way mitigates the increase in impervious surface, which is key when considering the potential for increased storm intensity under future climate scenarios. As climate change progresses, increased stormwater capacity and flood-resilience strategies are necessary to support safe, long-lasting developments prepared for future environmental conditions.

9.8. Impact Summary

The Subject Property is dominated by agricultural fields with pockets of woodland, and a linear wetland feature with an associated headwater drainage feature. The woodlands are small and have sharp transitions to their edges from agricultural fields. The wetland is seasonally inundated and is dominated by common reed to the north and non-native cattail to the south, supporting limited amphibians and birds, as listed in

Section 4.5.4. Historical aerial imagery shows that the phragmites has been continually expanding, with approximately 0.22 ha coverage in 2004 to 0.84 ha in 2023, representing approximately 12 % and 60% coverage of the wetland area, respectively, a percentage change of 281%. If interventions are not taken to control the phragmites, it will soon become the dominant species within the wetland in the future. As a result, the wetland was determined to be a suitable candidate for relocation, which would provide opportunities to curb the spread of this invasive species, increase the wetland's overall size and habitat complexity, and reduce the development interface around the feature. Overall, it was determined that an ecological net gain can be realized by relocating and creating a new, larger wetland community on the Subject Property.

The proposed development will result in the removal of the northern woodland (WODM4-4) to accommodate the proposed site plan. The linear wetland and headwater drainage features will be relocated southeast of their current positions. ELC and floristic surveys conducted by Stantec and GeoProcess did not identify rare vegetation communities.

While the northern woodland (WOM4-4) may provide maternity habitat for bat species, as evidenced by the bat maternity roost surveys and incidental observations of flying bats. It is likely that bats also use the other woodlands available within the Study Area for maternity roosting. Impacts on their populations can be mitigated through the installation of offsetting habitat (i.e., bat boxes). Correspondence with the MECP will be necessary to determine whether additional studies are required and whether offsetting measures are required. Regardless of the outcome of the discussions with the MECP, the inclusion of bat boxes/condos within the wetland, Open Space, and SWM blocks is recommended. The majority of trees to be removed from (WOM4-4) are black walnut, while there is one potential butternut tree that shows hybrid characteristics, and DNA testing will be required to determine hybridity. This feature is listed as a linkage per the UHOP but shows little linkage potential when compared to the FODM2-1 and FODM1-1 communities, as it is isolated by farm fields and does not act as a connection between two natural heritage features.

Butternut occurrences on the adjacent properties will be further assessed through a Butternut Health assessment and may be subject to DNA confirmation of hybridity status and discussion with the MECP.

Breeding bird point count surveys conducted by Stantec found a calling eastern wood-pewee within the FODM2-1 community, and it was assumed to be breeding. While the species was found to be utilizing the woodland, the low numbers of birds recorded indicate that the woodland would not be considered critical habitat for this species. Eastern Wood-Pewee is considered an interior forest nesting bird, but has been known to utilize smaller woodland pockets such as the woodlot adjacent to the Site. Urbanization has been shown to influence avifauna composition, generally resulting in an increase in abundance but a decrease in richness, with urbanization favouring seed eaters, omnivores, and ground feeders, while selecting against high canopy and foliage foragers, insectivores, bark gleaners and drillers (Chace and Walsh, 2004). Urbanization has been shown to reduce eastern wood-pewee populations when forest tracks are less than 25 ha in size (Friesen et al. 1995). Friesen et al. (1995) found that if forest path size did not change, there was still a decrease in Nearctic-Neotropical migrant abundance and richness due to urbanization, and that a 4 ha forest patch with no houses had more species than a 25 ha patch surrounded by houses. It was found that the structure of the vegetation in urban environments has been strongly correlated to native bird diversity and species richness (Mills et al. 1989). Impacts on this species will be mitigated by the creation of a 10 m VPZ around the woodland, but it is possible that the urban disturbance will make this habitat less suitable. However, given that there is already no interior habitat available for this species in the adjacent woodlands, it is difficult at this point to predict the influence and impact the proposed development will have on the nesting use of the woodlands by this species in the future. The proposal will increase the

woodland size by approximately 65%. This increase in size, while not creating interior habitat, will result in a larger woodland, which will be more favourable habitat for this species. Only post-development monitoring would determine the ultimate outcome for this species' use of the woodland.

Wetland relocation has the potential to impact resident species and water regimes. Impacts on amphibians can be mitigated by following Randall et al.'s (2018) Best Management Practices for amphibian relocation. This includes limiting construction activities to appropriate times, relocating amphibians at suitable times, and carefully considering how to relocate amphibians of different life stages. Hydrologic regimes will be maintained by directing rooftop drainage to the wetland. A water balance based on the wetland size and water which can be directed to the wetland demonstrates that the feature can be maintained with water throughout the year. Impacts due to sediment release can be controlled by implementing robust sediment and erosion controls, which are monitored throughout the construction phase. Fencing is recommended to prevent wildlife such as amphibians and reptiles from interacting with vehicles within the development.

Because the proposed use is large warehouse buildings, there are few windows or glass surfaces. As a result, there is only limited concern regarding bird strikes with the buildings. Bird-friendly design elements should still be considered for windows or glass surfaces, such as glazing, to reduce reflectiveness of the surface, surface treatments that reduce the transparency of the glass or window coverings.

10. Mitigation Measures

The following sections identify mitigation measures to be utilized to avoid and minimize the impacts of the proposed development on natural features.

10.1. Relocated Wetland Measures

10.1.1. Vegetation

The relocation of the wetland is being undertaken with the explicit goal of creating a functional ecosystem. The targeted ecosystem will be a larger wetland with a greater plant and topographic diversity than currently exists. It will include elements of an emergent marsh area, swamp community, open water, and higher land rises that will support a shrub thicket community. The design will incorporate enhanced features, including amphibian overwintering and reptile basking habitats.

The successful establishment of native wetland vegetation in both the wetland and the riparian buffer zone (15 m VPZ) will be critical and can be achieved through a combination of soil salvage, seeding, and planting trees, shrubs, and herbaceous vegetation. Soil salvage should not occur in the northern portion of the existing wetland, as it contains invasive common reed (*Phragmites australis*). A benefit of salvaging soil from the existing wetland is the use of its seed bank, microbes, and insects, which support the establishment of native vegetation communities in the new wetland.

Given that common reed already exists in the current wetland, it will be especially important to contain and prevent the spread of this plant into the relocated wetland. Invasive species are a common concern in wetland restoration projects since these can colonize and outcompete slower-growing native species (Aronson & Galatowitsch, 2008). Therefore, invasive species management will be necessary. To prevent

common reed from spreading into the new wetland, it can be removed following MNR (2011) Best Management Practices.

10.1.1.1. Relocated Wetland Parameters

Parameters identified as key design targets include wildlife habitat complexity, a variety of plant communities, and water levels and durations required to support the overall wetland elements. The created wetland not only needs to replace and replicate the existing wetland feature and its functions, but its goal is also to achieve an enhancement over the existing form and function. The following design criteria have been established:

- An enhanced native plant community, rather than the existing community that is dominated by common reed, narrow-leaved cattail and reed canary grass.
- Longer-term invasive species monitoring and management.
- The establishment of open water pockets to provide amphibian and reptile habitat. In the pools, a mix of emergent and submergent species has been prescribed.
- Establishing a functional swamp community.
- Emergent vegetation is proposed for large portions of the wetland area.
- A wet/mesic seed mix for transitional zones.
- Shrub thickets on the higher topographic areas.

It is anticipated that the deeper water conditions will allow a more diverse species mix to persist while discouraging the growth of narrow-leaved cattail, reed canary grass and common reed. This notion is supported by Mauchamp, Blanch, and Grillas (2001), who studied the establishment of common reed seedlings in different water depths and found that young plants require shallow water levels without long lasting submergence to grow and survive, while tolerance to submergence increases with age. Therefore, if deeper water conditions are maintained throughout the growing season, it is expected that this will help to prevent common reed seedling colonization of these deeper pools.

Three planting zones are proposed based on wetland water depth:

Zone 1 Shallow: This zone will account for a little over fifty percent of the wetland footprint. Based on the draw down calculations, this portion of the wetland will see frequent drying during the summer months. The planting plan should include plug nodes and a meadow seed mix for Zone 1, comprised of a mix of forbs, grasses and sedges such as:

- Canada rush
- Turtlehead
- Blue flag iris
- Fox sedge
- Fowl bluegrass
- Blue vervain
- Meadow sedge

It is likely that common reed and narrow-leaved cattail will eventually begin to grow throughout this zone, but it is hoped that the seed mix can establish to allow a mix of other species to persist. Invasive species

management should target Zone 1 and prevent the spread of invasives to deeper water pools. Plants are to be planted as plugs on 1.0 m centres.

Zone 2 Mid (pools): This planting zone is located between Zone 1 and the deeper pools of Zone 3 and serves as a transition zone representing an increase in soil moisture regime. Plants are to be planted as plugs on 1.0 m centres, and this zone should include species such as:

- Canada rush
- Turtlehead
- Blue flag iris
- American bur-reed
- Fringed sedge
- Dark green bulrush
- Water arum

Zone 3 Treed Swamp: This planting zone is located at the northern portion of the wetland and expands on the existing treed swamp community. The swamp community should be seasonally inundated with water for the spring and potentially into the early summer, depending on how wet the season is. Deep vernal pools will provide extended pooling of water into the summer months. Tree plantings will be at a woodland density of 10 trees per 100 m². Species to consider within the swamp community include:

- Silver maple
- Red maple
- Bur oak
- Swamp white oak
- White cedar

Wetland VPZ Plantings:

In addition to the proposed wetland planting zones, proposed plantings along the perimeter of the wetland should incorporate the use of native tree and shrub material, including calliper, container-grown stock and plugs. VPZ plantings will provide a barrier from adjacent land use and help reduce traffic noise levels and wind. Plants for this area are recommended to include a range of salt-tolerant species.

The wetland should be further enhanced for wildlife use, and the following features can be added to achieve this enhancement:

- Brush piles along the wetland margin can serve as habitat for small mammals, reptile and birds.
- Pollinator rest structures comprised of larger stones (boulders) can be placed along the margins of the wetland.
- Logs or stumps should be added to the deeper pools to provide basking areas for turtles and frogs or roosting locations for birds.
- Bird nesting structures (e.g. nesting tunnels) should be provided for small birds. These structures provide nesting habitat without allowing airport hazard birds like Canada geese to proliferate as they could with the installation of nesting islands (Ducks Unlimited Canada, n.d.).
- Bat boxes along the wetland limit and/or within the wetland setback.

10.1.2. Wildlife Fencing

To prevent potential herpetofauna and small mammal mortality, GeoProcess recommends that reptile/amphibian exclusion fencing be installed along the east, south, and west of the proposed created wetland. This will allow for ecological connectivity to the north and downstream waters, but will prevent wildlife from entering roadways. Connectivity to the south-eastern UHOP linkage will also be maintained for larger wildlife that can go over the fencing, and for small wildlife entering the area, which can travel along the fencing towards the northern opening. However, small wildlife will likely be prevented from entering this linkage area unless there is the potential (in consultation with the MTO) to position fencing closer to Highway 6. If this is possible, fencing would ideally also be connected to an existing culvert under the highway, which could act as an eco-passage to the wooded area on the eastern side of Highway 6. See Figure 3 and Figure 4 for diagrams of reptile exclusion fencing and Figure 5 and Figure 6 for photo examples.

Fencing should be constructed to a minimum height of 2 m (MECP, n.d.) and should have an overhang lip at the top, to prevent species from climbing up and over the fence. It is recommended that the fencing have a durable sheeting (e.g. geotextile, fine mesh, etc.) installed over it for the lower metre. This will be dually-functional, preventing species like snakes and turtles from going through the fence, while also helping to reduce any residual salt spray from Highway 6 and salt spray from interior roads, and may also help to deter some waterfowl from entering the proposed wetland. Further, if there are any connectivity structures under Highway 6 (i.e. culverts), it may be possible to add connections to these in consultation with the Ministry of Transportation (MTO).

The MNRF (n.d.) recommends best practices for wildlife fencing. Applicable recommendations include:

- To deter digging, bury the fence 10 cm down with an additional 10 cm horizontal lip.
- Backfill and compact soil along the entire length on both sides of the fence.
- Stakes on fencing for snakes should be installed on the roadside (opposite to sediment control fencing) to prevent them from using the stakes to get over the top of fencing.
- For reptiles, the fence should have an overhanging lip on the species side.
- Avoid the use of geotextiles with nylon mesh lining, as snakes can become entangled in this fabric.
- Inspect fences after spring thaw and at regular intervals during active season, especially following heavy rain. This is especially important for geotextile fences, and any damage to the fence's integrity (e.g., tears, loose edges, collapses, etc.) should be repaired immediately.
- Manage tall or woody vegetation on the species side of the fence if it might allow animals to climb over. This is especially important in the spring and fall, and care should be taken to ensure no harm to animals or protected plant species during vegetation removal.
- Trees and shrubs can act as natural screens to help reduce road access and can be combined with fencing to help protect animals from predation.
- Add a turn-around at ends furthest away from wetland habitat, and at all access areas to direct animals away from fence openings. Ends can also be tied-off to trees and shrubs.

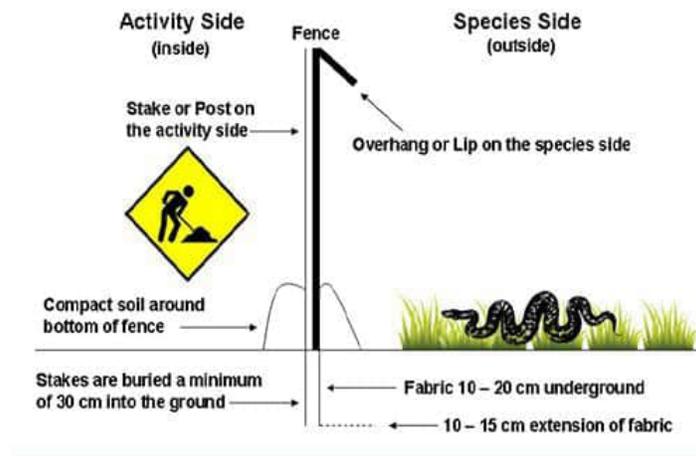


Figure 3: Reptile exclusion fencing diagram. Species side (outside) refers to the interior side of the created wetland. (MECP, Salt Alternatives on Interior Roadways)

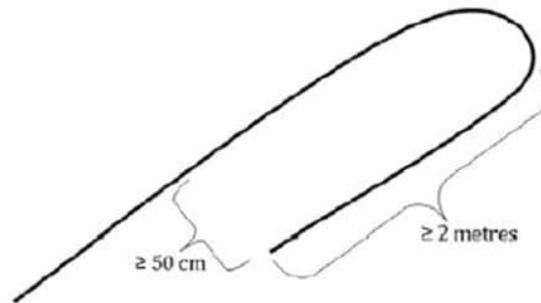


Figure 4: Inward curve at ends of fence to direct animals away from exclusion area. (MECP, Salt Alternatives on Interior Roadways)



Figure 5: Example of a galvanized mesh fencing used for the long-term exclusion of snakes and turtles from the adjacent highway (Megan Bonenfant via MECP, n.d.)



Figure 6: Example of heavy-duty geotextile fence, without overhanging top, shown (MECP, n.d.)

10.1.3. Preventing Salinity

In addition to reducing de-icing salt use, on-site salt alternatives should be considered to prevent de-icing salts from entering the wetland via runoff and spray. On-site road runoff should also be prevented from entering the wetland. Furthermore, as noted in the previous section, geotextile fabric can be used with wildlife exclusion fencing to help prevent salt spray from entering the wetland.

Commercial salt alternatives can reduce salt entering runoff. These sometimes contain liquid organic additives used as pre-treatments or to make a salt brine that helps salt adhere to roads for longer (Schuler et al., 2017). Additives can help reduce the amount of salt required, which should decrease the amount of salt needed. Unfortunately, Schuler et al. (2017) state that there is no broad body of literature on the ecological impacts of these additives; therefore, their use should be limited as much as possible until more

literature is available. Another salt alternative is sand, which can be mixed with salt but can cause sedimentation of downstream waters.

Snow should not be stored adjacent to the wetland block. All meltwater from snow storage should be captured and treated within the SWM system.

10.1.4. Waterfowl Prevention

Transport Canada discusses wildlife safety around airports in their document TP 1247 – Land Use in the Vicinity of Aerodomes. Natural habitats are listed as having a “potentially limited” level of risk in aerodomes, while marshes, swamps, and mudflats have a “potentially low” level of risk. Although land-use acceptability is site sensitive, marshes, swamps, and mudflats generally don’t have general land use acceptability in primary aerodomes (the area where planes are 1500 ft above ground level or lower). Therefore, there is a need to mitigate and monitor for hazardous bird species, primarily geese and gulls.

According to Ducks Unlimited Canada (n.d.), avoiding the use of artificial nesting islands will help to reduce attractiveness to geese. If there is a desire to attract smaller birds, appropriate raised nesting structures can be installed. Further recommendations to reduce attractiveness to hazardous birds come from the report by *LGL Limited report, Pickering Airport Site Zoning Regulations: Mitigation of Bird Hazards Arising From Particular Land-Uses by Davis and Lang 2004*. These include passive mitigation measures surrounding the design of shores and the vegetation surrounding ponds:

- Vegetation surrounding the pond should be natural and allowed to grow without cutting and mowing, except for along shorelines. Lawns should be avoided as hazardous birds may be attracted to them for eating. Surrounding vegetation should be dense and prevent birds on the water from seeing terrestrial predators as they approach. This vegetation can include a thick border of trees and shrubs, or native cattails (*Typha latifolia*) and bulrushes (*Scirpus sp.*).
- The proposed wetland should be designed to be unattractive to birds. It should generally have a long and narrow shape so that birds are always close to shore.
- The proposed wildlife fencing will help to keep hazardous birds out of the wetland from the west, south, and east.

Given the dense plantings proposed throughout the wetland and the small, narrow open water pockets proposed, the wetland design meets the recommendations for limiting waterfowl attraction and is unlikely to be found attractive to waterfowl.

10.2. Natural Heritage System Measures

- Minimize outdoor lighting and direct it down and away from natural areas. Lighting should be eliminated on the sides of buildings facing the woodlands, or, if required (e.g., emergency exits), only be lit when in use.
- Inspection by a qualified person(s) to conduct regular monitoring of all sediment and erosion measures implemented to ensure they are in working order. Any observed deficiencies must be recorded and immediately reported to the site contractor.

- The MECP will be contacted to confirm the best time to complete tree removals to avoid impacts to roosting bats. Typical timing is to avoid cutting between April and October.
- Tree removal should avoid the breeding bird window (April to September). If tree cutting is to occur during this window, a qualified biologist should conduct a nest screening prior to any cutting. If active nests are found, they are not to be disturbed until the young have fledged from the nest.
- Amphibians should be relocated to the new wetland prior to the removal of the existing wetland.
- All VPZs should be planted with native species reflective of the local area.
- Screening of all vegetated areas for rare or uncommon plants should be conducted prior to any vegetation removals. Transplant plans will be developed for any rare or uncommon identified plants, such as cup plant and Virginia false dragon.

10.2.1. Soil Preparation

Prior to planting, preparation of the existing soils to ensure successful establishment of restoration plantings and seeded cover is recommended. Following the Toronto and Region Conservation Authority's (TRCA) *Preserving and Restoring Healthy Soil: Best Practices for Urban Construction v.10* (2012) guidelines and recommendations identify a minimum standard for post-construction soil quality and depth for areas that have been disturbed as a result of clearing of vegetation, topsoil stripping, grading and compaction. Per section 2.3.2, Planting Beds, areas to be landscaped and planted with trees and shrubs require:

- A topsoil layer with an organic matter content of 10 to 15% dry weight, a pH of 6.0 to 8.0 and a minimum depth of 20 cm.
- Where feasible, the subsoil below the topsoil layer should be scarified to a minimum depth of 10 cm with incorporation of the upper material, thus avoiding stratified layers.
- Resulting total uncompacted soil depth should be minimum 30 cm.
- If organic matter is to be incorporated into the topsoil layer, apply 13 cm of topsoil followed by 7 cm of compost, tilling to a depth of 24 cm to produce a settled topsoil depth of 20 cm and a total uncompacted soil depth of 30 cm.

Once the planting area has been amended to meet the soil quality and depth standards, they are should be protected from disturbance to prevent impacts to the soil profile. To prevent erosion, the area should be seeded and planted following the implementation of soil amendments.

10.2.2. Planting Plan

The planting plan for the VPZs, Linkage, and Open Space will include:

- Planting and seeding of native and locally sourced (appropriate seed zone) trees, shrubs, and herbaceous plants to increase biodiversity, provide wildlife habitat, and protect the woodland edge from further degradation.
- Soil removal for this development should be done in phases to ensure topsoil is kept separate from subsoil. This will allow for the re-establishment of healthy soil structure in which to plant the buffer and edge enhancements.

- Trees and shrubs used in the buffer plantings will need to be fenced off in order to prevent deer browse impacts.
- All planted material should be maintained by regular watering throughout the plant warranty period. A watering schedule associated with restoration plantings has proven to be a significant success factor in restoration projects. It can take several months for roots to grow sufficiently beyond the planting hole to actively absorb nutrients and water from the surrounding soil. Initial watering should occur immediately following the installation of plant material. Care must be taken not to overwater planted material; soil should be cool and slightly moist but not wet. In the absence of City of Hamilton and HCA post-plant care watering guidelines, the proposed watering schedule will follow guidelines provided by Credit Valley Conservation, including watering for the first two years, for 15 to 20 minutes twice a week during the growing season if no rain occurs. In the third year, change the frequency of watering to once a week if no rain occurs. Trees species should be planted on 3 m centres and shrub species on 0.5-1 m centres promote higher density coverage.
- Removal of non-native invasive species is recommended prior to establishing plantings, where applicable. Species selection is based on native nursery stock availability and species adapted to the existing vegetation communities.
- Per the City of Hamilton's Natural Heritage comments on Stantec's (2018) EIS, mitigation measures for the monarch butterflies present on site should include vegetation enhancement. Therefore, milkweed (*Asclepias sp.*) plants should be included in the buffer zones, as these are necessary for the monarch's lifecycle.

Please refer to Whitehouse Urban Design Inc.'s landscape drawings for the prescribed planting recommendations.

10.2.3. Stormwater Management Block

The proposed SWM block will be located in the northeast of the Property, replacing the cultural meadow community and cultural-residential community that currently exists on site. Recommendations for the revegetation of the area that will be disturbed by the SWM block development include:

- Implementation of native plantings in the open space block between the SWM block and the realigned wetland, creating a naturalized corridor linkage between the pond and wetland.
- The access road to and around the SWM pond should consider the use of permeable ground surfaces, such as turfstone, to allow for vegetation to establish.

11. Monitoring & Adaptive Management Plan

Monitoring is an important component of the wetland realignment. Specifically, the proposed monitoring follows an adaptive management approach, in which feedback from monitoring results is used to adjust the wetland design and management to align with key goals and benchmarks. The following is the framework envisioned for the wetland monitoring plan. The final plan will be developed in consultation with the City of Hamilton and the HCA.

11.1. Adaptive Management Overview

Outcomes in environmental management are often uncertain due to knowledge gaps and unexpected ecosystem changes (Murray & Marmorek, 2004). Adaptive management (AM) is an approach that reduces uncertainty through a clearly defined process that treats management actions as well-designed scientific experiments to test and refine hypotheses (Walters, 1986; Taylor et al., 1997; Murray & Marmorek, 2004). AM is an iterative process in which decision outcomes are continuously monitored and evaluated to determine whether objectives are being met (Fischman & Ruhl, 2015; Olszynski, 2020). This process is illustrated in Figure 7.

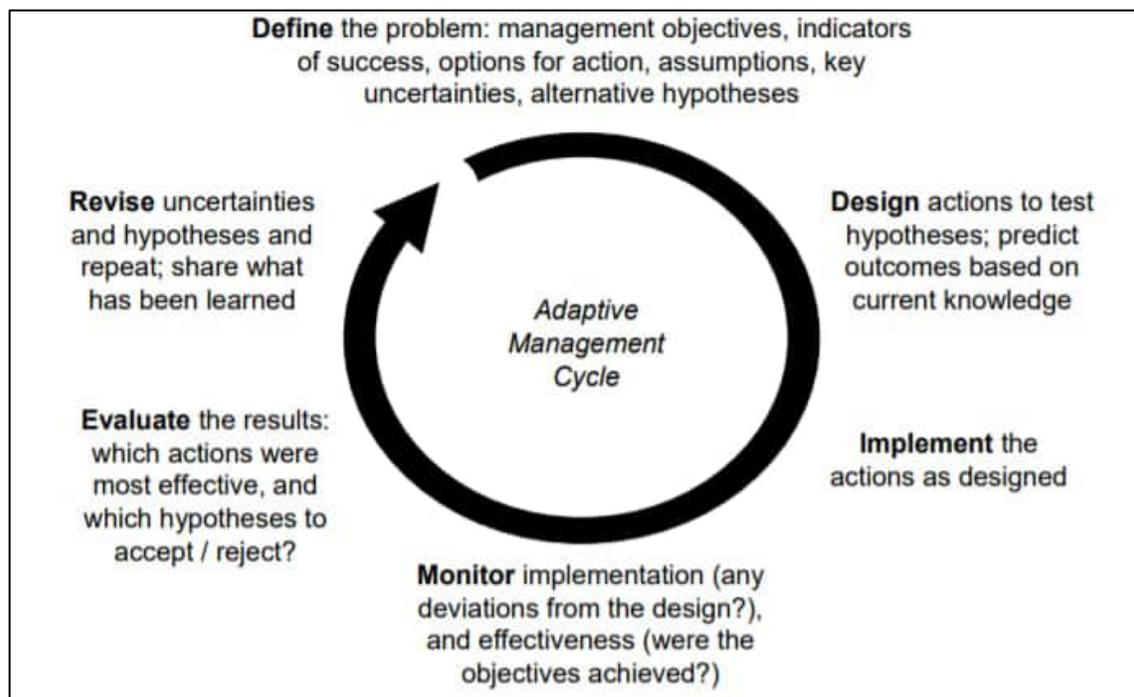


Figure 7: Adaptive management cycle, from Murray and Marmorek (2004)

AM is a very suitable solution for projects to proceed when there is uncertainty about outcomes, as is common in ecological restoration projects (Murray and Marmorek, 2004). However, the term "Adaptive Management" is commonly misinterpreted and misused in a manner that lacks the rigor to ensure beneficial long-term environmental outcomes (Olszynski, 2020). Common issues with the implementation of AM, outlined by Olszynski (2017), include it being viewed as a routine strategy that guarantees positive environmental outcomes, proponents paying insufficient attention to experimental design, and implementation being incomplete or lacking altogether. In their analysis of U.S. regulatory agency approaches to AM, Fischman & Ruhl (2015) found that a passive approach is commonly taken that fails to follow the necessary iterative steps and thereby fails to allow for learning from management. These authors define this approach as "AM-lite".

Given the many variables to consider in wetland relocation and the uncertainty about outcomes (e.g., how aggressively invasive species might establish), implementing AM is the best solution for the present project. This plan has been prepared in a manner which follows the cycle outlined in Figure 7. It is stressed that this plan must be followed through on all stages of the project, from assessment to permitting to monitoring

(Olszynski, 2020). It is especially important for effective monitoring to occur, as insufficient implementation is generally a common pitfall of environmental management projects, and the same is true for AM (Olszynski, 2017).

An AM program has been outlined for 140 Garner Road, following ESSA Technologies' (Greig, Marmorek & Murray, 2008) Guide for the Preparation of Adaptive Management Plans, prepared for the DFO. This guide includes the general AM cycle, as shown in Figure 7, and further defines the elements that should occur at each step (Table 33). The recommended approach follows the active AM strategy described by Greig et al. (2008). AM is recommended for the proposed created wetland and no other natural heritage features. Per Greig et al. (2008), actions subject to AM should generally be reversible, which they will be in the context of the restored wetland as it moves towards the goal of a functional ecosystem.

Table 33: Ideal elements within each step of the AM cycle, from Greig et al. (2008).

AM Steps	Ideal Elements within each Step
Step 1. Assess and define the problem	<ul style="list-style-type: none"> a. Clearly state management goals and objectives b. ID key uncertainties (what are the management questions?) c. Explore alternative management actions (experimental “treatments”) d. ID measurable indicators e. ID spatial / temporal bounds f. Build conceptual models g. Articulate hypotheses to be tested h. Explicitly state assumptions i. State up front how what’s learned will be used j. Involve stakeholders k. Involve scientists l. Involve managers 
Step 2. Design	<ul style="list-style-type: none"> a. Use active AM b. Include contrasts, replications, controls c. Get statistical advice d. Predict outcomes e. Consider next steps under alternative outcomes f. Develop a data management plan g. Develop a monitoring plan h. Develop a formal AM plan (for all of the remaining steps) i. Get the design peer-reviewed j. Obtain multi-year budget commitments k. Involve stakeholders 
Step 3. Implementation	<ul style="list-style-type: none"> a. Implement contrasting treatments b. Implement as designed (or document unavoidable changes) c. Monitor the implementation
Step 4. Monitoring	<ul style="list-style-type: none"> a. Implement the Monitoring Plan as it was designed b. Undertake baseline (“before”) monitoring c. Undertake effectiveness monitoring
Step 5. Evaluation of results	<ul style="list-style-type: none"> a. Compare monitoring results against objectives b. Compare monitoring results against assumptions, uncertainties, hypotheses c. Compare actual results against model predictions d. Receive statistical or analysis advice e. Have data analysis keep up with data generation from monitoring activities
Step 6. Adjustment / Revision of Hypotheses & Management	<ul style="list-style-type: none"> a. Meaningful learning occurred (and was documented!) b. Communicate this to decision makers c. Communicated to others d. Actions or instruments changed based on what was learned

11.2. Detailed Program

The following outlines the AM framework proposed for the realigned wetland.

11.2.1. Step 1: Assess and Define the Problem

Management Goals and Objectives

The AM program, as outlined below, is intended to ensure the long-term success of the proposed created wetland as a functional ecosystem. It is intended to ensure that the created wetland supports wildlife at a level equal to or greater than that of the existing wetland. It is also intended to monitor the establishment of a native plant community and prevent invasive species (e.g., *Phragmites australis*) from becoming dominant.

Management Questions

Management questions to be addressed by the AM program include the following:

1. How will plant establishment proceed, and will the planned plant communities become established?
2. Will invasive species become dominant, like in the original wetland?
3. Will it be possible to enhance amphibian use of the wetland?
4. Will invasive *Phragmites australis* be inhibited from establishing in the deep-water pools if the hydrologic regime is maintained throughout the growing season?
5. How well will the hydrologic regime of the wetland be maintained throughout the season?
6. How effectively will hazardous wildlife (for an aerodrome) be excluded from the wetland?
7. Will groundwater continue to be available for the wetland as in the existing condition?

Alternative Management Actions

Alternative management actions may need to be determined on a case-by-case basis, but could include the following:

- If amphibian monitoring determines that there is no use of the created wetland by amphibians, intervention will occur. This could involve installing habitat structures or increasing water inputs from rooftop storage (if available).
- If vegetation community monitoring determines that native plants are not establishing well, then additional plantings may need to be undertaken along with follow-up watering, depending on their location in the proposed wetland.
- If vegetation community monitoring determines that invasive plants are beginning to dominate the created wetland, then they will need to be removed according to available best management practices. Since common reed dominates the existing wetland, it is possible that it will eventually colonize the new wetland. This plant should be removed upon first detection, before it can spread.

Removal should follow practices outlined by the OMNRF (2011). Follow-up monitoring will help determine whether alternative action is needed.

- Due to the proposed wetland's location within an aerodrome, if hazardous wildlife are found to be using the pond, wildlife control procedures can be used per Transport Canada's TP 11500 document. If plantings are not achieving the desired mitigation for hazardous birds, they may need to be replaced or added to.

Measurable Indicators

Measurable indicators of the function of the created wetland will include the following:

- Presence of breeding amphibians
- Presence of breeding birds
- Plant community composition (e.g., prevalence of invasive vs native species and communities)
- Water level in the wetland
- Discharge volumes from the wetland

Spatial/Temporal Bounds

The AM program applies to the proposed created wetland, as shown on Map 8.

11.2.2. Step 2: Design

This AM program will employ several management strategies across different treatment areas and/or times, forming an overall management strategy with associated monitoring and actions. For example, the amphibian translocation BMP will be employed if amphibians are detected during wetland removal. In contrast, other BMPs, such as those for invasive species removal, will be employed later in the project monitoring window. The final AM strategy will be confirmed with the City and HCA prior to the commencement of works.

Statistics

Due to the relatively simple nature of the ecological data to be collected, descriptive statistics will be used.

Data Management

All data collected in the field should be immediately scanned and backed up. Reporting will follow the schedule outlined in Step 4 (monitoring). Analysis will occur after data is collected each year, and the results should be compared to the baseline data contained within this EIS.

11.2.3. Step 3: Implementation

Implement Contrasting Treatments

Implementation of the monitoring treatments should occur as outlined in Section 11.2.4. If unavoidable changes are made, these should be documented in the annual reports to the City and HCA, as specified in Section 11.2.6.

11.2.4. Step 4: Monitoring

All field data, observations, and other relevant notes, including survey date and time, temperature, wind speed, weather, and precipitation type, will be recorded during each monitoring visit. Photographic documentation will accompany field notes for all surveys. All recorded field data will be compiled after each survey visit and electronically scanned. Annual reporting, where applicable, will be provided to the City for 7 years, until completion of the regular monitoring program.

Baseline Monitoring

Baseline monitoring data will be collected within one to two years prior to site alteration.

Implementation Monitoring

Implementation monitoring will be conducted in two stages:

Construction Monitoring: will assess the implementation of the wetland design for both the physical form and planting requirements. An evaluation of the proposed design measures for the implementation of the wetland design will focus on dissemination and feedback to the project and construction team to confirm compliance with the plan's predetermined goals and objectives. Construction monitoring should include bi-weekly assessments during the construction phase to evaluate the implementation of the design. This will include the shape of the wetland is constructed correctly and planting monitoring to ensure that the correct species and planting protocols are implemented and upheld. A monthly letter report will be provided to the City documenting the results of construction monitoring.

Post-Construction Monitoring: Post-construction monitoring will include an overall assessment of the constructed wetland to determine whether the proposed design parameters were implemented in accordance with project requirements. A letter certifying that the wetland has been constructed as designed will be submitted to the City and HCA within a year of the construction completion. The letter will include an as-built survey documenting the constructed wetland form.

Effectiveness Monitoring

Effectiveness monitoring will be compared against the baseline monitoring. Surveys can include those shown in Table 34. The monitoring elements will be agreed upon with the City and HCA prior to initiating the monitoring program. Annual reports, including the applicable survey results, will be provided to the City and HCA at the end of each year. Monitoring will occur for seven years. If targets are met after seven years, monitoring will end. If targets are not met, monitoring will continue for an additional three years.

Vegetation Sampling Protocol (VSP)

In addition to yearly ELC community analyses, the Vegetation Sampling Protocol (VSP) will be used for terrestrial monitoring. VSP was developed by Danijela Puric-Mladenovic, an Assistant Professor at the University of Toronto, as a joint venture between the University of Toronto and the Ministry of Natural Resources and Forestry. This protocol works in conjunction with ELC, but where ELC provides a broad overview of ecosystems and their boundaries, VSP provides a more quantitative approach. VSP can be used for both inventory and monitoring, and is beneficial for detecting long-term trends of an ecosystem. It uses fixed-area methods that are practical, easy to implement and replicate, and scientifically rigorous. VSP is also

scalable, and plots generated during this project can be added to the larger dataset for southern Ontario. This includes field data stored within a central database for statistical analysis and detailed mapping. The implementation of VSP will enable larger-scale questions about regional connectivity to be answered.

Table 34: Proposed effectiveness monitoring

Survey Type	Method	Sampling Location	Timing/Frequency/Duration
Breeding Amphibian Monitoring	Marsh Monitoring Program (Bird Studies Canada, 2009)	Two locations to cover created wetland per 100 m radius from the protocol	Years 2, 3, 5, 7
Vegetation Community Monitoring	Ecological Land Classification & Vegetation Sampling Protocol. Drone flights to map vegetation growth.	Entire created wetland	Year 1 post-construction: one - season inventory. Subsequent inventories will occur at least once during the growing season on an annual basis from years 2-7. Invasive species removal and replacement plantings will be completed as required.
Bird Use	Breeding Bird Surveys following OBBA protocol	Focused on the created wetland, it will also help to monitor the land use risk of the proposed wetland within the aerodrome.	Spring months, years 2, 4, 6, and 7
Tree Inventory	Detailed tree inventory if trees are planted within the created wetland and its VPZ	The wetland and its VPZ.	The planting plan and documentation will serve as the baseline. Years 1, 2, 4, 6, and 7
Hydrologic Monitoring	Install level loggers to measure water level and temperature	Two locations within the created wetland, one in a deep pool and one in a shallower location	Continuous recording (every 30 minutes) during the ice-free season. All years
Bat Monitoring	Install acoustic monitors within the wetland.	In the marsh and swamp communities of the wetland.	Record a minimum of 10 nights in June/July. All years



11.2.5. Step 5: Evaluation of Results

Compare Monitoring Results

Effectiveness monitoring results will be compared against the baseline data. The overall objective of this comparison is that the functions of the created wetland will be equivalent to or enhanced relative to the existing wetland. For example, amphibian monitoring results will be compared with the baseline amphibian data, with the expectation of similar or greater amphibian use of the created wetland. Results will also be compared with the management questions outlined in Step 1 and the assumptions listed there. No ecological modelling exercises have been undertaken, so results will not be compared to model predictions.

As the ecological results are not comprised of complex large datasets, no formal statistical analyses are proposed. The hydrologic data will be plotted as a year-over-year water retention trend, showing changes in water level over time.

11.2.6. Step 6: Adjustment/Revision of Hypothesis & Management

Annual reports to the City and HCA will be the primary method of data dissemination. To ensure these reports go beyond simply providing monitoring data, they should include additional sections on lessons learned from previous years, how those lessons changed actions in the given year, and how the following year's actions will differ as a result. These lessons should feed back into the management questions presented in Step 1 to ensure that results are reflected on and actions are modified in the originally intended manner. The reports will also recommend corrective actions if deficiencies are identified.

12. Policy Conformity

Conformance with policies applicable to the EIS is described in Table 35 below.

Table 35: Applicable Policies of the PPS and UHOP

Policy Document	Policy Number	Policy	
Provincial Policy Statement (2024)	2.9.1 d)	Planning authorities shall plan to reduce greenhouse gas emissions and prepare for the impacts of a changing climate through approaches that: promote green infrastructure, low impact development, and active transportation, protect the environment and improve air quality.	The EIS discusses Climate Change initiatives that the development will follow, including building and operations measures to reduce energy and water use. In addition, LID measures play an important role in the development plan for managing stormwater and recharging the shallow groundwater system. The development plan conforms to this policy.
	(4.1 - Natural Heritage)	Natural features and areas shall be protected for the long term.	The EIS's assessments, conclusions, and recommendations aim to protect the natural heritage features for the long term by considering existing conditions, conducting a comprehensive evaluation of the proposed development's direct and indirect impacts, both short- and long-term, and providing sound, effective mitigation measures. The EIS demonstrated no negative impacts on the natural heritage system.
	4.1.1		
	4.1.2	The diversity and connectivity of natural features in an area and the long-term <i>ecological function</i> and biodiversity of <i>natural heritage systems</i> should be maintained, restored or where possible, improved, recognizing linkages between and among <i>natural heritage features and areas, surface water features and groundwater features</i> .	The proposed development includes specific measures to maintain or improve the natural area features within the study area and their ecological functions. As such, the study recognizes linkages and leverages opportunities to enhance biodiversity and connectivity within the natural heritage system. This is evident through the proposed improvement of the wetland feature, the restoration of its wetland habitat, the opportunity for improved wetland connection to the groundwater table, the proposed connectivity between the wetland, SWM block, stream corridor, and southeastern woodland, the inclusion of three Open Space blocks that will be planted to a woodland density, the inclusion of policy appropriate VPZ to the natural heritage features, and the inclusion of a linkage feature between FODM2-1 and FODM1-1 woodland communities. The proposed plan conforms to this policy.
	4.1.3	<i>Natural heritage systems</i> shall be identified in Ecoregions 6E & 7E, recognizing that <i>natural heritage systems</i> will vary in size and form in <i>settlement areas, rural areas, and prime agricultural areas</i> .	Natural systems are identified through the EIS within the context of the local land use.
	4.1.4	<i>Development</i> and site alteration shall not be permitted in: a) <i>significant wetlands</i> in Ecoregions 5E, 6E and 7E; and, b) <i>significant coastal wetlands</i> .	No significant wetlands or significant coastal wetlands, as defined in the PPS, are identified within the Subject Property, and no development or site alteration is proposed within these features.
	4.1.5	Development and site alteration shall not be permitted in: a) <i>significant wetlands</i> in the Canadian Shield north of Ecoregions 5E, 6E and 7E; b) <i>significant woodlands</i> in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Mary's River); c) <i>significant valleylands</i> in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Mary's River); d) <i>significant wildlife habitat</i> ; e) <i>significant areas of natural and scientific interest</i> ; and f) <i>coastal wetlands</i> in Ecoregions 5E, 6E and 7E that are not subject to policy 4.1.4(b) unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.	No significant wetlands, valleylands, wildlife habitat, ANSI, or coastal wetlands, as defined in the PPS, are identified. One significant woodland was identified within the Subject Property, but no development or site alteration is proposed within this feature.
	4.1.6	<i>Development</i> and site alteration shall not be permitted in <i>fish habitat</i> except in accordance with <i>provincial and federal requirements</i> .	No development is proposed in fish habitat.
	4.1.7	<i>Development</i> and site alteration shall not be permitted in <i>habitat of endangered species and threatened species</i> , except in accordance with <i>provincial and federal requirements</i> .	No development is proposed in confirmed SAR habitat. Candidate SAR bat habitat has been identified in the WODM4-4 woodland that is proposed to be removed. Habitat offsetting, such as bat boxes planted through the natural areas within the development plan, is proposed. The plans will be discussed with the MECP.
	4.1.8	<i>Development</i> and site alteration shall not be permitted on <i>adjacent lands</i> to the <i>natural heritage features and areas</i> identified in policies 4.1.4, 4.1.5 and 4.1.6 unless the <i>ecological function</i> of the <i>adjacent lands</i> has been evaluated and it has been demonstrated that there will be no <i>negative impacts</i> on the natural features or on their <i>ecological functions</i> .	Of the significant features identified in this policy, development and site alteration are proposed on lands adjacent to a significant woodland as specified by this policy. The ecological functions of the adjacent lands have been evaluated, and measures to protect these functions are included in the development plan. Measures, including increasing woodland area through planting and providing a 15 m VPZ, have been proposed. The EIS demonstrated that there will be no negative impacts on the natural feature or its ecological functions.
(4.2 - Water)	Planning authorities shall protect, improve or restore the quality and quantity of water by:	The EIS will demonstrate this as follows:	
4.2.1	a) using the watershed as the ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering cumulative impacts of development; b) minimizing potential negative impacts, including cross-jurisdictional and crosswatershed impacts; c) identifying water resource systems; d) maintaining linkages and functions of water resource systems; e) implementing necessary restrictions on development and site alteration to: 1. protect all municipal drinking water supplies and designated vulnerable areas; and	a) Cumulative impacts are assessed through the evaluation of historic anthropogenic influences within the Ancaster Creek subwatershed, shaping the existing ecological landscape. The impacts of the proposed development are similarly assessed within the context of the surrounding landscape and the ecosystem health in the larger subwatershed. b) The proposed development is located entirely within the Ancaster Creek subwatershed, with no impacts predicted to extend beyond it. The EIS demonstrated that there will be no negative impacts through the retention of important natural heritage features and the implementation of strategic mitigation measures targeted to address and minimize potential adverse impacts to water quality and	



Policy Document	Policy Number	Policy	
		<p>2. protect, improve or restore vulnerable surface and ground water, and their hydrologic functions;</p> <p>f) planning for efficient and sustainable use of water resources, through practices for water conservation and sustaining water quality; and</p> <p>g) ensuring consideration of environmental lake capacity, where applicable.</p>	<p>quantity. The development, as supported by the EIS, proposes measures to maintain or restore existing water resource features within the Subject Property and the Ancaster Creek Subwatershed.</p> <p>c) All water resources components within the Study Area have been identified and evaluated.</p> <p>d) Water resources linkages and functions are maintained through the intentional design of the wetland realignment and the use of LID measures to recharge the shallow groundwater system. The hydrologic function of the water resource system is projected to improve with increased wetland storage capacity, matching existing outlet flow rates, reduced invasive species cover, and improved floristic quality, resulting in greater water retention and ecological richness than the existing feature. Supporting hydrogeological studies suggest that the proposed design will increase water infiltration into the groundwater system, helping to maintain the wetland's ecological functions.</p> <p>e) Municipal drinking water supplies and vulnerable areas, including vulnerable surface and groundwater, are not within the Study Area and will not be affected. Surface and groundwater modelling demonstrates that both will be maintained on-site and will continue to contribute downstream, consistent with existing conditions.</p> <p>f) The proposed development incorporates design elements like low-impact development, which improve water quality and decrease the quantity of surface runoff.</p> <p>g) Not applicable.</p>
	4.2.2	<p><i>Development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored, which may require mitigative measures and/or alternative development approaches.</i></p>	<p>Sensitive surface water and groundwater features, as defined in the PPS, are features particularly susceptible to impacts from activities or events, including, but not limited to, water withdrawals and additions of pollutants.</p> <p>There is a shallow groundwater system on the property that will be maintained, and modelling suggests it could be enhanced by increasing infiltration. It is not predicted that the shallow groundwater system will be impacted by the proposed development.</p>
	4.2.3	<p>Municipalities are encouraged to undertake, and <i>large and fast-growing municipalities</i> shall undertake, <i>watershed planning</i> to inform planning for sewage and water services and stormwater management, including low impact development, and the protection, improvement or restoration of the quality and quantity of water.</p>	<p>The EIS is consistent with the City's primary goal to reduce non-point sources of pollution within its watershed, as outlined in the City of Hamilton Watershed Action Plan. The plan identifies some of these nonpoint sources of pollution as urban street runoff, commercial parking lot runoff, and construction site runoff. The proposed development contributes to the City of Hamilton's goal through the implementation of low-impact development to reduce runoff by infiltration, improve water quality through the use of bioswales along Street A, and recommend mitigation measures during and post-construction to address potential water pollution through sedimentation and salinization.</p>
	4.2.4	<p>Despite policy 4.2.3, where planning is conducted by an upper-tier municipality that includes one or more lower-tier large and fast-growing municipalities, the upper-tier municipality shall undertake watershed planning in partnership with lower-tier municipalities, including lower-tier large and fast-growing municipalities.</p>	<p>Not applicable.</p>
	4.2.5	<p>All municipalities undertaking watershed planning are encouraged to collaborate with applicable conservation authorities.</p>	<p>Not applicable</p>
	(5.2 - Natural Hazards)	<p>Planning authorities shall, in collaboration with conservation authorities where they exist, identify <i>hazardous lands</i> and <i>hazardous sites</i> and manage development in these areas, in accordance with provincial guidance.</p>	<p>The development has demonstrated that there will be no increase in downstream flooding or erosion in Ancaster Creek.</p>
	5.2.1		
	5.2.2	<p>Development shall generally be directed to areas outside of: a) <i>hazardous lands</i> adjacent to the shorelines of the <i>Great Lakes - St. Lawrence River System</i> and <i>large inland lakes</i> which are impacted by <i>flooding hazards, erosion hazards</i> and/or <i>dynamic beach hazards</i>; b) <i>hazardous lands</i> adjacent to <i>river, stream</i> and <i>small inland lake systems</i> which are impacted by <i>flooding hazards</i> and/or <i>erosion hazards</i>; and c) <i>hazardous sites</i>.</p>	<p>The development has demonstrated that there will be no increase in downstream flooding or erosion in Ancaster Creek.</p>
	5.2.4	<p>Planning authorities shall prepare for the impacts of a changing climate that may increase the risk associated with natural hazards.</p>	<p>Not applicable</p>
Urban Hamilton Official Plan Volume	(C.2.0 – Natural Heritage System)	<p>The City contains many natural areas and features that contribute to the municipality's beauty, unique character, and quality of life...</p>	<p>Schedule B of the UHOP does not identify Core Areas on the property, only Linkages. The EIS identifies Core Areas through desktop and field studies and demonstrates how they will be maintained and restored, as well as</p>



Policy Document	Policy Number	Policy	
1 Chapter C – City Wide Systems and Designations		<p>The Natural Heritage System, identified on Schedule B – Natural Heritage System, consists of the Niagara Escarpment Plan area, and Core Areas and Linkages identified by the City, based on requirements of the Provincial Policy Statement. Together, provincial and local planning objectives for the Natural Heritage System focus on protecting and restoring these features and natural functions as a permanent environmental resource for the community. The City shall focus on protecting and enhancing the natural heritage system through stewardship, education and awareness, land use planning policies, habitat restoration and management, and acquisition.</p> <p>The Natural Heritage System consists of Core Areas, Linkages, and the matrix of lands between them, which may be suitable for restoration. The systems approach involves delineating a Natural Heritage System, which includes Core Areas, as well as supportive features (Linkages) that maintain the ecological functionality and connectivity of the natural system. Connecting natural areas allows wildlife and plants to move between habitat patches. These connections are important for maintaining biodiversity, and the long-term health and viability of natural systems. Protection and restoration of impaired or degraded habitat and habitats in diminishing supply, such as meadows, is vital for a fully functional Natural Heritage System. Using the systems approach, the City shall look at the restoration potential of natural areas adjacent to Core Areas, not just the habitat that currently exists. The systems approach also involves setting targets for the amount of habitat Hamilton needs for a healthy, functioning ecosystem. Looking beyond what exists to consider what could or should exist moves habitat protection towards a fully sustainable natural heritage system.</p>	<p>how the linkage function of the Subject Property will be maintained and enhanced. According to this policy, linkages are supportive features that maintain ecological functionality and connectivity to the natural system. As such, the EIS proposes the removal of one fragmented linkage area with limited ecological functionality and no projected negative impact associated with its removal in favour of enhancing the other two functional linkages to provide increased overall NHS richness, diversity, and connectivity in the long-term (Section 6.8). The linkages to be retained and enhanced will receive adequate vegetation protection to ensure protection of the features. Further, the EIS proposes the restoration of the identified wetland habitat as detailed in Sections 8.1 and 8.2. The existing wetland has low structural diversity and habitat value, with a portion of it being dominated by invasive and non-native species (Section 6.1). In conformity with this policy, the development proposes to restore the feature through a realigned wetland designed to enhance biodiversity, improve the hydrologic regime, increase habitat function, mitigate flood, and increase connectivity through the strengthening of the linkage along the southern property limit (Section 8.2).</p>
	C.2.2.2	<p>The boundaries of Core Areas and Linkages, shown on Schedule B - Natural Heritage System, are general in nature. Minor refinements to such boundaries may occur through Environmental Impact Statements, watershed studies or other appropriate studies accepted by the City without an amendment to this Plan. Major changes to boundaries, the removal or addition of Core Areas and Linkages identified on Schedule B - Natural Heritage System and Schedules B-1-8 – Detailed Natural Heritage Features require an amendment to this Plan.</p>	<p>One Core Area is shown on Schedule B-8, a Key Hydrologic Feature. A wetland is identified on the property is unmapped and has been considered a Core Area feature by the City.</p>
	C.2.3	<p>It is the intent of this policy to preserve and enhance Core Areas and to ensure that any development or site alteration within or adjacent to them shall not negatively impact their natural features or their ecological functions.</p>	<p>Two Core Area features are identified by the EIS within the Study Area, including a locally significant wetland and a Key Hydrological Feature - Streams. The development proposal includes measures to increase the wetland size, its structural complexity, and its species diversity. The headwater drainage features will be largely maintained along with their functions. Overall, the development plan has been assessed by the EIS as an enhancement to these features form and function.</p>
	C.2.3.3	<p>The natural features and ecological functions of Core Areas shall be protected and where possible and deemed feasible to the satisfaction of the City enhanced. To accomplish this protection and enhancement, vegetation removal and encroachment into Core Areas shall generally not be permitted, and appropriate vegetation protection zones shall be applied to all Core Areas.</p>	<p>A realignment of the wetland is proposed, which necessitates partial disturbance of the existing Core Area feature. The proposed encroachment, however, will result in an enhancement of the ecological function of the wetland/Core Area through a proposed increase in plant diversity, wildlife habitat functions, wetland size, and connectivity to other natural features. Policy recommended vegetation protection zones have been provided for the Core Areas within the Study Area.</p>
	C.2.5.4	<p>New development and site alteration shall not be permitted within significant woodlands, significant valleylands, significant wildlife habitat and significant areas of natural and scientific interest unless it has been demonstrated that there shall be no negative impacts on the natural features or on their ecological functions.</p>	<p>No development or site alteration is proposed within any designated features of significance.</p>
	C.2.5.5	<p>New development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in Section C.2.5.2 to C.2.5.4 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there shall be no negative impacts on the natural features or on their ecological functions.</p>	<p>New development and site alteration is proposed on lands adjacent to the natural heritage features specified by this policy. The ecological function of these lands has been evaluated, and it has been demonstrated that there will be no negative impact on the natural heritage features or their ecological functions.</p>
	C.2.5.7	<p>Streams are mapped in Schedule B - Natural Heritage System. Streams have been separated into two classes: Coldwater Watercourse/Critical Habitat and Warmwater Watercourse/Important/Marginal Habitat. If the stream has not been classified as part of an EIS, subwatershed study, or other study, a scoped EIS is required to determine the classification.</p>	<p>The stream within the Subject Property has been classified by this EIS as a warmwater watercourse providing indirect fish habitat functions.</p>
	C.2.5.8	<p>New development or site alteration subject to Policies C.2.5.3 to C.2.5.7 requires, prior to approval, the submission and approval of an Environmental Impact Statement which demonstrates to the satisfaction of</p>	<p>An EIS has been submitted to the City that:</p>



Policy Document	Policy Number	Policy
		<p>the City and the relevant Conservation Authority that: a) There shall be no negative impacts on the Core Area's natural features or their ecological functions. b) Connectivity between Core Areas shall be maintained, or where possible, enhanced for the movement of surface and ground water, plants and wildlife across the landscape. c) The removal of other natural features shall be avoided or minimized by the planning and design of the proposed use or site alteration wherever possible.</p>
	C.2.5.9	<p>An Environmental Impact Statement shall propose a vegetation protection zone which:</p> <ul style="list-style-type: none"> a) has sufficient width to protect the Core Area and its ecological functions from impacts of the proposed land use or site alteration occurring during and after construction, and where possible and deemed feasible to the satisfaction of the City, restores or enhances the Core Area and/or its ecological functions; and b) is established to achieve, and be maintained as natural self-sustaining vegetation.
	C.2.5.10	<p>Where vegetation protection zone widths have not been specified by watershed and sub-watershed plans, secondary plans, Environmental assessments and other studies, the following vegetation protection zone widths shall be evaluated and addressed by Environmental Impact Statements. Other agencies, such as Conservation Authorities, may have different vegetation protection zone requirements. (OPA 218)</p> <ul style="list-style-type: none"> j) Coldwater Watercourse and Critical Habitat – 30-metre vegetation protection zone on each side of the watercourse, measured from the bankfull channel. k) Warmwater Watercourse and Important and Marginal Habitat – 15 metre vegetation protection zone on each side of the watercourse, measured from the bankfull channel. l) Provincially Significant Wetlands – 30-metre vegetation protection zone, measured from the boundary of the wetland, as approved by the Conservation Authority or Ministry of Natural Resources. m) Unevaluated wetlands – Unevaluated wetlands and locally significant wetlands require a 15 metre vegetation protection zone, measured from the boundary of the wetland, as approved by the Conservation Authority or Ministry of Natural Resources, unless an Environmental Impact Statement recommends a more appropriate vegetation protection zone. n) Woodlands – 10-metre vegetation protection zone, measured from the edge (drip line) of the woodland. o) Significant woodlands – 15-metre vegetation protection zone, measured from the edge (drip line) of the significant woodland. p) Areas of Natural and Scientific Interest (ANSIs) – Life and Earth Science ANSIs require a 15-metre vegetation protection zone. <ul style="list-style-type: none"> q) Significant Valleylands – As required by the relevant Conservation Authority. r) Significant Habitat of Threatened or Endangered Species and Significant Wildlife Habitat: the minimum vegetation protection zone shall be determined through Environmental Impact Statements, dependent on the sensitivity of the feature.
	C.2.5.12	<p>Permitted uses within a vegetation protection zone shall be dependent on the sensitivity of the feature, and determined through approved studies. Generally, permitted uses within a vegetation protection zone shall be limited to low impact uses, such as vegetation restoration, resource management, and open space. Permitted uses within the vegetation protection zone shall be the same uses as those within the Core Area in Policy C.2.5.1, and the vegetation protection zone should remain in or be returned to a natural state.</p>



Policy Document	Policy Number	Policy													
	C.2.5.13	All plantings within vegetation protection zones shall use only non-invasive plant species native to Hamilton. The City may require that applicants for development or site alteration develop a restoration or management plan for the vegetation protection zone as a condition of approval.	Only native plants reflective of the local area are proposed for the VPZs.												
	C.2.11.1	The City recognizes the importance of trees and woodlands to the health and quality of life in our community. The City shall encourage sustainable forestry practices and the protection and restoration of trees and forests.	Tree removals are proposed. As discussed in the EIS, the number of removed trees will be replanted on the Subject Property as per the requirements of the City of Hamilton. Current landscape and restoration plans show that the number of trees planted will be greater than the number removed.												
	(C.4.8 – Airport)														
	C.4.8.1	It is the objective of this Plan to support John C. Munro International Airport as a 24 hour, seven day a week operation. The Airport and the adjacent Airport Business Park is one of the City’s major economic nodes and a valued transportation facility which links the movement of goods and people.	The proposed development conforms to the Airport Employment Growth District Secondary Plan.												
	C.4.8.4	The City shall maintain Noise Exposure Forecast (NEF) contours and the Primary Airport Zoning Regulation, as amended from time to time, and formulate guidelines for development in the vicinity of John C. Munro International Airport.	NEF contours have been reviewed, and development guidelines have been reviewed for the site. The Subject Property is not within the Primary Airport Zoning Regulation Area.												
	C.4.8.5	The City shall minimize future conflicts between operation of the Airport and surrounding land uses to ensure: a) there shall be no negative impact on the long-term operations of the Airport; b) the opportunities for expansion of airport operations shall not be limited; and, c) there are no land uses in the vicinity which may cause a potential aviation hazard. d) development that is noise or land use sensitive to airport operations or will limit the opportunities for expansion of airport operations shall be restricted.	The proposed wetland realignment plan will be reviewed by the Airport, and any modifications they may request, such as reducing the size of the open water areas, will be implemented.												
	C.4.8.6	NEF contours and the Airport Influence Area are identified on Appendix D (Urban) – Noise Exposure Forecast Contours and Primary Airport Zoning Regulations, and designated on Schedule F – Airport Influence Area of the Rural Hamilton Official Plan. (OPA 128)	The NEF Contours within the Subject Property range from 25-30. The site is not within the Primary Airport Zoning Regulation Area but is within the Airport Influence Area.												
	C.4.8.7	All development and redevelopment shall comply with all provincial and municipal standards, criteria and guidelines regarding noise and vibration from air traffic sources, including Section B.3.6.3 – Noise, Vibration and Other Emissions.	The proposed development complies with all provincial and municipal standards, criteria, and guidelines. No development as defined under policy section B.3.5.3 is proposed.												
	C.4.8.8	Proposals for development, infill development and redevelopment of residential or other sensitive land uses shall comply with the following requirements in Table C.4.8.1 – Requirement for Development in the Vicinity of John C. Munro International Airport, based on all applicable locational criteria. Proposals may meet more than one locational criterion and thereby be subject to more than one set of requirements.													
		<table border="1"> <thead> <tr> <th></th> <th>Locational Criteria</th> <th>Requirements</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>35 NEF and greater, and/or within the Airport Influence Area</td> <td>a) All new development of residential and other sensitive land uses, including infill development and redevelopment, shall be prohibited. b) New land uses which may cause a potential aviation hazard shall be prohibited.</td> </tr> <tr> <td>2</td> <td>28 NEF and greater, but less than 35 NEF</td> <td>a) All new development of residential and other sensitive land uses, including infill development and redevelopment, shall be prohibited. b) New land uses which may cause a potential aviation hazard shall be prohibited. c) All development applications approved prior to approval of this Plan may proceed.</td> </tr> <tr> <td>3</td> <td>25 NEF and greater, but less than 28 NEF</td> <td>a) All development and redevelopment proposals for residential and other sensitive land uses shall be required to submit a detailed noise study, employ noise mitigation measures and include appropriate warning clauses in accordance with Section B.3.6.3 - Noise, Vibration and Other Emissions, and Policy C.4.8.6. b) New land uses which may cause a potential aviation hazard shall be prohibited.</td> </tr> </tbody> </table>		Locational Criteria	Requirements	1	35 NEF and greater, and/or within the Airport Influence Area	a) All new development of residential and other sensitive land uses, including infill development and redevelopment, shall be prohibited. b) New land uses which may cause a potential aviation hazard shall be prohibited.	2	28 NEF and greater, but less than 35 NEF	a) All new development of residential and other sensitive land uses, including infill development and redevelopment, shall be prohibited. b) New land uses which may cause a potential aviation hazard shall be prohibited. c) All development applications approved prior to approval of this Plan may proceed.	3	25 NEF and greater, but less than 28 NEF	a) All development and redevelopment proposals for residential and other sensitive land uses shall be required to submit a detailed noise study, employ noise mitigation measures and include appropriate warning clauses in accordance with Section B.3.6.3 - Noise, Vibration and Other Emissions, and Policy C.4.8.6. b) New land uses which may cause a potential aviation hazard shall be prohibited.	Not applicable. The proposed development is not a residential or sensitive land use as defined in Chapter G of the UHOP.
	Locational Criteria	Requirements													
1	35 NEF and greater, and/or within the Airport Influence Area	a) All new development of residential and other sensitive land uses, including infill development and redevelopment, shall be prohibited. b) New land uses which may cause a potential aviation hazard shall be prohibited.													
2	28 NEF and greater, but less than 35 NEF	a) All new development of residential and other sensitive land uses, including infill development and redevelopment, shall be prohibited. b) New land uses which may cause a potential aviation hazard shall be prohibited. c) All development applications approved prior to approval of this Plan may proceed.													
3	25 NEF and greater, but less than 28 NEF	a) All development and redevelopment proposals for residential and other sensitive land uses shall be required to submit a detailed noise study, employ noise mitigation measures and include appropriate warning clauses in accordance with Section B.3.6.3 - Noise, Vibration and Other Emissions, and Policy C.4.8.6. b) New land uses which may cause a potential aviation hazard shall be prohibited.													



Policy Document	Policy Number	Policy	
Urban Hamilton Official Plan Volume 1 Chapter F – Implementation	C.4.8.10	Any permitted development, redevelopment or infill development at or above 25 NEF or within the Airport Influence Area shall be required to submit a detailed noise study, implement noise mitigative measures in accordance with provincial and federal guidelines/standards or municipal approaches that achieve the same objective, and include appropriate warning clauses in lease or rental agreements, agreements of purchase and sale, and within development agreements.	Not a natural heritage issue.
	(F.3.2.1 – Environmental Impact Statements (EIS))	Council has adopted Environmental Impact Statement Guidelines, which shall be used by proponents and professionals when preparing an EIS. The City shall revise the Environmental Impact Statement Guidelines from time to time.	The EIS has been prepared in accordance with the EIS guidelines.
	F.3.2.1.1		
UHOP Volume 2 Chapter B – Airport Employment Growth District Secondary Plan (OPA 35)	F.3.2.1.2	When a development proposal has the potential to negatively impact a Core Area’s natural features or their ecological functions, the proponent shall be required to prepare an EIS to the satisfaction of the City in consultation with the relevant Conservation Authority. An EIS inventories and describes the existing Core Areas and ecological functions of the site in the context of the surrounding landscape. An EIS also assesses the potential negative impacts that proposed development may have on Core Areas and Linkages and provides recommendations on natural area boundaries, mitigation measures, and design measures to accommodate or enhance existing natural features and functions.	An EIS has been prepared that draws on numerous years of field investigations to characterize the natural heritage features on the property, including Core Areas and Linkages. The EIS evaluated the results of all completed assessments, determined the retention and protection required for all NH features, provided recommendations to mitigate impacts and maintain their functions, and incorporated measures to enhance the natural features on the property.
	B.8.2.2	<p>The employment district is vibrant and visually appealing. It is a working community with a unique sense of place derived from a strong connection to its natural setting and the existing airport. The intent is to:</p> <ul style="list-style-type: none"> f) Balance a high intensity of use with large conserved natural areas; g) Design with nature by protecting streams, mature trees, wetlands, significant habitat and integrating topography into developments; h) Integrate the open space system with the Greenbelt and other natural areas; i) Support mixed employment use and ancillary convenience amenities supporting employment, such as convenience stores, medical offices, fitness centres, personal services, restaurants and hotels; and, j) Encourage a distinct character for the district (e.g. airport or natural heritage theme). 	<p>The EIS will demonstrate how the proposed development conforms with this policy. Namely, the most important natural features are maintained. The realignment of the wetland will increase the feature’s size and connectivity with the adjacent natural areas, achieving the goals of the AEGD policies.</p> <ul style="list-style-type: none"> a) The proposed development is not a high-intensity use. The proposed VPZs and enhancements will protect and enhance the features. b) Consideration for the integration of the wetland within the development was important, with realignment being the best option to better integrate the wetland into the development fabric. The headwater drainage feature on the property is to be mostly maintained and protected with a VPZ, and significant woodlands and those providing significant wildlife habitat or habitat for endangered species are protected. c) The greenbelt is not within the vicinity of the Study Area. d) The proposed development is for commercial land use, which supports a mixed employment use for the general AEGD Secondary Plan area. e) The proposed development supports a strong natural heritage theme with the strategic maintenance, enhancement, and design of the existing natural heritage features.
	B.8.3.2	All development shall conform to the airport policies of Section C.4.8 of Volume 1.	The development conforms to the airport policies of Section C.4.8 as detailed above in policies C.4.8.1, C.4.8.4 to C.4.8.8, and C.4.8.10. The outstanding policies of Section C.4.8 are not directly applicable.
	B.8.2.11 (Natural Heritage Principles)	<p>Through sustainable design and appropriate development the employment district protects and enhances the natural environment. The intent is to:</p> <ul style="list-style-type: none"> f) Develop in a manner that is sensitive to the natural environment; g) Use innovative, sustainable storm and wastewater infrastructure to protect water quality and source water; h) Protect and integrate provincially and municipally significant natural features, such as streams, valley lands, wetlands, mature trees and forests into the employment district’s development, implement provincial policy and meet municipal policy; i) Use sustainable design to limit the emissions, water and energy consumption of buildings within the employment district; and, j) Connect the employment district’s open space system to surrounding natural areas to allow employees to enjoy and explore the region’s natural heritage. 	<p>The EIS demonstrated:</p> <ul style="list-style-type: none"> a) The development maintains the important natural features of the site, including the enhancement of the wetland community, Significant Woodland, and linkage along the southern property limit. The proposed strategic integration of other natural features into the development fabric underscores the importance of environmental considerations. b) The SWM solution includes infiltration galleries, which enhance groundwater recharge, rooftop storage that is used to sustain the wetland, and roadside bioswales to promote water quality and surface water infiltration. The proposed low-impact development (LID) measures help improve water quality and quantity by increasing infiltration and reducing runoff that can mobilize sediments and pollutants. c) There are no provincially significant features on the subject property. Municipally significant and other natural features of the property have been integrated into the development. The significant woodland is being maintained, enlarged and provided with an adequate VPZ. d) The buildings will be designed to minimize energy and water usage.



Policy Document	Policy Number	Policy	
			e) The realigned wetland will connect the open space on the northeast corner of the property to the woodland in the southeast corner and to the Highway 6 naturalized corridor. The development area will be surrounded by natural heritage features, providing employees with a unique setting to enjoy the surrounding natural environment.
	B.8.9	An integral component during the creation of this Secondary Plan was the preparation of the Subwatershed Plan for the watersheds within the Secondary Plan Area. Lands within the Airport Employment Growth District are uniquely situated within the headwaters of four watersheds, Sulphur Creek (Cootes Paradise), Twenty Mile Creek (Lake Ontario), Welland River (Niagara River) and Big Creek (Grand River). The myriad of small headwater features, combined with restrictions on open water/wetland features imposed by the airport, present a unique challenge in terms of protection of stream corridors and natural heritage features, and stormwater management design that require state of art technologies consistent with Low Impact Development design.	The EIS included a comprehensive review of local natural features and airport-area development constraints to inform and support the proposal. The larger AEGD Secondary Plan and the Ancaster Creek Subwatershed Plan, as well as the goals, objectives, and guidelines provided by these documents, were considered, given the ecological interconnectedness and unique situation of the Subject Property. The headwater tributary of Ancaster Creek is being maintained and protected, and the wetland is being enhanced and provided with a VPZ. Both stream and wetland features will benefit from increased connectivity to the proposed SWM facility and the woodland. The SWM facility will be a dry pond, which reduces the likelihood of attracting waterfowl to the site. The wetland design was also modified to reduce the size of open-water pockets and increase tree cover, thereby reducing the wetland's attractiveness to waterfowl. These are important design considerations given the site's proximity to the airport.
	B.8.9.3	The stream corridors in the Subwatershed Plan for the Secondary Plan Area shall be protected in accordance with Section B.8.12 of this Secondary Plan to address flood/erosion control and fish habitat requirements, as well as storm water management to prevent increases in flooding and erosion, enhance water quality and maintain the existing conditions of water balance.	The intermittent watercourse, the portion that has a defined bed and banks as defined by the Conservation Authority Act, is protected with the appropriate setbacks. Discharge from the site, both from the wetland and the SWM pond have been modelled and assessed for downstream flooding and erosion hazard potential. Based on the modelling results, the development will not increase either the downstream flood or erosion risk.
	B.8.12.1	Within the Airport Employment Growth District, there are wetlands, streams, woodlands, meadows, successional areas and hedgerows which are identified as Core Areas, Linkages, and Hedgerows in Map B.8-2 – Airport Employment Growth District Natural Heritage System. The policies of Volume 1 Section C.2.0 – Natural Heritage System apply, with the exception of Section C.2.4.	This mapping identified no natural heritage features, aside from an unclassified stream. The policies of Volume 1 Section C.2.0 have been applied as detailed above in this table under Urban Hamilton Official Plan Volume 1 Chapter C – City Wide Systems and Designations.
	B.8.12.2	<i>Streams are identified in Map B.8-2 – Airport Employment Growth District Natural Heritage System. If the stream has not been classified as part of an Environmental Impact Study, subwatershed study, or other study, a scoped Environmental Impact Study is required to determine the classification.</i>	The stream within the property has been assessed and determined to be a warmwater watercourse providing indirect and marginal fish habitat. The watercourse is being retained within the development design, and the portions identified as intermittent fish habitat are being maintained in their current condition with the appropriate 15 m warmwater setbacks.



13. Conclusion



The following can be concluded based on the results of the background review, applicable policies and field investigations conducted by Stantec (2018) and GeoProcess and the impact assessment completed for this EIS.

- A wetland was identified on the property. An assessment of the wetland determined that it was a candidate for realignment. This wetland will be relocated as shown on Maps 8 and 9. Restoration and adaptive management measures have been recommended, and a 15 m VPZ is proposed for the newly created feature.
- Numerous butternut trees are located along the east boundary and the northwest corner (off-site) of the Subject Property, and one in the WODM4-4 community. Hybridity testing will be required for these trees, along with a Butternut Health Assessment by a Certified Butternut Health Assessor for confirmed butternuts, to determine if any authorization is required under the Endangered Species Act (2007).
- An American chestnut that was previously identified on the site has died with no indication of shoots or young.
- The FODM2-1 community has been determined to be a Significant Woodland (Section 6.4). A 15 m setback has been proposed to protect this feature from the proposed development.
- The FODM2-1 community provides significant wildlife habitat for Eastern Wood-Pewee. A 15 m setback has been proposed to protect this feature from the proposed development.
- The FODM2-1, FODM1-1, and WODM4-4 communities provide suitable bat maternity colony habitat for endangered bat species. No development is proposed in the FODM1-1 community or the FODM2-1 community to protect these features from the proposed development.
- The WODM4-4 community is proposed for removal. Tree plantings in Open Space Blocks 3, 7 and 8 will compensate for the tree removals. Bat roosting structures will be added to the open space blocks, the SWM block and the wetland block.
- The HDF on the Subject Property does not provide direct fish habitat.
- The use of rooftop storage and directing clean water to the wetland provides the ability to ensure there is sufficient water available to the wetland year-round to maintain its features and functions. Odan Detech has demonstrated that, on a monthly basis, there will be sufficient water to maintain the wetland and its open-water features.
- The implementation of soakaway pits will provide a higher level of infiltration capacity than current conditions. This additional infiltration will help to maintain and enhance the shallow groundwater systems of the Subject Property. The shallow groundwater system will help to maintain the realigned wetland.
- A linkage feature will be established along the southern property limit, which will strengthen the hydro-corridor linkage identified in the UHOP.
- It was determined that the proposed development will not have a negative impact on the natural heritage features which are being retained on the Subject Property. In several cases, the measures outlined in this EIS will enhance natural heritage features. Specifically, the realigned wetland will see an enhancement of its form and function, and the FODM2-1, Significant Woodland, will see an increase in size of approximately 63%.



14. References

- Bakowsky, W.D. 1996 (draft). Natural heritage resources in Ontario: S-ranks for communities in Site Regions 6 and 7. Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough. 11 pp.
- Bird Studies Canada. (2009). Marsh Monitoring Program Participant's Handbook for Surveying Amphibians. Bird Studies Canada in cooperation with Environment Canada and the U.S. Environmental Protection Agency, 13 pp.
- Brouillet L, Desmet P, Coursol F, Meades SJ, Favreau M, Anions M, Bélisle P, Gendreau C, Shorthouse D, and contributors (2010+). Database of Vascular Plants of Canada (VASCAN). Available Online: <http://data.canadensys.net/vascan> and <http://www.gbif.org/dataset/3f8a1297-3259-4700-91fc-acc4170b27ce>, released on 2010-12-10. Version [xx]. GBIF key: 3f8a1297-3259-4700-91fc-acc4170b27ce. Data paper ID: doi: <http://doi.org/10.3897/phytokeys.25.3100> [accessed on April 18, 2016]
- Cadman, M.D., P.F.J. Eagles, and F.M. Helleiner, 1987. Atlas of the Breeding Birds of Ontario. University of Waterloo Press.
- Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier (eds). 2007. Atlas of the Breeding Birds of Ontario 2001- 2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto. 706 pp.
- Chin, D.A. 2013. Water-Resource Engineering Fourth Edition. University of Miami. Pearson Education. Inc. NJ. Pg. 915
- Chapman, L.J. and Putnam, D.F. 1984. The Physiography of Southern Ontario; Ontario Geological Survey, Special Volume 2, 270p. Accompanied by Map P.2715 (coloured), scale 1:600 000.
- City of Guelph. 2023. Wildlife Crossing Guideline Version 1.
- City of Hamilton. 2012. Rural Hamilton Official Plan. City of Hamilton. 2015a. Environmental Impact Statement (EIS) Guidelines. Revised November 2013.
- City of Hamilton. 2015b. Linkage Assessment Guidelines. March 2015. 17 pp.
- City of Hamilton. 2013. Urban Hamilton Official Plan. August 16, 2013 (except for the policies, schedules, maps, and appendices that remain under appeal).
- City of Hamilton. 2015. Linkage Assessment Guidelines. Draft for Discussion. City Planning Division. November 2013.
- COSEWIC 2000. COSEWIC assessment and update status report on the American ginseng, *Panax quinquefolius*, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vii + 17 pp.
- COSEWIC 2000. COSEWIC assessment and update status report on the Hoary Mountain-mint *Pycnanthemum incanum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vi + 6 pp

- COSEWIC 2002. COSEWIC assessment and status report on the eastern ribbonsnake *Thamnophis sauritus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vi + 24 pp.
- COSEWIC 2002. COSEWIC assessment and status report on the northern map turtle *Graptemys geographica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vi + 34 pp.
- COSEWIC 2002. COSEWIC assessment and update status report on the spiny softshell turtle *Apalone spinifera* in Canada. Committee on the Status of Endangered Wildlife in Canada. Vii + 17 pp.
- COSEWIC 2003. COSEWIC assessment and status report on the butternut *Juglans cinerea* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vii + 32 pp. (www.sararegistry.gc.ca/status/status_e.cfm)
- COSEWIC 2004. COSEWIC assessment and status report on the American chestnut *Castanea dentata* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vi + 19 pp.
- COSEWIC 2005. COSEWIC assessment and update status report on the Blanding's Turtle *Emydoidea blandingii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Viii + 40 pp
- COSEWIC 2006. COSEWIC assessment and update status report on the American Columbo *Frasera caroliniensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vi + 21 pp. (www.sararegistry.gc.ca/status/status_e.cfm).
- COSEWIC 2006. COSEWIC assessment and status report on the Golden-winged Warbler *Vermivora chrysoptera* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vii + 30 pp.
- COSEWIC 2006. COSEWIC assessment and update status report on the Louisiana Waterthrush *Seiurus 151available* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vi + 26 pp
- COSEWIC. 2007. COSEWIC assessment and status report on the Chimney Swift *Chaetura pelagica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vii + 49pp.
- COSEWIC 2007. COSEWIC assessment and status report on the Common Nighthawk *Chordeiles minor* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vi + 25 pp
- COSEWIC. 2008. COSEWIC assessment and status report on the Canada Warbler *Wilsonia Canadensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vi + 35 pp. (www.sararegistry.gc.ca/status/status_e.cfm).
- COSEWIC. 2008. COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vii + 47 pp.
- COSEWIC. 2009. COSEWIC assessment and status report on the Whip-poor-will *Caprimulgus vociferous* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vi + 28 pp.
- COSEWIC. 2010. COSEWIC assessment and status report on the Bobolink *Dolichonyx oryzivorus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vi + 42pp.

- COSEWIC. 2010. COSEWIC assessment and status report on the Jefferson Salamander *Ambystoma jeffersonianum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Xi + 38 pp.
- COSEWIC. 2010. COSEWIC assessment and status report on the Monarch *Danaus 152* available in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vii + 43 pp
- COSEWIC, 2011. COSEWIC assessment and status report on the barn swallow *Hirunda rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Ix + 37 pp.
(www.sararegistry.gc.ca/status/status_e.cfm)
- COSSARO. 2009. COSSARO classifications from March 24-25 and May 27-29, 2009, reported to the Minister on June 11, 2009. Dillon Consulting Limited and Aquafor Beech Limited, 2011. City of Hamilton, Airport Employment Growth District – Phase 2, Subwatershed Study and Stormwater Master Plan, Final Report. June 2011.
- Dahl, T. E. & Watmough, M. D. (2007). Current approaches to wetland status and trends monitoring in prairie Canada and the continental United States of America. *Canada Journal of Remote Sensing*, 33(1), 17–27.
- Dillon Consulting Ltd., Aquafor Beech Ltd. (2011). City of Hamilton, Airport Employment Growth District – Phase 2, Subwatershed Study and Stormwater Master Plan, Final Report.
- Ducks Unlimited Canada. (n.d). Wetlands on My Lands? Some simple, low-cost techniques for creating or restoring wetlands on your property. Retrieved from https://cvc.ca/wp-content/uploads/2011/06/Wetlands_on_my_Lands_Brochure.pdf
- Dobbyn, J. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists.
- Dunn, E. H., and D. J. Agro. 1995. Black Tern (*Chlidonias niger*). In *The Birds of North America*, No. 147 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D.C.
- Eder, D. 2002. *Mammals of Ontario*. Lone Pine Publishing, Edmonton, Alberta. 215 p.
- Environment Canada. 2013. *How Much Habitat is Enough?* Third Edition. Environment Canada, Toronto, Ontario.
- Farrar, J.L. 1995. *Trees in Canada*. Fitzhenry & Whiteside Limited and the Canadian Forest Service. Canada. 198 pp.
- Fischman, R.L., Ruhl, J.B. (2015). Judging adaptive management practices of U.S. agencies. *Conservation Biology* 30(2):268-275. <https://doi.org/10.1111/cobi.12616>
- Freeman, C. C. 2009. *Chimaphila*, in *Flora of North America North of Mexico* (Flora of North America Editorial Committee, eds.). New York and Oxford. Vol. 8; Retrieved from the Flora of North America Online: http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=220002765
- Freyman, W.A., L.A. Masters, and S. Packard. 2016. The Universal Floristic Quality Assessment (FQA) Calculator: an online tool for ecological assessment and monitoring. *Methods in Ecology and Evolution* 7(3): 380–383

- Friesen, Lyle and M. Stabb. 2001. Preserve Endangered Songbirds Factsheet: Acadian Flycatchers and Hooded Warblers. Bird Studies Canada. 2001.
- Gibbs, J. P., F. A. Reid, and S. M. Melvin. 1992. Least Bittern. In *The Birds of North America*, No. 17 (A. Poole, P. Stettenheim, and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, DC: The American Ornithologists' Union.
- Gleason, H.A and A. Cronquist. 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*. 2nd Ed. New York Botanical Garden: Bronx, NY. Pp. 993
- Greig, L., Marmorek, D., & Murray, C. (2008). Guide for preparation of adaptive management plans. Prepared by ESSA Technologies Ltd., Richmond Hill, ON, for Fisheries and Oceans Canada, Western Arctic Area, Central and Arctic Region, Yellowknife, NT.
- Hamel, Paul B. 2000. Cerulean Warbler (*Dendroica cerulea*), *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the *Birds of North America Online*: <http://bna.birds.cornell.edu/bna/species/511>
- Hamilton Conservation Authority. 2006. Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses, Regulation Ontario Regulation 161/06. Consolidated February 8, 2013.
- Hamilton Conservation Authority. 2011. HCA Planning and Regulation Policies and Guidelines. November 2011.
- Hamilton Conservation Authority. 2013. Nature Counts 2 Species Checklists.
- Herkert, J.R. 1991. An ecological study of the breeding birds of grassland habitats within Illinois. Ph.D. dissertation. University of Illinois, Urbana, IL. 112 pp.
- Herkert, J. R., P. D. Vickery, and D. E. Kroodsma. 2002. Henslow's Sparrow (*Ammodramus henslowii*). In *The Birds of North America*, No. 672 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Kentula, M.E. (n.d.). Restoration, Creation, and Recovery of Wetlands Wetland Restoration and Creation. United States Geological Survey Water Supply Paper 2425. Retrieved from <https://water.usgs.gov/nwsum/WSP2425/restoration.html>
- Kuehl, A.K., and W.R. Clark. 2002. Predator activity related to landscape features in northern Iowa. *Journal of Wildlife Management* 66: 1224-1234.
- Lamond, William G. 1994. *The Reptiles and Amphibians of the Hamilton Area, An Historical Summary and the Results of the Hamilton Herpetofaunal Atlas*. Hamilton Naturalists' Club. 174 pp.
- Land Information Ontario (LIO). 2017. Ministry of Natural Resources and Forestry Make a Map: Natural Heritage Areas. Accessed Online: http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturaHeritage&locale=en-US

- Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological land classification for Southwestern Ontario: first approximation and its application. Ontario Ministry of Natural Resources, South Central Region, Science Development and Transfer Branch. Technical Manual ELC-005.
- Linton, Jessica. 2015. Recovery Strategy for the Mottled Duskywing (*Erynnis martialis*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. V + 38 pp.
- MacCulloch, R.D. 2002. The ROM Field Guide to Amphibians and Reptiles of Ontario. McClelland & Stewart Ltd., Toronto, Ontario. 168pp.
- Marton, J. M., Creed, I. F., Lewis, D. B., Lane, C. R., Basu, N. B., Cohen, M. J. & Craft, C. B. (2015). Geographically Isolated Wetlands are Important Biogeochemical Reactors on the Landscape. *BioScience*, 65(4), 408–418.
- Mason, J., C. Moorman, G. Hess, K. Sinclair. 2007. Design suburban greenways to provide habitat for forest-breeding birds. *Landscape and Urban Planning*. Vol. 80, Issue 1-2, 153-164.
- Mauchamp, A., Blanch, S., and Grillas, P. (2001). Effects of submergence on the growth of *Phragmites australis* seedlings. *Aquatic Botany* 69(2-4): 147-164. [https://doi.org/10.1016/S0304-3770\(01\)00135-8](https://doi.org/10.1016/S0304-3770(01)00135-8)
- Miller, S. J., & Wardrop, D. H. 2006. Development and application of a floristic quality assessment index for mid-Atlantic non-tidal wetlands. *Ecological Indicators*, 6(3), 652–665.
- Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. Fish and Wildlife Branch. Queen's Printer for Ontario. October 2000.
- Ministry of Natural Resources (MNR), 2010. Monarch (*Danaus 154*available): Factsheet. Accessed Nov 12, 2012, available online: http://www.mnr.gov.on.ca/stdprodconsume/groups/lr/@mnr/@species/documents/document/stdprod_070901.pdf
- Ministry of Natural Resources. 2010. Natural Heritage Reference Manual for Natural Heritage
- MNRF. (2010). Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement. Second Edition. Toronto: Queen's Printer for Ontario. 248 pp
- MNRF. (2011). Invasive *Phragmites* – Best Management Practices. Ontario Ministry of Natural Resources, Peterborough, Ontario. 15pp
- Murray, C., Marmorek, D.R. (2004). Adaptive Management: A Spoonful of Rigor Helps the Uncertainty Go Down. In Proceedings of the 16th Annual Society for Ecological Restoration Conference, Victoria, BC (pp. 24-26).
- Policies of the Provincial Policy Statement, 2005.
- Ministry of Natural Resources. 2012. Draft Significant Wildlife Habitat: Ecoregion 7E Criteria Schedules. March 2012.
- Ministry of Natural Resources and Forestry (MNRF). 2015. Ontario Vascular Plants. Online at from <https://www.ontario.ca/page/get-natural-heritage-information>. Accessed on May 3, 2016.

- Ministry of Natural Resources and Forestry (MNRF). 2015b. Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E. January, 2015. Ontario Ministry of Natural Resources and Forestry Regional Operations Division, Peterborough, Ontario. 40 pp.
- MNRF. (2017). Survey Protocol for Species at Risk Bats within Treed Habitats. Ontario Ministry of Natural Resources, Guelph District. 13 pp.
- Ministry of the Environment. 2003. Stormwater Management Practices Planning and Design Manual.
- National Audubon Society (N.A.S), 2012. Red-headed Woodpecker *Melanerpes erythrocephalus*. Available Online at: <http://www.audubon.org/field-guide/bird/red-headed-woodpecker>
- Natural Heritage Information Centre (NHIC). 2007. Provincial status of plants, wildlife and vegetation communities database. <http://www.mnr.gov.on.ca/MNR/nhic/nhic.html>. OMNR, Peterborough.
- Natural Heritage Information Centre (NHIC). 2010. Red Mulberry. Available online: <https://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB/speciesDetailReport.do?eIID=48004>
- Natural Heritage Information Centre (NHIC). 2015. Land Information Ontario Natural Heritage Mapping: NHIC Database. Available Online: <http://www.giscoeapp.lrc.gov.on.ca/web/mnr/gib/basedata/viewer/viewer.html>
- Newmaster, S.G., A. Lehela, P.W.C Uhlig, S. McMurray and M.J. Oldham. 1998. Ontario plant list. Ontario Ministry of Natural Resources, Ontario Forest Research Institute, Sault Ste. Marie, ON, Forest Research Information Paper No. 123. 550 pp. + appendices.
- Nixon, K.C. 1997. Castanea. In Flora of North America North of Mexico (Flora of North America Editorial Committee, eds.). New York and Oxford. Vol. 3; Retrieved from the Flora of North America Online: http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=233500325
- Oldham, M.J., W.D. Bakowsky and D.A. Sutherland. 1995. Floristic quality assessment for southern Ontario. OMNR, Natural Heritage Information Centre, Peterborough. 68 pp.
- Oldham, M.J. and W.F. Weller. 2001. Ontario Herpetofaunal Atlas internet database. Natural Heritage Information Centre, Ministry of Natural Resources. <http://www.mnr.gov.on.ca/MNR/nhic/herps/ohs.html>
- Oldham and Brinker. 2009. Rare Vascular Plants of Ontario. 4th Ed. Heritage Information Centre, Ontario Ministry of Natural Resources. Peterborough, Ontario. 188 pp.
- Oldham, M.J., W.D. Bakowsky, and D.A. Sutherland. 1995. Floristic quality assessment system for southern Ontario. Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough, Ontario.
- Oldham, M.J. 2017. List of the Vascular Plants of Ontario's Carolinian Zone (Ecoregion 7E). Carolinian Canada and Ontario Ministry of Natural Resources and Forestry. Peterborough, ON. 132 pp.
- Olszynski, M. Z. (2017). Failed Experiments: An Empirical Assessment of Adaptive Management in Alberta's Energy Resources Sector. UBCL Rev., 50, 697.

- Olszynski, M.Z. (2020). Adaptive Management in Benga Resources' Grazy Mountain EIS. From the Canadian Parks and Wilderness Society (CPAWS) Southern Alberta Chapter to the Joint Review Panel re: Hearing presentation of Martin Olszynski. Available from <https://www.ceaa-acee.gc.ca/050/evaluations/document/136737>
- OMNRF. (2011). Invasive Phragmites – Best Management Practices, Ontario Ministry of Natural Resources, Peterborough, Ontario. 15p.
- Ontario Ministry of Natural Resources. 2014. Ontario Wetland Evaluation System, Southern Manual. 107 pp.
- Ontario Nature. 2015. Ontario Reptile and Amphibian Atlas. Accessed Online: https://www.ontarionature.org/protect/species/herpetofaunal_atlas.php
- Peck, G. K. and R. D. James. 1983. Breeding Birds of Ontario: Nidology and Distribution. Volume 1: Nonpasserines. Royal Ontario Museum, Toronto, Ontario.
- Poole, Alan F., L. R. Bevier, C. A. Marantz and Brooke Meanley. 2005. King Rail (*Rallus elegans*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/003doi:10.2173/bna.3>
- R.J. Burnside and Associates Ltd. (2024). Hydrogeological Assessment and Water Balance, 140 Garner Road East, Hamilton, Ontario.
- Randall, L., N. Lloyd, and A. Moehrensclager. (2018). Guidelines for Mitigation Translocations of Amphibians: Applications for Canada's Prairie Provinces. Version 1.0. Centre for Conservation Research, Calgary Zoological Society. Calgary, Alberta, Canada. 94 pp.
- Reid, F. 2006. The Peterson Field Guide Series: A field guide to mammals of North America, 4th ed. Houghton Mifflin Company, New York, New York. 579 pp.
- Reznicek, A. A., Voss, E.G., and B. S. Walters. February 2011. Michigan Flora Online.
- Robertson, M., Galatowitsch, S.M. & Matthews, J.W. Longitudinal evaluation of vegetation richness and cover at wetland compensation sites: implications for regulatory monitoring under the Clean Water Act. *Wetlands Ecol Manage* 26, 1089–1105 (2018). <https://doi.org/10.1007/s11273-018-9633-8>
- Rowe, J.S. 1972. Forest Regions of Canada. Canadian Forest Service Publication No. 1300. 172 pp.
- Brown, S., & Bedford, B.L. (1997). Restoration of Wetland Vegetation with Transplanted Soil: An Experimental Study. *Wetlands* 17(3): 427-437.
- Sandilands, A. 2005. Birds of Ontario. Habitat Requirements, Limiting Factors and Status. UBC Press.
- Saskatchewan Prairie Conservation Action Plan. 2020. Guide to Managing for Optimal Habitat Attributes: Monarch Butterfly (*Danaus plexippus*).
- Spackman, S.C., and J.W. Hughes. 1995. Assessment of minimum stream corridor width for biological conservation: Species richness and distribution along mid-order streams in Vermont. *USA Biol. Conserv.* 71, 325-332.

- Spyreas, G. 2019. Floristic Quality Assessment: a critique, a defense, and a primer. *Ecosphere: An ESA Open Access Journal*.
- Stantec Consulting Ltd. (2018). Environmental Impact Statement Silvestri Lands – 140 Garner Road East, Ancaster, Ontario.
- Stantec Consulting Ltd. (2018b). Hydrogeological Assessment Silvestri Lands – 140 Garner Road East, Ancaster, Ontario.
- Stantec Consulting Ltd. 2018. 140 Garner Road East – Hamilton – Functional Servicing and Stormwater Management Report.
- Thompson, S.A. 2000. Araceae. In *Flora of North America North of Mexico* (Flora of North America Editorial Committee, eds.). New York and Oxford. Vol. 22; Retrieved from the Flora of North America Online: http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250061786
- TRCA. (2012). Preserving and Restoring Healthy Soil: Best Practices for Urban Construction v.10
- WCSAP [Wetland Conservation Strategy Panel] (2018). Considerations for the Development of a Wetland Offsetting Policy for Ontario: A Report of the Wetland Conservation Strategy Advisory Panel.
- Whitehead, D. R., and T. Taylor. 2002. Acadian Flycatcher (*Empidonax virescens*). In *The Birds of North America*, No. 614 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Winter, M., D.H. Johnson, J.A. Shaffer, and W.D. Svedarsky. 2004. Nesting biology of three grassland passerines in the northern tallgrass prairie. *Wilson Bulletin* 116:211-223.

The information contained in this document is confidential and intended for the internal use of One Properties only and may not be used, published or redistributed in any form without prior written consent of GeoProcess Research Associates.

Copyright February 13, 2026, by GeoProcess Research Associates

All rights reserved.



Consolidated Environmental Impact Study

Prepared for One Properties

February 13, 2026

Prepared by:



Ken Glasbergen, M.Sc., ERPG
Senior Ecologist, Principal

Disclaimer

We certify that the services performed by GeoProcess Research Associates were conducted in a manner consistent with the level of care, skill and diligence to be reasonably exercised by members of the engineering and science professions.

Information obtained during the site investigations or received from third parties does not exhaustively cover all possible environmental conditions or circumstances that may exist in the study area. If a service is not expressly indicated, it should not be assumed that it was provided. Any discussion of the environmental conditions is based upon information provided and available at the time the conclusions were formulated.

This report was prepared exclusively for One Properties by GeoProcess Research Associates. The report may not be relied upon by any other person or entity without our written consent and that of One Properties. Any uses of this report or its contents by a third party, or any reliance on decisions made based on it, are the sole responsibility of that party. GeoProcess Research Associates accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

Project Number P2020-435





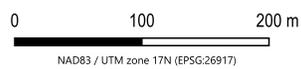
Maps





Legend

- Subject Property
- Study Area
- Watercourse



Notes:
 [1] Watercourse layer: Ontario Hydro Network
 [2] Road layer: Ontario Road Network
 [3] Base imagery: Google
 [4] Inset map layers: Open Street Map (<https://www.openstreetmap.org/copyright>)

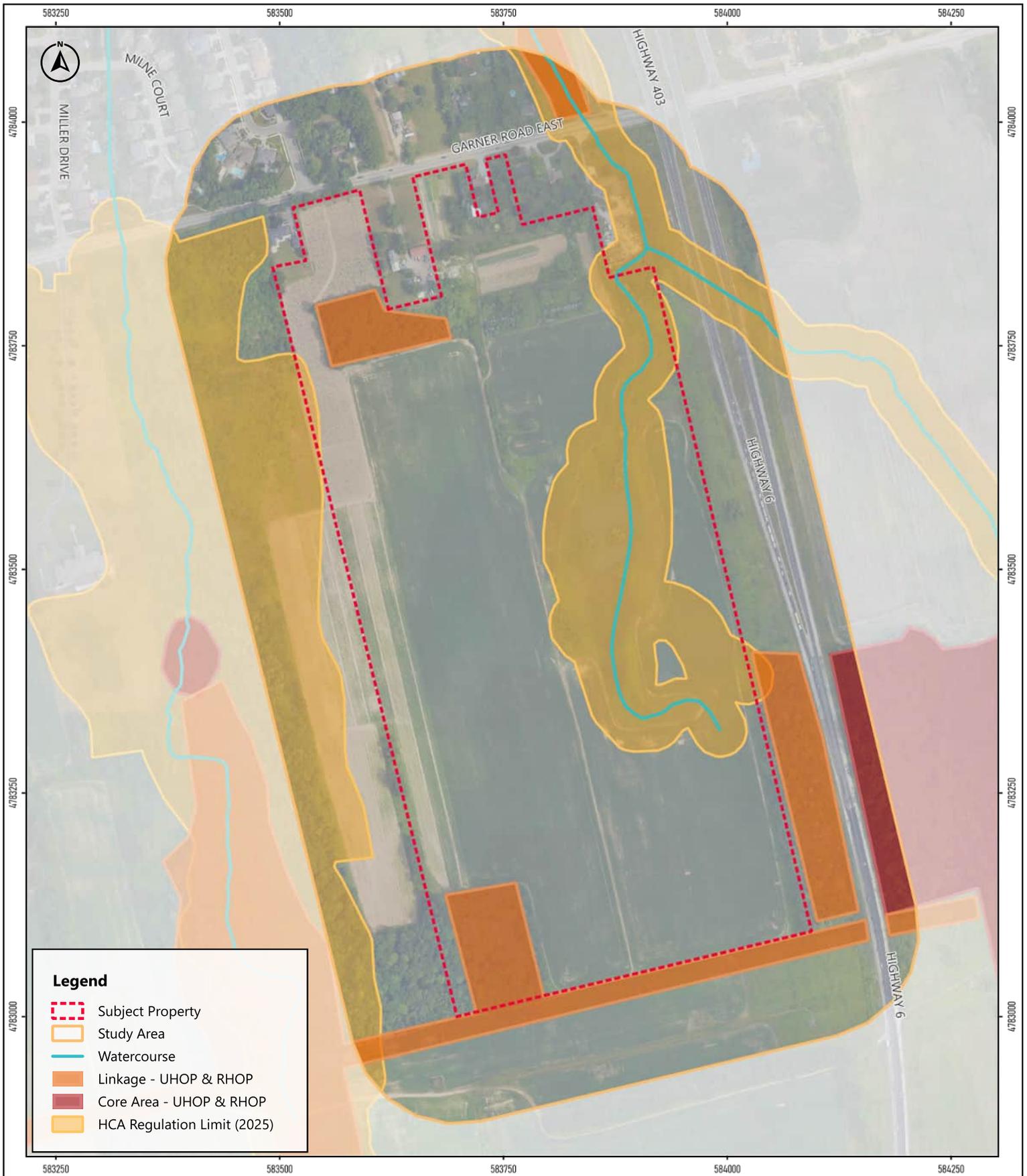
Map 1.

Key Map

140 Garner Road

Beedie Construction Ltd.

CREATED BY: PA PROJECT NO.: P2024-849
 CHECKED BY: KG DATE: Feb 05, 2026



Notes:
 [1] Watercourse layer: Ontario Hydro Network
 [2] Road layer: Ontario Road Network
 [3] Base imagery: Google

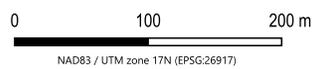
CREATED BY: PA
 CHECKED BY: KG

PROJECT NO.: P2024-849
 DATE: Feb 05, 2026



Legend

- Subject Property
- Study Area
- Watercourse
- Wetland
- Woodland - ELC
- Significant Woodland - ELC³
- Significant Woodland - UHOP



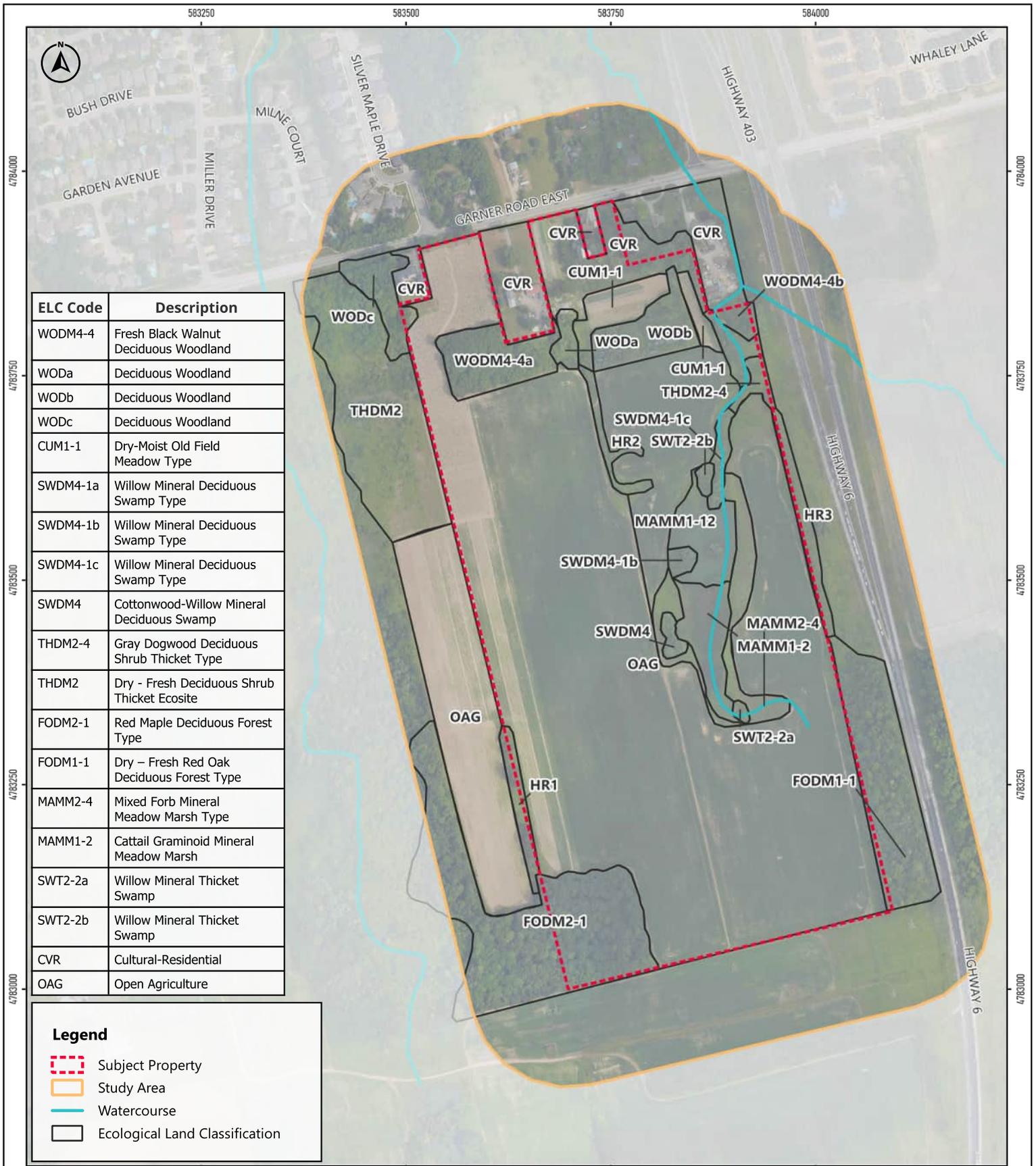
Map 3. Existing Natural Heritage System

140 Garner Road

Beedie Construction Ltd.

- Notes:
- [1] Watercourse layer: Ontario Hydro Network
 - [2] Wetland layer: Land Information Ontario
 - [3] Significant Woodland - ELC: Staked with Stanec 2018
 - [4] Road layer: Ontario Road Network
 - [5] Base imagery: Google

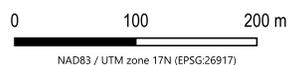
CREATED BY: PA PROJECT NO.: P2024-849
 CHECKED BY: KG DATE: Feb 13, 2026



ELC Code	Description
WODM4-4	Fresh Black Walnut Deciduous Woodland
WODa	Deciduous Woodland
WODb	Deciduous Woodland
WODc	Deciduous Woodland
CUM1-1	Dry-Moist Old Field Meadow Type
SWDM4-1a	Willow Mineral Deciduous Swamp Type
SWDM4-1b	Willow Mineral Deciduous Swamp Type
SWDM4-1c	Willow Mineral Deciduous Swamp Type
SWDM4	Cottonwood-Willow Mineral Deciduous Swamp
THDM2-4	Gray Dogwood Deciduous Shrub Thicket Type
THDM2	Dry - Fresh Deciduous Shrub Thicket Ecosite
FODM2-1	Red Maple Deciduous Forest Type
FODM1-1	Dry - Fresh Red Oak Deciduous Forest Type
MAMM2-4	Mixed Forb Mineral Meadow Marsh Type
MAMM1-2	Cattail Graminoid Mineral Meadow Marsh
SWT2-2a	Willow Mineral Thicket Swamp
SWT2-2b	Willow Mineral Thicket Swamp
CVR	Cultural-Residential
OAG	Open Agriculture

Legend

- Subject Property
- Study Area
- Watercourse
- Ecological Land Classification



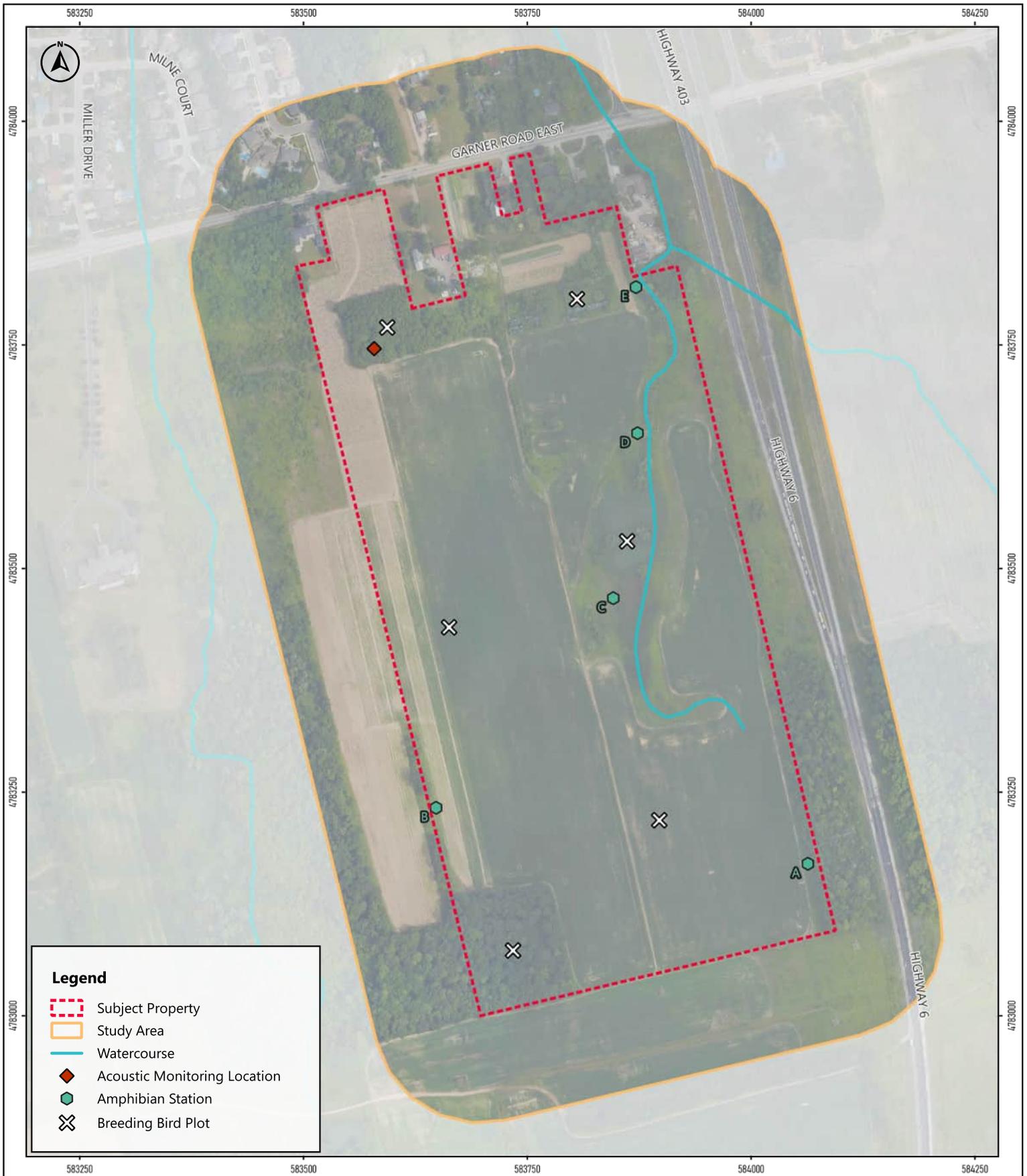
Map 4. Ecological Land Classification

140 Garner Road

Beedie Construction Ltd.

CREATED BY: PA PROJECT NO.: P2024-849
 CHECKED BY: KG DATE: Feb 06, 2026

Notes:
 [1] Watercourse layer: Ontario Hydro Network
 [2] Road layer: Ontario Road Network
 [3] Base imagery: Google



Map 5.

Natural Heritage Survey Locations

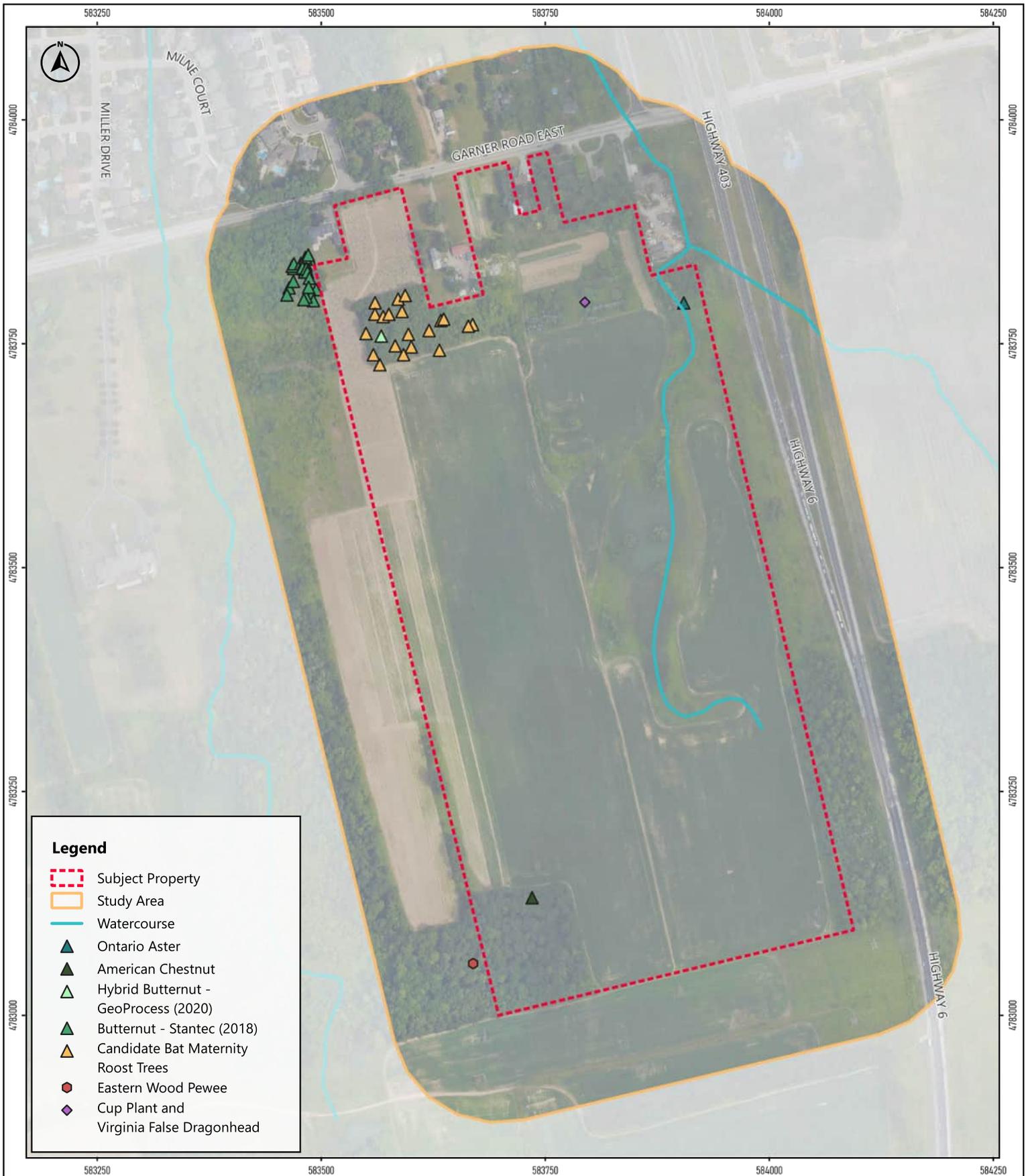
140 Garner Road

Beedie Construction Ltd.

CREATED BY: PA
CHECKED BY: KG

PROJECT NO.: P2024-849
DATE: Feb 05, 2026

Notes:
[1] Watercourse layer: Ontario Hydro Network
[2] Road layer: Ontario Road Network
[3] Base imagery: Google



Legend

- Subject Property
- Study Area
- Watercourse
- ▲ Ontario Aster
- ▲ American Chestnut
- ▲ Hybrid Butternut - GeoProcess (2020)
- ▲ Butternut - Stantec (2018)
- ▲ Candidate Bat Maternity Roost Trees
- Eastern Wood Pewee
- ◆ Cup Plant and Virginia False Dragonhead



Map 6.

Species at Risk and Significant Wildlife Habitat

140 Garner Road

Beedie Construction Ltd.

CREATED BY: PA
CHECKED BY: KG

PROJECT NO.: P2024-849
DATE: Feb 10, 2026

Notes:
[1] Watercourse layer: Ontario Hydro Network
[2] Road layer: Ontario Road Network
[3] Base imagery: Google



Map 7.

Headwater Drainage Features

140 Garner Road

Beedie Construction Ltd.

Notes:
 [1] Watercourse layer: Ontario Hydro Network
 [2] Road layer: Ontario Road Network
 [3] Base imagery: Google

CREATED BY: PA
 CHECKED BY: KG

PROJECT NO.: P2024-849
 DATE: Feb 13, 2026



Legend

- Subject Property
- Study Area
- Watercourse
- Site Plan
- Wetland Design



Notes:
 [1] Watercourse layer: Ontario Hydro Network
 [2] Road layer: Ontario Road Network
 [3] Base imagery: Google

Map 8. Site Plan
140 Garner Road
Beedie Construction Ltd.

CREATED BY: PA PROJECT NO.: P2024-849
 CHECKED BY: KG DATE: Feb 12, 2026



NHS Elements	
1	Woodland Planting Block
2	Woodland Planting Block
3	15 m VPZ
4	Significant Woodland
5	Woodland Planting Block
6	10 m Linkage
7	Woodland
8	10 m VPZ
9	Wetland
10	15 m VPZ
11	Wetland and Open Space
12	Wetland and Open Space

Legend	
	Subject Property
	Study Area
	Watercourse
	Site Plan
	Wetland Design
	Wildlife Crossing
	Natural Heritage System
	Easement
	SWM Block



Map 9. Proposed Natural Heritage System

140 Garner Road

Beedie Construction Ltd.

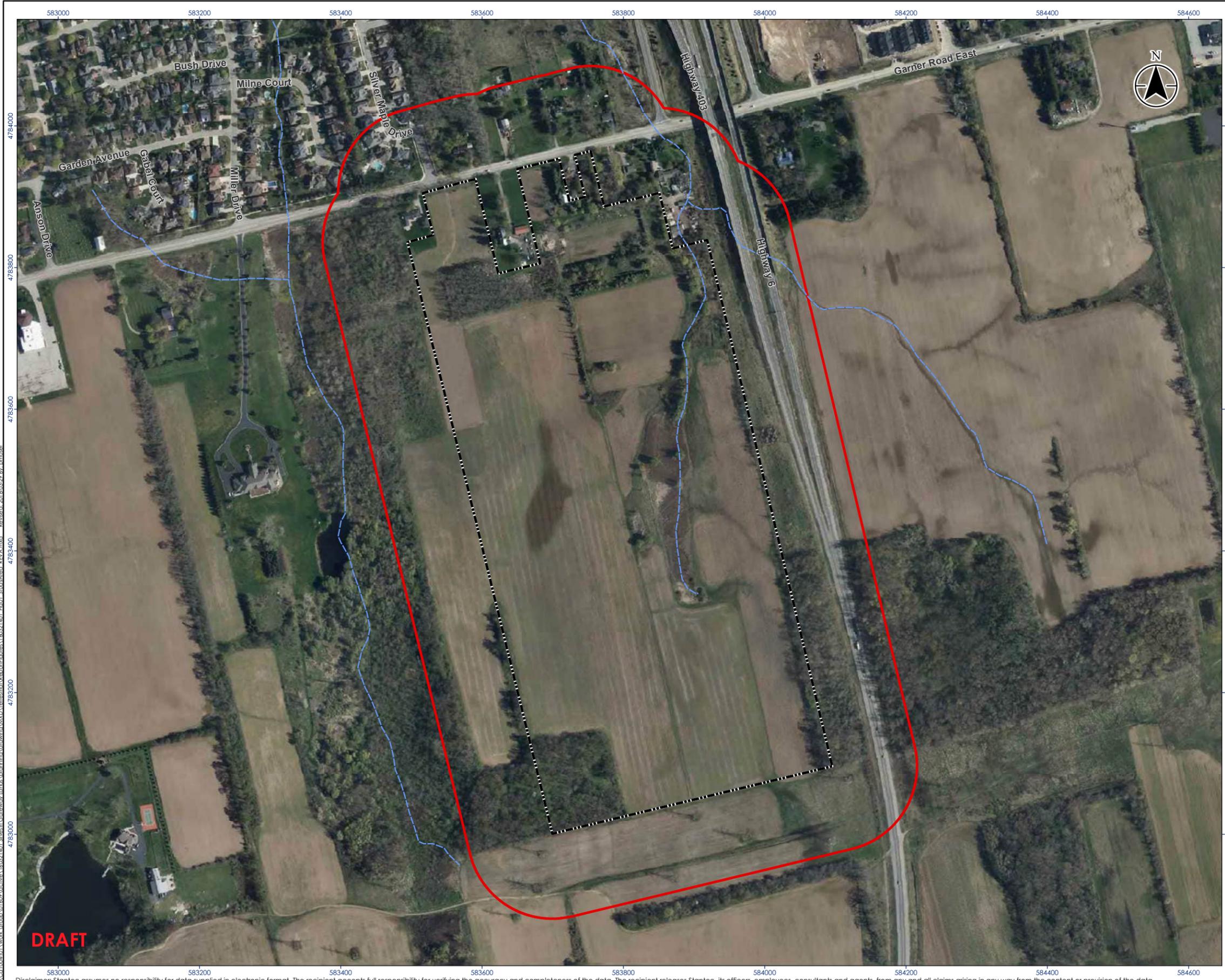
CREATED BY: PA PROJECT NO.: P2024-849
 CHECKED BY: KG DATE: Feb 12, 2026

Notes:
 [1] Watercourse layer: Ontario Hydro Network
 [2] Road layer: Ontario Road Network
 [3] Base imagery: Google



Appendix A

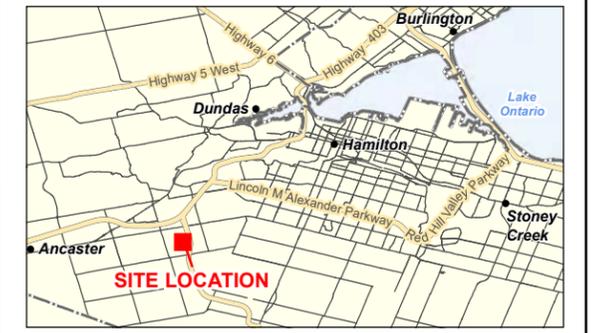
Figures, Stantec (2018)



- Study Area
- Subject Property
- Watercourse - Intermittent



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2015.
 3. Orthoimagery © First Base Solutions, 2017.



Project Location: 140 Garner Road, Ancaster, Ontario
 Prepared by MM on 2018-03-29
 Technical Review by PRM on 2018-03-29

Client/Project: GARNER ROAD INVESTMENTS, SILVESTRI LANDS, 140 GARNER ROAD, ANCASTER, ON

Figure No. **1**
 Title **Study Area**

DRAFT

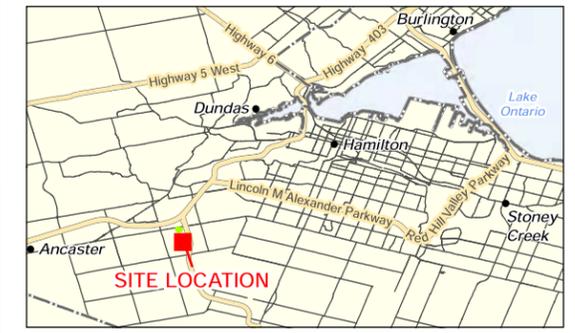
C:\004\01\work\arcgis\01\029\active\160321401_SilverMaple\GIS\Map\TerraStation\Project\Figures\1_60321401_Fig01_StudyArea_REV_A.mxd - Revised: 2018-03-29 by: cmoser



- Subject Property
- Study Area
- Watercourse - Intermittent
- Hamilton Conservation Regulation Limit
- Urban Hamilton Official Plan Linkages (2013)
- Wetland - Not evaluated per Ontario Wetland Evaluation System (LIO, 2017)



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2017.
 3. Orthoimagery © First Base Solutions, 2017.
 4. Urban Hamilton Official Plan Linkages adapted from Urban Hamilton Official Plan Schedule B, effective date August 16, 2013.
 5. Hamilton Conservation Regulation Limit from www.camaps.ca - Hamilton Conservation Authority. Accessed October 2017.



Project Location: 140 Garner Road, Ancaster, Ontario
 Prepared by PRM on 2018-03-29
 Technical Review by SG on 2018-03-29
 Project ID: 160321401 REVA

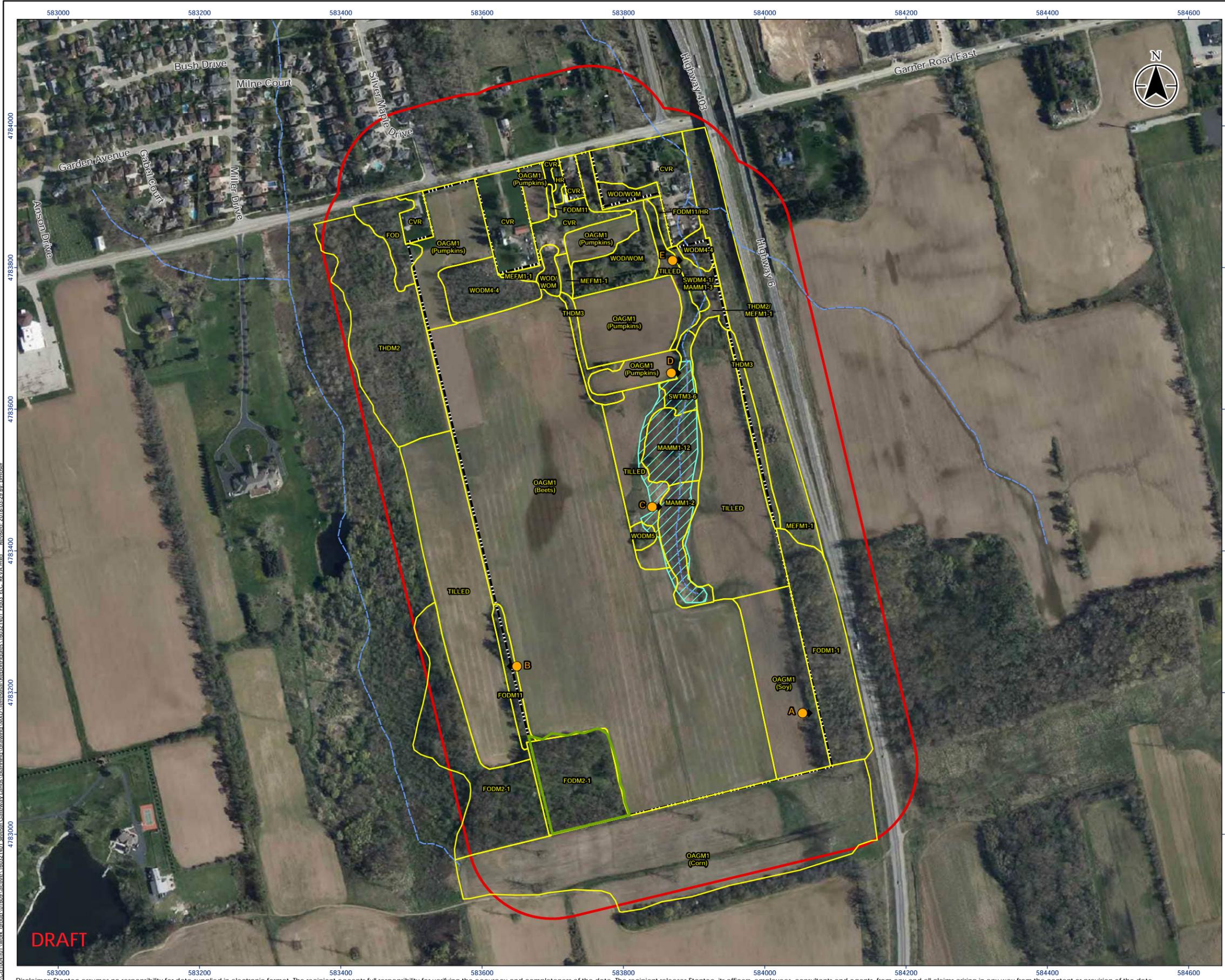
Client/Project: GARNER ROAD INVESTMENTS
 SILVESTRI LANDS
 140 GARNER ROAD, ANCASTER, ON

Figure No. 2

Title: Designated Natural Heritage Features

DRAFT

DRAFT



- Subject Property
- Study Area
- Amphibian Survey Location
- Watercourse - Intermittent
- Delineated Wetland Boundary (Stantec and Hamilton Conservation, 2016)
- Delineated Woodland Boundary (Stantec and City of Hamilton, 2016)
- ELC Community

CVR	Residential
FOD	Deciduous Forest
FODM1-1	Dry- Fresh Red Oak Deciduous Forest Type
FODM1	Naturalized Deciduous Hedge- row Ecosite
FODM2-1	Dry- Fresh Oak- Red Maple Deciduous Forest
HR	Hedgerow
MAMM1-12	Common Reed Graminoid Mineral Meadow Marsh Type
MAMM1-2	Cattail Graminoid Mineral Meadow Marsh Type
MAMM1-3	Reed- canary Grass Graminoid Mineral Meadow Marsh Type
MEFM1-1	Goldenrod Forb Meadow Type
OAGM1	Annual Row Crops
SWDM4-1	Willow Mineral Deciduous Swamp Type
SWTM3-6	Mixed Willow Mineral Deciduous Thicket Swamp Type
THDM2	Dry- Fresh Deciduous Shrub Thicket Ecosite
THDM3	Dry- Fresh Deciduous Hedgerow Thicket Ecosite
WOD	Deciduous Woodland
WOM	Mixed Woodland
WODM4-4	Dry- Fresh Black Walnut Deciduous Woodland Type
WODM5	Fresh- Moist Deciduous Woodland Ecosite



- Notes
1. Coordinate System: GCS North American 1983
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2015.
 3. Orthoimagery © First Base Solutions, 2017.



Project Location 160321401 REVA
 140 Garner Road Prepared by PRM on 2018-03-29
 Ancaster, Ontario Technical Review by SG on 2018-03-29

Client/Project
GARNER ROAD INVESTMENTS
SILVESTRI LANDS
 140 GARNER ROAD, ANCASTER, ON

Figure No. **3** **DRAFT**
 Title
Ecological Land Classification

C:\01004\01\work\ancaster\160321401_Silvestri_Lands\Drawings\160321401_ELC_RevA.mxd, 4783400, 4783200, 4783000, 583000, 583200, 583400, 583600, 583800, 584000, 584200, 584400, 584600

DRAFT

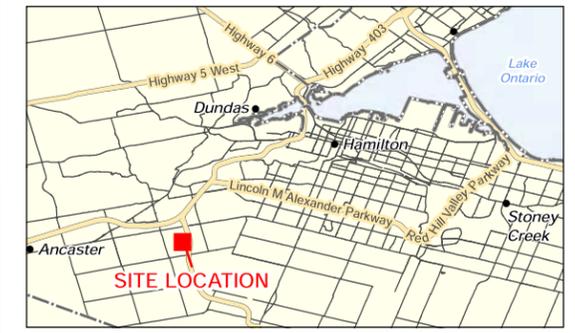
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



- Subject Property
- Study Area
- American Chestnut Location
- American Chestnut Buffer (30m)
- Approximate Butternut Location
- Butternut Buffer (25m)
- Watercourse - Intermittent
- Wetland Boundary (Delineated by Stantec and Hamilton Conservation)
- Wetland Buffer (15 m)
- Woodland Boundary (Delineated by Stantec and city of Hamilton, 2016)
- Woodland Buffer (10 m)



- Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2015.
 3. Orthoimagery © First Base Solutions, 2017.
 4. Wetland and woodland delineation was conducted on September 20, 2016.

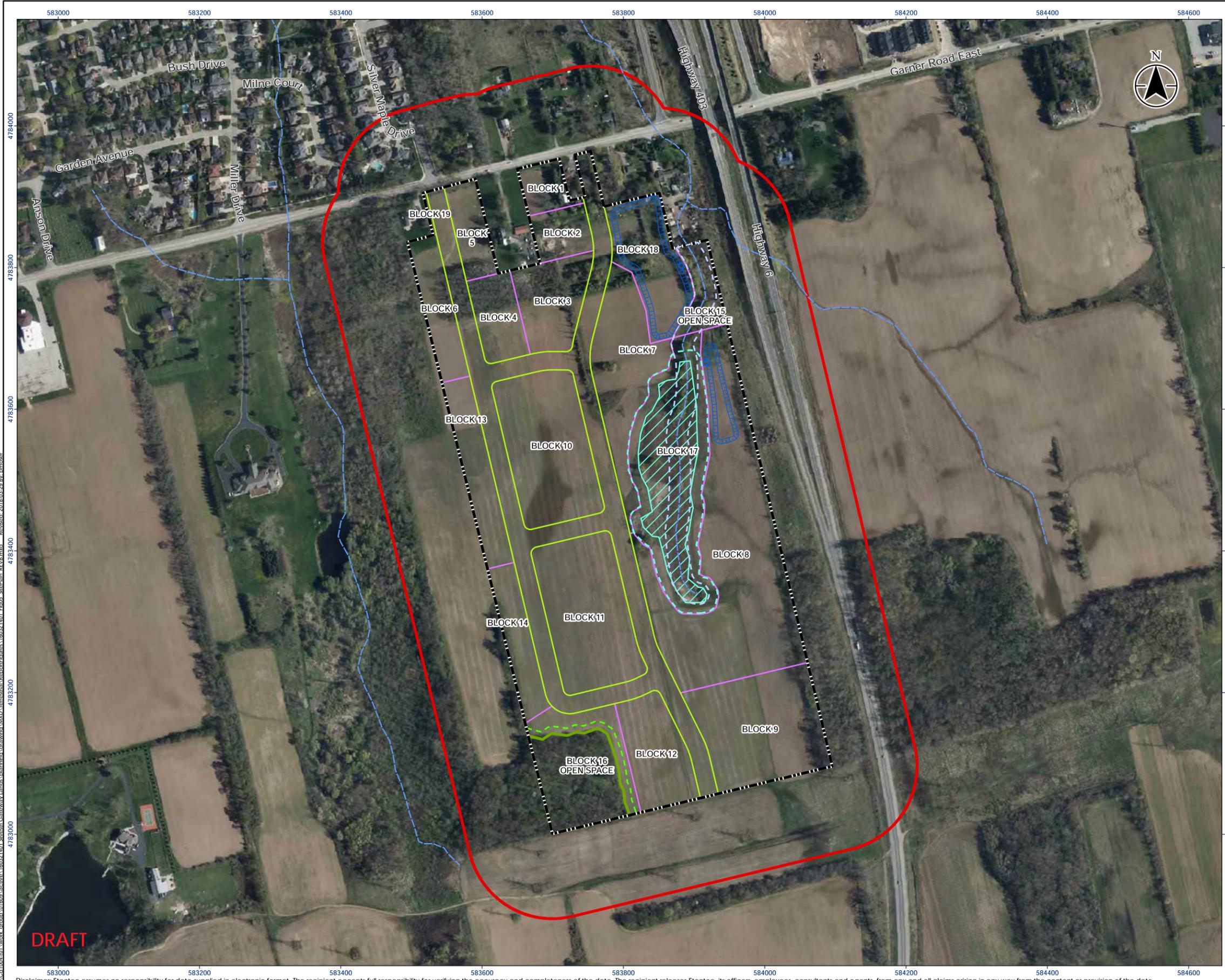


Project Location: 140 Garner Road, Ancaster, Ontario
 160321401 REVA
 Prepared by PRM on 2018-03-29
 Technical Review by SG on 2018-03-29

Client/Project
GARNER ROAD INVESTMENTS
SILVESTRI LANDS
140 GARNER ROAD, ANCASTER, ON

Figure No. **4**
 Title **Significant Natural Features**
DRAFT

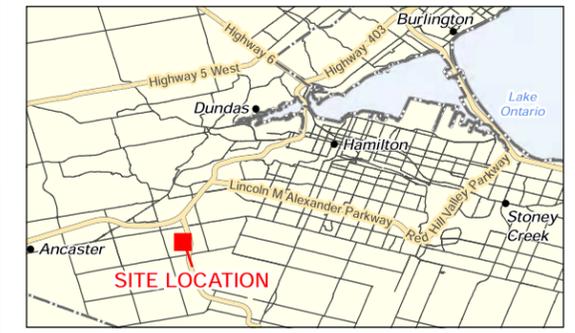
C:\01004\01\work\arcmap\0160321401_Silvestri_GarnerRoad_Lands\planimetric\Drawings\160321401_Env04_SignificantNaturalFeatures_REV0.mxd - Revised: 2018-03-29 10:45:00 AM
 4783000 4783200 4783400 4783600 4783800 4784000



- Study Area
- Subject Property
- Road Allowance
- Block Plan
- Stormwater Management
- Watercourse - Intermittent
- Watercourse - Intermittent Buffer (15 m)
- Wetland Boundary
(Delineated by Stantec and Hamilton Conservation, 2016)
- Wetland Buffer (15 m)
- Woodland Boundary
(Delineated by Stantec and city of Hamilton, 2016)
- Woodland Buffer (10 m)



- Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2015.
 3. Orthoimagery © First Base Solutions, 2017.



Project Location 160321401 REV B
 140 Garner Road
 Ancaster, Ontario
 Prepared by PRM on 2018-03-29
 Technical Review by SG on 2018-03-29

Client/Project
GARNER ROAD INVESTMENTS
SILVESTRI LANDS
140 GARNER ROAD, ANCASTER, ON

Figure No.
5
 Title
Site Plan

DRAFT

DRAFT

C:\01004\01\work\ancaster\160321401_Silvestri_Lands\Drawings\160321401_Env\SitePlan_REV.mxd - Revised: 2018-03-29 By: cmcose



Appendix B

Agency Correspondence (Stantec, 2018)



Stantec Consulting Ltd.
100-300 Hagey Boulevard
Waterloo ON N2L 0A4
Tel: (519) 579-4410
Fax: (519) 579-6733

February 22, 2016
File: 160321401

Attention: Ms. Melissa Kiddie

Natural Heritage Planner
City of Hamilton
Planning and Economic Development Department
City Hall
71 Main Street West, 5th Floor
Hamilton, ON L8P 4Y5

Dear Ms. Kiddie,

Reference: Revised Terms of Reference for a Scoped Environmental Impact Statement (EIS) for a proposed Plan of Subdivision at 140 Garner Road East in Hamilton, Ontario

We recognize that a key component for the successful completion of a Scoped Environmental Impact Study (EIS) is the establishment of a Terms of Reference (ToR) through consultation with the various review and approval agencies. In this case, the development and approval of the ToR is required from the City of Hamilton and the Hamilton Conservation Authority (HCA) for the completion of a Scoped EIS to assess potential constraints and opportunities that support a proposed Plan of Subdivision at 140 Garner Road East in Hamilton, Ontario (**Figure 1**). This revised ToR includes emailed comments received from the City of Hamilton and HCA on February 2, 2016.

The proposed Plan of Subdivision is currently being refined based on the initial field findings/surveys. It is anticipated that this will follow the land uses identified in the AEGD/zoning and will include a road network and stormwater management pond to service the development.

The Subject Lands are approximately 35.3 ha in size and are bounded by Garner Road East to the north, a hydro corridor and agricultural lands to the south, agricultural lands and a woodland feature to the west, and Highway 6 to the east. The Subject Lands are comprised mainly of agricultural lands, with a linear wetland feature on the eastern half of the property and a mature deciduous forest in the southwest corner. Cultural woodlands occur adjacent to the off-site residential properties at the north end of the property.

According to Schedule B of the Urban Hamilton Official Plan, the Subject Lands contain two woodlands identified as Linkages, and one watercourse (identified by HCA as a coldwater, headwater tributary of Ancaster Creek). The watercourse is designated as a Key Hydrological Feature (streams) on Schedule B-8. The watercourse and associated wetland and buffers are regulated by the HCA under Regulation 161/06. The Subject Lands are designated as "Airport Employment Growth District" in Schedule E-1 of the Urban Hamilton Official Plan.



Reference: Revised Terms of Reference for a Scoped Environmental Impact Statement (EIS) for a proposed Plan of Subdivision at 140 Garner Road East in Hamilton, Ontario

Stantec Consulting Ltd. (Stantec) has been retained by Silvestri Investments to prepare this ToR for the completion of a Scoped EIS in support of a proposed Plan of Subdivision. This letter outlines the scope of work planned in support of this task.

PURPOSE

The studies described in this ToR are intended to address Policy C.2.5.3 to C.2.5.7 of the Urban Hamilton Official Plan, by defining and describing the functions of natural features on and adjacent to the Subject Lands, identifying and assessing the potential environmental impacts of development on and adjacent to the Subject Lands, and providing recommendations for appropriate mitigation, restoration and enhancement measures.

The ToR shall be completed to the satisfaction of the City, in consultation with the HCA (Section 3.2.1.5 of the Urban Hamilton Official Plan).

BACKGROUND INFORMATION AND PRELIMINARY FIELD INVESTIGATIONS

An initial review of existing policies and background information was undertaken during the preparation of this ToR to identify any designated natural heritage features present on and adjacent to the Subject Lands. A pre-consultation site visit was undertaken with Stantec, an Ecologist and Environmental Planner from the City of Hamilton and HCA staff on September 10th, 2015 to confirm field study requirements. A preliminary Ecological Land Classification (ELC) vegetation community survey and fall botanical inventory was conducted on October 15th, 2015 to identify potential constraints and opportunities that exist on and adjacent to the Subject Lands, in order to assist with the site design.

In compiling the Scoped EIS, we will address the policy documents described below, and undertake a desktop review and summary of existing background information, including but not limited to, aerial photographs, mapping (HCA), the Hamilton Natural Heritage Database, Natural Heritage Information Centre (NHIC) species search, species and other general agency information regarding vegetation, wildlife and any significant natural features in the area. An information request will be submitted to the Ministry of Natural Resources and Forestry (MNRF) in order to collect information on significant natural heritage features and Species at Risk known to occur in the vicinity of the Study Area.

POLICY FRAMEWORK

The Scoped EIS will be based on the following policies;

- Policy 2.1 of the Provincial Policy Statement (Ministry of Municipal Affairs and Housing (MMAH), 2014) with guidance provided through the Natural Heritage Reference Manual (MNR, 2010), Significant Wildlife Habitat Technical Guide (MNR, 2000) and Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF, 2015);
- Urban Hamilton Official Plan (2013);



February 22, 2016

Page 3 of 8

Reference: Revised Terms of Reference for a Scoped Environmental Impact Statement (EIS) for a proposed Plan of Subdivision at 140 Garner Road East in Hamilton, Ontario

- Airport Employment Growth District (AEGD) Secondary Plan (2010);
- City of Hamilton's Environmental Impact Statement Guidelines (2015);
- City of Hamilton's Linkage Assessment Guidelines (2015);
- Town of Ancaster By-Law No. 87-57(2015) and/or the updated Comprehensive Zoning By-law (05-200);
- Ontario Regulation 161/06 (Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation); and
- Ontario's Endangered Species Act (ESA 2007).

SITE INVESTIGATION

Field surveys will be conducted on the Subject Lands, and within 120 m of the Subject Lands (Study Area) where access has been granted. Where access is not available, observations from the property boundary will be recorded. The field information collected during each of these site visits, combined with the existing background data collected from review and approval agencies, will be used to characterize the natural features and ecological functions on, and adjacent to the Subject Lands.

The following site-specific field investigations will be undertaken to supplement the background desk-top review and preliminary ELC surveys, and refine the characteristics, extent and function of any natural heritage features in the Study Area:

- Three (3) botanical inventories of the vegetation communities in the Study Area to identify species composition, sensitivity, significance and the presence of any rare, Threatened or Endangered plant species. Local status will be based on the Hamilton Natural Areas Inventory Project 3rd Edition (2014) Species Checklist. A fall vegetation inventory was completed on October 15, 2015 as part of this field investigation requirement. (spring survey between May and early June and summer survey in July or August 2016);
- Classification of the vegetation communities (ecosites and ecotypes) in the Study Area based on the Ecological Land Classification (ELC) System (Lee et al., 1998, with 2008 updates) to identify all vegetation communities in the Study Area, and to determine whether any rare or specialized vegetation communities are present. Preliminary ELC surveys were conducted on October 15, 2015. ELC boundaries will be refined based on observations during the spring and summer vegetation inventory;



Reference: Revised Terms of Reference for a Scoped Environmental Impact Statement (EIS) for a proposed Plan of Subdivision at 140 Garner Road East in Hamilton, Ontario

- General wildlife habitat assessment to identify and describe habitat features, characteristics and potential usage, including the potential existence of specialized wildlife habitat and Species at Risk habitat (during each field investigation);
- Amphibian call count surveys, following Bird Studies Canada Marsh Monitoring Protocols (2009). Includes three rounds targeting wetland features identified in the Study Area during preliminary ELC surveys. Surveys will occur between April and July 5th with at least 15 days between each survey. April, May and June surveys will be completed at temperatures of >5°C, >10°C and >17°C, respectively.
- Breeding bird surveys; two rounds, including transect surveys and point counts. The first survey will be completed between May 25 and June 16 between, the second survey will be completed between June 17 and July 10. Surveys will occur between sunrise and 10 am.
- Bat Maternity Colony Assessment; assessment of potential bat maternity colony trees within the Linkage parcel in the center of the Study Area (April prior to leaf growth);
- Incidental wildlife observations to document wildlife species presence within the Study Area (during each field investigation); and
- Fish habitat/headwaters assessment for the watercourse that flows through the Subject Lands (during the spring freshet to assess potential headwaters functions).

EVALUATION OF SIGNIFICANCE

Based on the botanical inventories, wildlife surveys and ELC, the evaluation of significance analysis will be undertaken to determine whether there are any significant natural features in the Study Area, including federally, provincially and locally rare species. Federally rare species will be determined using the COSEWIC designations, and provincially rare species will be determined using the COSSARO species designations and provincial S-ranks (S1-S3). Locally rare species will be identified using the HCA Nature Counts 2 Species Checklist (2014).

Potential significant wildlife habitat (SWH) will undergo an evaluation of significance using the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNR, 2015).

The Urban Hamilton Official Plan identifies three Linkage parcels on the Subject Lands. These Linkages will be evaluated based on the significant woodland criteria in the Urban Hamilton Official Plan, and if determined to be significant, appropriate vegetation protection zones will be recommended and the woodland boundary will be delineated.

LINKAGE ASSESSMENT

Linkage parcels will be evaluated to assess their ecological function and to determine potential impacts on the viability and integrity of the Linkages as per the Linkages Assessment Guidelines



Reference: Revised Terms of Reference for a Scoped Environmental Impact Statement (EIS) for a proposed Plan of Subdivision at 140 Garner Road East in Hamilton, Ontario

(2015). Recommendations will be provided on how to protect, enhance or mitigate impacts on the Linkages and their function.

SPECIES AT RISK

Habitat assessments for potential Species at Risk identified during the background review will be undertaken during general wildlife habitat assessments. Should suitable habitat for Species at Risk known to historically occur within the Study Area be present, appropriate studies will be undertaken in consultation with MNRF.

Barn Swallow nesting habitat has been identified in the barn on site, and a Notice of Activity Form has been submitted to the MNRF to obtain approval for removal of the barn.

REPORTING

This Scoped EIS will be prepared to (a) characterize and assess the natural heritage and hazard features in the Study Area, (b) describe the proposed development or development alternatives, (c) identify and assess potential impacts, and (d) recommend appropriate measures to avoid or mitigate such impacts and restore or enhance the natural environment such that the proposed development will not result in adverse environmental impacts.

The Scoped EIS will include:

- (i) A description of the proposed development;
- (ii) A description and assessment of the existing natural environment features and functions in the Study Area that will or might reasonably be expected to be impacted, including confirmation of natural heritage features and boundaries;
- (iii) An identification and assessment of the magnitude and significance of potential short-term and long-term impacts, both direct and indirect, to the natural environment resulting from future development expansion, as set out in the Nature Counts site summaries;
- (iv) A headwaters assessment will be completed during the spring freshet according to the Headwater Drainage Features Guidelines (Toronto Region Conservation Authority and Credit Valley Conservation, 2014) and the Ontario Stream Assessment Protocols (OSAP) for assessing potential headwaters (Section 4: Modules 9 and 10).
- (v) An evaluation of the three Linkages, as shown on Schedule B of the Urban Hamilton Official Plan;
- (vi) The recommendations of appropriate mitigation measures to avoid and minimize potential negative impacts, as well as restoration, enhancement or compensation measures (as appropriate);



Reference: Revised Terms of Reference for a Scoped Environmental Impact Statement (EIS) for a proposed Plan of Subdivision at 140 Garner Road East in Hamilton, Ontario

- (vii) A monitoring plan to measure potential long-term effects on the environment (if necessary); and
- (viii) Identification of possible restoration or enhancement opportunities.

This information will be presented in the context of the current regulatory and policy framework, and is intended to satisfy the policies, requirements and guidelines provided by the Urban Hamilton Official Plan. Consideration will also be given to the HCA policies with respect to the regulation of the watercourse and associated wetland and buffers, as well as potential Species at Risk that may be identified through consultation with the MNRF. This information will be consolidated into a stand-alone document for submission to the review and approval agencies as part of a complete application. The EIS will follow the outline below:

- 1.0 Introduction
 - 1.1 Study Area
 - 1.2 Approach
 - 1.3 Regulatory and Advisory Agency Consultation
- 2.0 Natural Heritage and Hazard Policy Considerations
 - 2.1 Provincial Policy Statement (2014)
 - 2.2 Urban Hamilton Official Plan
 - 2.2.1 AEGD Secondary Plan
 - 2.3 Hamilton Conservation Authority Policies
 - 2.4 Endangered Species Act
 - 2.5 Summary of Policy Implications
- 3.0 Methodology for Data Collection
 - 3.1 Background Data Collection
 - 3.2 Field Investigations
 - 3.2.1 Vegetation Surveys
 - 3.2.2 Amphibian Surveys
 - 3.2.3 Breeding Bird Surveys
 - 3.2.4 Wildlife Habitat Assessment and Incidental Wildlife Observations
 - 3.2.5 Aquatic Surveys
- 4.0 Site Description and Natural Features
 - 4.1 General Overview of Site Conditions
 - 4.2 Designated Features
 - 4.3 Physiography
 - 4.4 Hydrology
 - 4.4.1 Surface Water
 - 4.4.2 Wetlands
 - 4.5 Terrestrial Resources
 - 4.5.1 Landscape Ecology



Reference: Revised Terms of Reference for a Scoped Environmental Impact Statement (EIS) for a proposed Plan of Subdivision at 140 Garner Road East in Hamilton, Ontario

- 4.5.2 Vegetation Communities
- 4.5.3 Vascular Plants
- 4.5.4 Amphibians
- 4.5.5 Breeding Birds
- 4.5.6 Wildlife Habitat and Incidental Observations
- 4.6 Aquatic Resources
 - 4.6.1 Aquatic Habitat

- 5.0 Significant Natural Heritage Features
 - 5.1 Significant Wetlands
 - 5.2 Significant Habitat for Endangered and Threatened Species
 - 5.3 Significant Woodlands
 - 5.4 Significant Wildlife Habitat
 - 5.6 Linkage Assessment
 - 5.7 Headwaters Assessment
 - 5.8 Summary of Significant Natural Heritage Features

- 6.0 Description of Proposed Development
- 7.0 Identification and Assessment of Impacts
- 8.0 Mitigation Measures
- 9.0 Recommendations
- 10.0 References

The information contained in this Scoped EIS report will consider, influence and reference other development documents undertaken by Stantec, and will be reviewed and discussed through an iterative process amongst the study team to ensure a complete and comprehensive submission. The opportunity for HCA involvement following completion of the evaluation of significance is encouraged and may be explored through the submission of a preliminary report for initial feedback as part of this iterative process.

The completion of additional studies will be completed under a separate cover (including a hydrogeological assessment, stormwater management report and tree management plan) to confirm and refine the physiographical, hydrological, and hydrogeological characteristics of this site and to identify, assess and mitigate any potential corresponding impacts anticipated by the proposed development. Reference and coordination between and among each of these reports and the Scoped EIS will occur to ensure a comprehensive and complete submission to the agencies for approval.

SUMMARY

The above noted ToR are intended to meet the study and reporting requirements of Policy C.2.5.3 to C.2.5.7 of the Urban Hamilton Official Plan, and to address HCA regulatory and Plan Review responsibilities. In submitting these ToR for your review, we ask for comments and suggestions that



February 22, 2016
Page 8 of 8

Reference: Revised Terms of Reference for a Scoped Environmental Impact Statement (EIS) for a proposed Plan of Subdivision at 140 Garner Road East in Hamilton, Ontario

will allow us to finalize this document and subsequently obtain approval from the City of Hamilton and HCA of this ToR as part of the pre-consultation process. We look forward to discussing the details of the Scoped EIS.

If you have any questions, or wish to discuss the content of the above, please feel free to contact the undersigned.

Sincerely,

STANTEC CONSULTING LTD.

A handwritten signature in black ink that reads "Janice Ball".

Janice Ball, B.Sc.
Terrestrial Ecologist
Tel: (519) 585-7287
Fax: (519) 579-4239
janice.ball@stantec.com

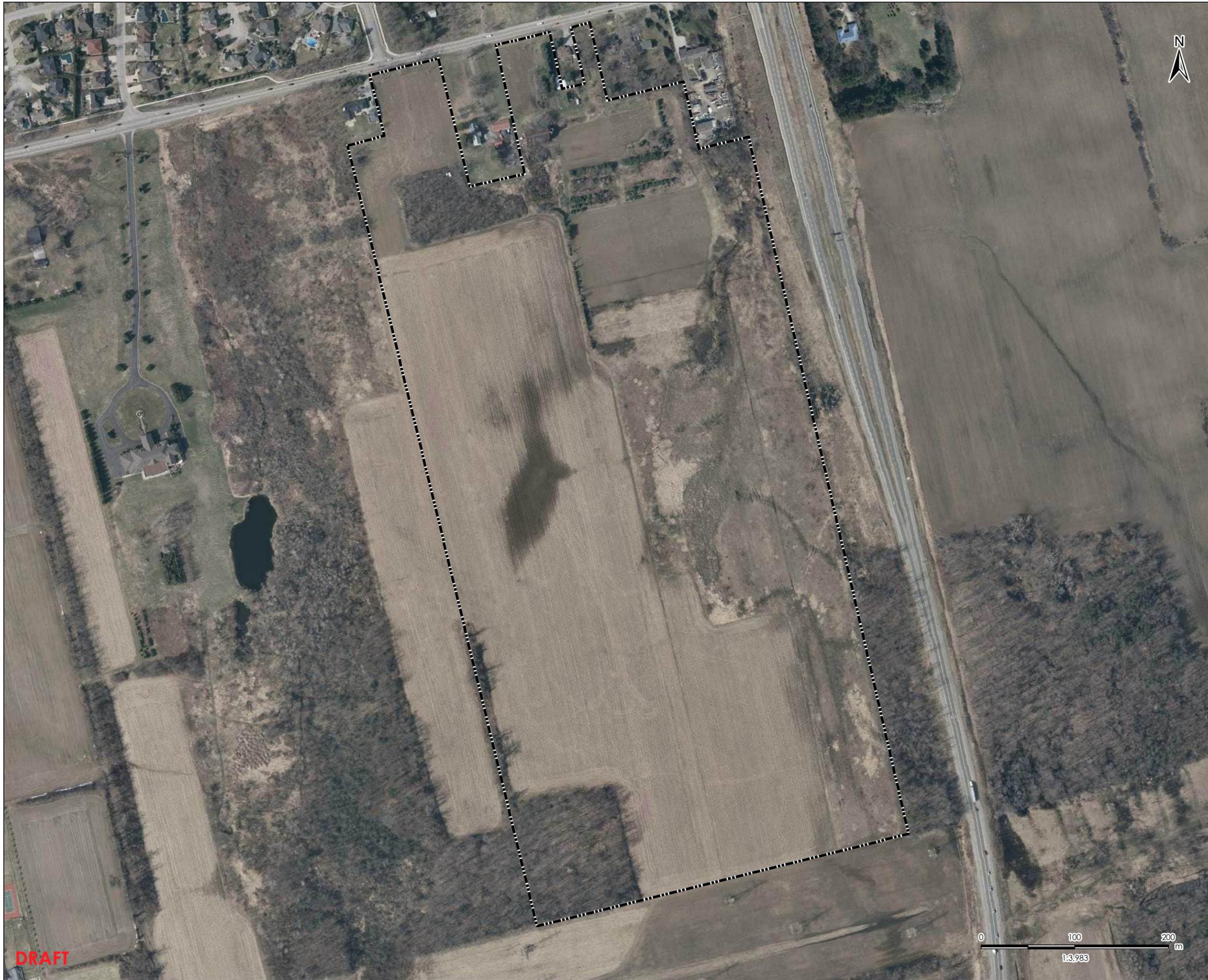
A handwritten signature in black ink that reads "Shari Muscat".

Shari Muscat, B.A., B.E.S
Project Manager / Environmental Planner
Tel: (519) 575-4116
Fax: (519) 579-4239
shari.muscat@stantec.com

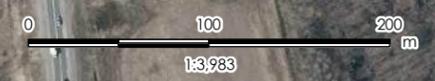
Attch.: Figure 1 – Subject Property

c.c. Nora Jamieson – Watershed Planner, Hamilton Conservation Authority
Lesley McDonell – Terrestrial Ecologist, Hamilton Conservation Authority
Carrie Curtis – Project Manager, Stantec Consulting Ltd.

\\Cd1004\01\work_group\01609\active\160321401\planning\drawing\MXD\Terrestrial\TermsOfReference\160321401_TOR_Fig01_SubjectProperty.mxd
Revised: 2016-01-28 By: ccoghtan



DRAFT



Legend
Subject Property



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2014.
 3. Orthoimagery © First Base Solutions, 2014.

January 2016
160321401

Client/Project
140 Garner Road
Ancaster, Ontario

Figure No.
1 **DRAFT**

Title
Subject Property

Ball, Janice

From: Ball, Janice
Sent: Tuesday, February 16, 2016 1:29 PM
To: Muscat, Shari
Subject: 140 Garner Road NH Info Request

This message has been archived.

Good Afternoon,

Stantec Consulting Ltd. is in the process of gathering natural heritage information in order to prepare an Environmental Impact Study for a proposed commercial development project at 140 Garner Road in Hamilton, Ontario (near the intersection of Hwy 6 and Hwy 403). Please refer to the attached figure that outlines the location of the proposed development.

A review of the Natural Heritage Information Centre data on the MNR's Make a Map: Natural Heritage Areas website powered by Land Information Ontario (2015) indicates that the following recent (less than 30 years old) species occurrences have been recorded within 1 kilometre of the Subject Property:

Scientific Name

Common Name

S-Rank

COSEWIC

MNR Status

Castanea dentata

American Chestnut

S2

Endangered

Endangered

Onosmodium molle ssp. hispidissimum

Soft Hairy False Gromwell

S2

Not at Risk

Not at Risk

Species at risk that have been more recently designated that may be

Attachments:

From: [Laurence, Anne Marie \(MNRF\)](#)
To: [Ball, Janice](#)
Subject: RE: MNRF NH Info Request for 140 Garner Road
Date: Monday, April 11, 2016 3:05:06 PM
Attachments: [SAR List City of Hamilton - April 11 2016.pdf](#)
[Guelph Information Request FillableForm.pdf](#)
[Species Observations Entry BLANK.xls](#)

Good afternoon Janice

The Ministry of Natural Resources and Forestry (MNRF), Guelph District Office has had an opportunity to review the natural heritage information and records for the subject property located at **140 Garner Road East, in the City of Hamilton**. It is understood that this information is required as part of an EIS being undertaken by Stantec.

For any future natural heritage information requests, we ask that you kindly complete the attached Guelph Information Request Form (fillable pdf) and submit the completed form to esa.guelph@ontario.ca.

Based on the information that you have provided, MNRF staff can offer the following information and comments for your consideration:

Wetlands

There are no provincially significant wetlands (PSWs) on or adjacent to the subject property. However, the Ministry notes that there are unevaluated wetlands to the west of the subject property and that the subject property appears to include unmapped wetlands.

In order to update our mapping, if the project team has mapped additional wetland areas currently not included in the dataset available through LIO, we ask that a digital copy (e.g., shapefile) be forwarded to the Guelph District Office (esa.guelph@ontario.ca).

Areas of Natural and Scientific Interest (ANSIs)

There are no provincially significant ANSIs on or adjacent to the study area.

Aquatic Resources

The subject property is drained by an intermittent tributary of Ancaster Creek which discharges to Spencer Creek which in turn discharged to Lake Ontario. Since the intermittent stream on site is a conduit for sediment to leave the site and enter fish habitat further downstream, it is important that sediment be prevented from entering the stream. Fish habitat on site may be marginal if present at all; however, the Ministry recommends that the construction timing restriction for warmwater fish be applied (i.e., April 1 to June 30th).

Species at Risk (SAR)

Please be advised that there are records in the area for the following SAR: Butternut (endangered), Jefferson Salamander (endangered), Chimney Swift (threatened) and Milksnake (special concern). We note that the project team has already identified Butternut and Barn Swallow through the EIS. The District is interested in including these records in our database. Therefore, we kindly ask that the attached excel species observation spreadsheet be completed for these and any other SAR observations and submitted to the District Office via esa.guelph@ontario.ca.

In addition, please be advised that because the province has not been surveyed comprehensively for the presence of SAR, the absence of a record is not an appropriate indicator for the absence of SAR from an area. To determine the presence of SAR for a given study area, the District's recommended approach includes the following:

I. Habitat Inventory

MNRF staff recommends undertaking a comprehensive botanical inventory of the entire area that may be subject to direct and indirect impacts from the proposed activity. The vegetation communities should be classified as per the "Ecological Land Classification (ELC) for Southern Ontario" system, to either the "Ecosite" or "Vegetation Type" level. With respect to aquatic habitats in the study area, we recommend you collect data on the physical characteristics of the waterbodies and inventory the riparian zone vegetation, so that these habitats can be classified as per the Aquatic Ecosites described in the ELC manual.

II. Potential Species at Risk within the Study Area

A list of SAR that have the potential to occur in the area can be produced by cross-referencing the ecosites described during the habitat inventory with the habitat descriptions of SAR known to occur within the planning area. The list of SAR known to occur in the **City of Hamilton** is attached for your reference. The species-specific COSEWIC status reports (www.cosewic.gc.ca) are a good source of information on habitat needs and will be helpful in determining the suitability of the study areas ecosites for a given species.

Please note that the Species at Risk in Ontario list (SARO) is a living document and is amended periodically as a result of species assessment and re-assessments conducted by the Committee on the Status of Species at Risk in Ontario (COSSARO). The SARO list can be accessed on the webpage <https://www.ontario.ca/environment-and-energy/species-risk-ontario-list>.

COSSARO also maintains a list of species to be assessed in the future. It is recommended to take COSSARO's list of anticipated assessments into consideration, especially when the proposed start date of the activity is more than 6 months away, or the project will be undertaken over a period greater than 6 months. The list can be viewed at <http://www.ontario.ca/environment-and-energy/help-protect-species-risk>.

SAR habitat prescribed under regulation can be accessed on the Environmental Registry and searching for postings related to Ontario Regulation 242/08 under the *Endangered Species Act, 2007*.

III. Species at Risk Surveys

Ministry staff are of the opinion that each SAR identified under Step II should be surveyed for, regardless of whether or not the species has been previously recorded in the area. The survey report should describe how each SAR was surveyed for, and provide a rationale for why certain species were not afforded a survey (e.g. habitat within the study area is not suitable for a specific SAR). Please note that some targeted surveys may require provincial authorizations.

Other information

The Ministry notes that the subject property includes a deer winter congregation area.

MNRF staff additionally recommends contacting the municipality and the Conservation Authority to determine if they have any additional information or records of interest for the study area.

I hope this information is of assistance.

Best regards,

Anne Marie

Anne Marie Laurence
Management Biologist
Ministry of Natural Resources & Forestry
Guelph District
(519) 826-4132

From: Ball, Janice [<mailto:Janice.Ball@stantec.com>]

Sent: February-17-16 12:13 PM

To: Buck, Graham (MNRF)

Cc: Curtis, Carrie

Subject: MNRF NH Info Request for 140 Garner Road

Good Afternoon Graham,

Please find the attached letter requesting background species at risk and natural heritage information that is required for the completion of an Environmental Impact Study for a proposed commercial development at 140 Garner Road in Hamilton, Ontario. The letter defines the Subject Property boundary, provides background information that Stantec has already obtained for the property, and requests any additional information that the MNRF may have regarding the property. Please let me know if you have any questions regarding this request.

Regards,

Janice Ball, B.Sc.

Terrestrial Ecologist

Stantec Consulting Ltd.
100-300 Hagey Boulevard Waterloo ON N2L 0A4
Phone: (519) 585-7287
janice.ball@stantec.com

The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

 Please consider the environment before printing this email.

Amphibian	SARO	Protection	Habitat Information	Timing Windows	Survey Protocol
Jefferson Salamander <i>Ambystoma jeffersonianum</i>	END	Species Protection and Habitat Regulation	Inhabits deciduous and mixed deciduous forests with suitable breeding areas which generally consist of ephemeral (temporary) bodies of water that are fed by spring runoff, groundwater, or springs.	Active: March – October Hibernates: October – March Breeding: Late March - Mid April	Contact MNRF Guelph District Management Biologist to obtain a copy of the protocol
Bird	SARO	Protection	Habitat Information	Timing Windows	Survey Protocol
Acadian Flycatcher <i>Empidonax virescens</i>	END	Species Protection and General Habitat Protection	Generally requires large areas of mature, undisturbed forest; avoids the forest edge; often found in well wooded swamps and ravines.	Migrate South before Winter	Follow Breeding Bird Survey Protocol
Bald Eagle <i>Haliaeetus leucocephalus</i>	SC	N/A	Prefers deciduous and mixed-deciduous forest; and habitat close to water bodies such as lakes and rivers. They roost in super canopy trees such as Pine.	Breed and Nest - April or May Some Migrate South when waterbodies freeze over	Follow Breeding Bird Survey Protocol
Bank Swallow <i>Riparia riparia</i>	THR	Species Protection and General Habitat Protection	It nests in a wide variety of naturally and anthropogenically created vertical banks, which often erode and change over time including aggregate pits and the shores of large lakes and rivers.	Migrate South before Winter	Follow Breeding Bird Survey Protocol. Colony and Roost information should be recorded and submitted using Bird Studies Canada's Ontario Bank Swallow Project data forms (2010).
Barn Owl <i>Tyto alba</i>	END	Species Protection and Habitat Regulation	Generally prefer low-elevation, open country; often associated with agricultural lands, especially pasture. Nests are located in buildings, hollow trees and cavities in cliffs.	Active Year Round Some leave for the Winter	Follow Breeding Bird Survey Protocol Night surveys may be helpful as they are very vocal
Barn Swallow <i>Hirundo rustica</i>	THR	Species Protection and General Habitat Protection	Prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc.	Migrate South before Winter	Follow Breeding Bird Survey Protocol

Black Tern <i>Chlidonias niger</i>	SC	N/A	Generally prefer freshwater marshes and wetlands; nest either on floating material in a marsh or on the ground very close to water	Migrate South for the Winter	Follow Breeding Bird Survey Protocol
Bobolink <i>Dolichonyx oryzivorus</i>	THR	Species Protection and General Habitat Protection	Generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands	Migrate South for the Winter	Contact MNR Guelph District Management Biologist to obtain a copy of the protocol
Canada Warbler <i>Cardellina canadensis</i>	SC	N/A	Generally prefers wet coniferous, deciduous and mixed forest types, with a dense shrub layer. Nests on the ground, on logs or hummocks, and uses dense shrub layer to conceal the nest.	Arrive in Early May Migrate South for the Winter	Follow Breeding Bird Survey Protocol
Cerulean Warbler <i>Setophaga cerulea</i>	THR	Species Protection and General Habitat Protection	Generally found in mature deciduous forests with an open understorey; also nests in older, second-growth deciduous forests.	Migrate South for the Winter	Follow Breeding Bird Survey Protocol
Chimney Swift <i>Chaetura pelagica</i>	THR	Species Protection and General Habitat Protection	Historically found in deciduous and coniferous, usually wet forest types, all with a well developed, dense shrub layer; now most are found in urban areas in large uncapped chimneys	Nesting - Late April to Mid-May Migrate South in September or Early October	Chimney Swift Monitoring Protocol. Bird Studies Canada, March 2009
Common Nighthawk <i>Chordeiles minor</i>	SC	N/A	Generally prefer open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nest on flat roof-tops).	Migrate South for the Winter	Contact MNR Guelph District Management Biologist to obtain a copy of the protocol

Eastern Meadowlark <i>Sturnella magna</i>	THR	Species Protection and General Habitat Protection	Generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	Migrate South for the Winter	Contact MNR Guelph District Management Biologist to obtain a copy of the protocol
Eastern Whip-poor-will <i>Caprimulgus vociferus</i>	THR	Species Protection and General Habitat Protection	Generally prefer semi-open deciduous forests or patchy forests with clearings; areas with little ground cover are also preferred; In winter they occupy primarily mixed woods near open areas.	Nesting: May - July	Contact MNR Guelph District Management Biologist to obtain a copy of the protocol
Eastern Wood-Pewee <i>Contopus virens</i>	SC	N/A	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges.	Migrate South for the Winter	Contact MNR Guelph District Management Biologist to obtain a copy of the protocol
Golden-winged Warbler <i>Vermivora chrysoptera</i>	SC	N/A	Generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas.	Migrate South for the Winter	Follow Breeding Bird Survey Protocol
Henslow's Sparrow <i>Ammodramus henslowii</i>	END	Species Protection and General Habitat Protection	Generally found in old fields, pastures and wet meadows. They prefer areas with dense, tall grasses, and thatch, or decaying plant material	Migrate South for the Winter	Follow Breeding Bird Survey Protocol
King Rail <i>Rallus elegans</i>	END	Species Protection and General Habitat Protection	Generally this species requires large marshes with open shallow water that merges with shrubby areas	Breed from Late April to mid-May Migrate South for the Winter	Follow Marsh Monitoring Protocol.
Least Bittern <i>Ixobrychus exilis</i>	THR	Species Protection and General Habitat Protection	Generally located near pools of open water in relatively large marshes and swamps that are dominated by cattail and other robust emergent plants	Migrate South for the Winter	Follow Marsh Monitoring Protocol; 10 day window of male calling (variable timing). Does not respond well to playback. Very difficult to detect.

Louisiana Waterthrush <i>Seiurus motacilla</i>	SC	N/A	Generally inhabits mature forests along steeply sloped ravines adjacent to running water. It prefers clear, cold streams and densely wooded swamps	Migrate South for the Winter	Follow Breeding Bird Survey Protocol
Peregrine Falcon <i>Falco peregrinus</i>	SC	N/A	Generally nest on tall, steep cliff ledges adjacent to large waterbodies; some birds adapt to urban environments and nest on ledges of tall buildings, even in densely populated downtown areas.	Active Year Round Lay Eggs around Easter Hatching occurs around Mother's Day Young fledge around Father's	Visit ideal habitat locations and listen/look for individuals in the vicinity.
Prothonotary Warbler <i>Protonotaria citrea</i>	END	Species Protection and General Habitat Protection	Generally found in the dead trees of flooded woodlands or deciduous swamp forests; Carolinia Zone	Migrate South for the Winter Eggs are laid from Late May - Early July	Follow Breeding Bird Survey Protocol
Red-Headed Woodpecker <i>Melanerpes erythrocephalus</i>	SC	N/A	Generally prefer open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks	Active from May to September	Follow Breeding Bird Survey Protocol
Short-eared Owl <i>Asio flammeus</i>	SC	N/A	Generally prefers a wide variety of open habitats, including grasslands, peat bogs, marshes, sand-sage concentrations, old pastures and agricultural fields	Active Year Round	Contact MNRG Guelph District Management Biologist to obtain a copy of the protocol
Wood Thrush <i>Hylocichla mustelina</i>	SC	N/A	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments.	Migrate South for the Winter Arrive in Ontario in mid to late spring	Follow Breeding Bird Survey Protocol
Yellow-breasted Chat <i>Icteria virens</i>	END	Species Protection and General Habitat Protection	Generally prefer dense thickets around wood edges, riparian areas, and in overgrown clearings	Migrate South for the Winter Arrive in Ontario Early May	Follow Breeding Bird Survey Protocol

Fish	SARO	Protection	Habitat Information	Timing Windows	Survey Protocol
American Eel <i>Anguilla rostrata</i>	END	Species Protection and General Habitat Protection	All fresh water, estuaries and coastal marine waters that are accessible to the Atlantic Ocean; 12-mile Creek watershed and Lake Ontario	Active Year Round	Electrofishing For information please contact your local MNRF office, CA or DFO
Grass Pickerel <i>Esox americanus vermiculatus</i>	SC	N/A	Generally occur in wetlands with warm, shallow water and an abundance of aquatic plants; occur in the St. Lawrence River, Lake Ontario, Lake Erie, and Lake Huron	Spawn from late March to early May	For information please contact your local MNRF office, CA and/or DFO
Redside Dace <i>Clinostomus elongatus</i>	END	Species Protection and Habitat Regulation	Generally found in pools and slow-moving areas of small headwater streams with a moderate to high gradient	Spawning occurs in May	Contact MNR Guelph District Management Biologist to obtain a copy of the protocol
Silver Shiner <i>Notropis photogenis</i>	THR	Species Protection and General Habitat Protection	Generally prefer moderate to large, deep, relatively clear streams with swift currents, and moderate to high gradients	Spawning occurs in May and June	For information please contact your local MNRF office, CA and/or DFO
Insect	SARO	Protection	Habitat Information	Timing Windows	Survey Protocol
Monarch Butterfly <i>Danaus plexippus</i>	SC	N/A	Exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces	Usually migrate south in late September and October	Watch for adults along roadsides and in open fields. Caterpillars feed on milkweeds: Common milkweed grows in open disturbed habitats (fields, roadsides, etc) and swamp milkweed grows in wet habitats (along streams, lakes, marshes) Adults can be spotted from a distance; caterpillars must be looked for carefully on the host plant.
Mottled Duskywing <i>Erynnis martialis</i>	END	Species Protection and General Habitat Protection	Generally inhabits a range of grassland, shrubland, and savanna habitats that contain well drained soils and the presence of its host plants Prairie Redroot (<i>Ceanothus herbaceus</i>) or New Jersey Tea (<i>Ceanothus americanus</i>).	Adult butterfly emerges from pupa in late March and early April	Watch for adults near host plants or search for caterpillars on the host plant Adults can be spotted from a distance; caterpillars must be looked for carefully on the host plant.

West Virginia White <i>Pieris virginiensis</i>	SC	N/A	Generally prefer moist, deciduous woodlands. The larvae feed only on the leaves of the two-leaved toothwort (<i>Cardamine diphylla</i>), which is a small, spring-blooming plant of the forest floor.	Adult butterfly emerges from pupa in late March; flies only in April and May	Watch for adults within moist, deciduous woodlands Caterpillars feed on the two-leaved toothwort: Toothwort grows in damp, open, rich hardwood woodlands and blooms from April to June. Adults can be spotted from a distance; caterpillars must be searched for carefully by checking host plant
Mammal	SARO	Protection	Habitat Information	Timing Windows	Survey Protocol
American Badger <i>Taxidea taxus</i>	END	Species Protection and Habitat Regulation	Generally prefers open habitats, whether natural (grasslands) or man-made (agricultural fields, road right-of-ways, golf courses).	Breed: Late Summer Semi-dormant over Winter	Determine if soils are suitable (sandy or loamy) Dens and Woodchuck burrows should be surveyed for use
Eastern Small-footed Myotis <i>Myotis leibii</i>	END	Species Protection and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark.	Hibernates in caves and mines during winter	Contact MNRG Guelph District Management Biologist to obtain a copy of the protocol
Little Brown Myotis <i>Myotis lucifugus</i>	END	Species Protection and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh).	Hibernates during winter	Contact MNRG Guelph District Management Biologist to obtain a copy of the protocol
Northern Myotis <i>Myotis septentrionalis</i>	END	Species Protection and General Habitat Protection	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: Often associated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.)	Hibernates during winter	Contact MNRG Guelph District Management Biologist to obtain a copy of the protocol

Woodland Vole <i>Microtus pinetorum</i>	SC	N/A	Generally associated with deciduous forests in areas of soft, friable, often sandy soil beneath deep humus, where it can burrow easily.	Active Year Round	Contact MNRG Guelph District Management Biologist to obtain a copy of the protocol
---	----	-----	---	-------------------	--

Mollusc	SARO	Protection	Habitat Information	Timing Windows	Survey Protocol
---------	------	------------	---------------------	----------------	-----------------

Eastern Pondmussel <i>Ligumia nasuta</i>	END	Species Protection and General Habitat Protection	Generally inhabit sheltered areas of lakes or slow streams in substrates of fine sand and mud	Active Year Round	Please reference: Mackie, G, T.J Morris, and D Ming. "Protocol for the Detection and Relocation of Freshwater Mussel Species at Risk in Ontario Great Lakes Area (OGLA)." Fisheries and Oceans Canada. (2008).
--	-----	---	---	-------------------	--

Lilliput <i>Taxolasma parvum</i>	END	Species Protection and General Habitat Protection	Found in a variety of habitats including small to large rivers, wetlands, shallows of lakes, ponds and reservoirs. They are common in soft substrates with over 50% of the substrate type comprised of sand and a mud/muck/silt combination. Typically occur with or near Green Sunfish, Bluegill, White Crappie, and Johnny Darter	Active Year Round	Please reference: Mackie, G, T.J Morris, and D Ming. "Protocol for the Detection and Relocation of Freshwater Mussel Species at Risk in Ontario Great Lakes Area (OGLA)." Fisheries and Oceans Canada. (2008): Print.
--	-----	---	---	-------------------	---

Rainbow Mussel <i>Villosa iris</i>	THR	Species Protection and General Habitat Protection	Most abundant in shallow, well-oxygenated reaches of small- to medium-sized rivers and sometimes lakes, on substrates of cobble, gravel, sand and occasionally mud	Active Year Round	Please reference: Mackie, G, T.J Morris, and D Ming. "Protocol for the Detection and Relocation of Freshwater Mussel Species at Risk in Ontario Great Lakes Area (OGLA)." Fisheries and Oceans Canada. (2008): Print.
--	-----	---	--	-------------------	---

Plant	SARO	Protection	Habitat Information	Timing Windows	Survey Protocol
-------	------	------------	---------------------	----------------	-----------------

American Chestnut <i>Castanea dentata</i>	END	Species Protection and General Habitat Protection	Found in deciduous forest communities; this tree prefers arid forests with acid and sandy soils.	Flowers occur in Late Spring and Early Summer	Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters Use a plant field guide to distinguish from similar species Perform detailed floristic inventory Look for distinctive fruits on the ground
---	-----	---	--	---	---

<p>American Columbo</p> <p><i>Frasera caroliniensis</i></p>	END	Species Protection and General Habitat Protection	Most commonly associated with open deciduous forested slopes, thickets and clearings; grows in a variety of relatively stable habitats as well as on a wide variety of soils.	<p>Germination and development of the rosette begin in early spring</p> <p>Flowers open in May</p> <p>Fruit production continues</p>	<p>Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters</p> <p>Use a plant field guide to distinguish from similar species</p> <p>Look for spikes from last years flowers</p>
<p>American Ginseng</p> <p><i>Panax quinquefolius</i></p>	END	Species Protection and General Habitat Protection	Grows in rich, moist, undisturbed and relatively mature deciduous woods in areas of neutral soil (such as over limestone or marble bedrock).	<p>Flowering begins in June and continues until August</p> <p>The fruit develop from July to August and ripen in August and September</p>	<p>Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters</p> <p>Use a plant field guide to distinguish from similar species</p>
<p>Broad Beech Fern</p> <p><i>Phegopteris hexagonoptera</i></p>	SC	N/A	Generally inhabits shady areas of beech and maple forests where the soil is moist or wet	The frond of the Broad Beech Fern appears towards the end of May	<p>Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters</p> <p>Use a plant field guide to distinguish from similar species</p>
<p>Butternut</p> <p><i>Juglans cinerea</i></p>	END	Species Protection and General Habitat Protection	Generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows	<p>Flowers from April to June.</p> <p>Fruits reach maturity during the month of September or October</p>	<p>Walk slowly and systematically in grid fashion through suitable habitat pausing every 30 meters for a detailed scan of trees within sight. Areas with dense foliage or many saplings will require a more intensive survey to detect sapling butternut. Use Butternut Health Assessment Protocol if planning on removing trees.</p>
<p>Eastern Flowering Dogwood</p> <p><i>Cornus florida</i></p>	END	Species Protection and Habitat Regulation	Generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; Also grows around edges and hedgerows	<p>Flowering occurs in mid-May, just as the leaves begin to develop.</p> <p>Fruit turns red at the end of summer.</p>	<p>Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters</p> <p>Use a plant field guide to distinguish from similar species</p> <p>Easiest to detect during Spring when in flower</p> <p>Also look for distinctive bark</p>

Few-flowered Club-rush <i>Trichophorum planifolium</i>	END	Species Protection and Habitat Regulation	Generally found in Dry Fresh Oak deciduous forests and Dry Fresh Oak-Maple-Hickory deciduous forests (only found on RBG property).	Plants flower early before the forest canopy	Seaches for this species should only be done in March or April, when the species is most visible Walk slowly and systematically in grid fashion, pausing to scan for plants every 1 meters Distinguishing this species from similar species is difficult
Green Dragon <i>Arisaema dracontium</i>	SC	N/A	Generally grows in damp deciduous forests and along streams.	Flowering occurs in May and June	Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters Use a plant field guide to distinguish from similar species
Hoary Mountain-mint <i>Pycnanthemum incanum</i>	END	Species Protection and General Habitat Protection	Oak savannas and prairies, dry sites.	Flowering occurs in July	Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters Use a plant field guide to distinguish from similar species
Red Mulberry <i>Morus rubra</i>	END	Species Protection and General Habitat Protection	Generally grows in moist forest habitats. In Ontario, these include slopes and ravines of the Niagara Escarpment, and sand spits and bottom lands; Can grow in open areas such as hydro corridors	Flowering occurs when leaves emerge in late spring. Fruit emerges in Mid-July.	Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters Use a plant field guide to distinguish from the similar White Mulberry Distinguishing Red Mulberry and the hybrid Red and White Mulberry will require the collection of leaves for generic testing, which requires a 17(2)(b) permit
Spotted Wintergreen <i>Chimaphila maculata</i>	END	Species Protection and General Habitat Protection	Generally grow in sandy habitats in dry-mesic oak-pine woods.	Flowering occurs in late July to early August	Watch for the distinct evergreen leaves in suitable habitat May be easiest to search in fall and spring
White Wood Aster <i>Eurybia divaricata</i>	THR	Species Protection and General Habitat Protection	Generally grows in open, dry, deciduous forests. It has been suggested that it may benefit from some disturbance, as it often grows along trails.	Flowering occurs in early September, and sets fruit later in the month	Walk slowly and systematically in grid fashion, pausing to scan for plants every 5 meters Use a plant field guide to distinguish from similar species
Reptile	SARO	Protection	Habitat Information	Timing Windows	Survey Protocol

<p>Blanding's Turtle <i>Emydoidea blandingii</i></p>	<p>THR</p>	<p>Species Protection and General Habitat Protection</p>	<p>Generally occur in freshwater lakes, permanent or temporary pools, slow-flowing streams, marshes and swamps. They prefer shallow water that is rich in nutrients, organic soil and dense vegetation. Adults are generally found in open or partially vegetated sites, and juveniles prefer areas that contain thick aquatic vegetation including sphagnum, water lilies and algae. They dig their nest in a variety of loose substrates, including sand, organic soil, gravel and cobblestone. Overwintering occurs in permanent pools that average about one metre in depth, or in slow-flowing streams.</p>	<p>Eggs are laid in June, with hatchlings emerging in late September and early October.</p>	<p>Contact MNR Guelph District Management Biologist to obtain a copy of the protocol</p>
<p>Eastern Hog-nosed Snake <i>Heterodon platirhinos</i></p>	<p>THR</p>	<p>Species Protection and General Habitat Protection</p>	<p>Generally prefer habitats with sandy, well-drained soil and open vegetative cover, such as open woods, brushland, fields, forest edges and disturbed sites. The species is often found near water.</p>	<p>Mating occurs in spring and in August and early September. Eggs are laid in June. Hatching occurs in late August or early September</p>	<p>In early spring, look for individuals near ideal hibernation sites During egg-laying period (June), look for nesting females in sandy areas in early morning and late evening. Rest of the season, survey intensively and systematically by flipping rocks</p>
<p>Eastern Ribbonsnake <i>Thamnophis sauritus</i></p>	<p>SC</p>	<p>N/A</p>	<p>Generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.</p>	<p>Hibernate: October - April Mating: Early Spring Hatching: Early Fall (September)</p>	<p>Contact MNRF Guelph District Management Biologist to obtain a copy of the protocol</p>
<p>Milksnake <i>Lampropeltis triangulum</i></p>	<p>SC</p>	<p>N/A</p>	<p>Generally occur in rural areas, where it is most frequently reported in and around buildings, especially old structures. It is also found in a wide variety of habitats, from prairies, pastures, and hayfields, to rocky hillsides and a wide variety of forest types. They must also be in proximity of water, and suitable locations for basking and egg-laying.</p>	<p>Active at dawn and dusk in the spring and fall, and at night in the summer. Hibernate: Late October to Early May</p>	<p>Contact MNRF Guelph District Management Biologist to obtain a copy of the protocol</p>

<p>Northern Map Turtle <i>Graptemys geographica</i></p>	SC	N/A	<p>Generally inhabits both lakes and rivers, showing a preference for slow moving currents, muddy bottoms, and abundant aquatic vegetation. These turtles need suitable basking sites (such as rocks and logs) and exposure to the sun for at least part of the day.</p>	<p>Active: At night Hibernate: October - April Hatching: Late August - Early September</p>	<p>Scan shoreline in spring and partially submerged logs/rocks in summer for basking turtles Be aware that map turtles do not allow as close of approach as other turtles before leaving a basking site Snorkel in desired aquatic habitat</p>
<p>Snapping Turtle <i>Chelydra serpentina</i></p>	SC	N/A	<p>Generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.</p>	<p>Nesting: Late May and June Hibernate: October - April</p>	<p>Scan offshore rocks and logs for basking turtles (10am-2pm) Snorkel in desired aquatic habitat Nesting Season: Search known or preferred nesting habitat areas for females</p>
<p>Spiny Softshell <i>Apalone spinifera</i></p>	THR	<p>Species Protection and General Habitat Protection</p>	<p>Generally prefer marshy creeks, swift-flowing rivers, lakes, impoundments, bays, marshy lagoons, ditches and ponds near rivers</p>	<p>Lay eggs in June or July Hibernate over winter</p>	<p>Best time to survey is during nesting season when females are active laying eggs Visual searches should be conducted in appropriate habitat</p>



CONFIRMATION OF REGISTRATION

Form Name: Notice of Activity and Other Notices under the Endangered Species Act, 2007

Date Registration Filed: 02/24/2016

Confirmation ID: M-102-2122679009

Version Number: 001

Update Date:

GARNER ROAD INVESTMENTS

21 KING ST W, SUITE 920

Hamilton, ON L8P4W7

Dear Sir/Madam,

You have registered under Ontario Regulation Reg. 242/08 of the *Endangered Species Act, 2007* and your Notice form has been received by the Ministry of Natural Resources for activities eligible under the following regulatory provision:

Barn Swallow and Chimney Swift - Activities in built structures that are habitat

located at:

140 Garner RD E
Ancaster, ON L9G3K9

for the following species:

Barn Swallow[Hirundo rustica];

You are required to show this Confirmation of Registration upon the request of the Ministry. Please refer to Ontario Regulation 242/08 for requirements that apply to your activity.

Any questions related to this registration and/or the Natural Resources Registry should be directed to:

Registry and Approval Services Centre
Ministry of Natural Resources
300 Water Street
Peterborough, ON, K9J8M5
Toll-free: 1-855-613-4256
E-mail: mnr.rasc@ontario.ca



Appendix C

Species at Risk Habitat Assessment (Stantec, 2018)

Appendix C: 160321401 Species at Risk Habitat Assessment

Scientific Name	Common Name	S-Rank	COSSARO	COSEWIC	Species Requirements	Potential Habitat in Study Area
					requires tracts of grassland >50 ha, but can use >10ha	
Canada Warbler	<i>Wilsonia canadensis</i>	S4B	SC	THR	found in moist mixed deciduous-coniferous forests with a well-developed understory; may also occur in shrub marshes, red maple stands, coniferous riparian woodlands, ravines and steep brushy slopes, and regenerating forests	No – no mixed or coniferous forests or red maple stands in Study Area. Swamp thicket habitat is small, and would likely not support Canada Warbler.
Cerulean Warbler	<i>Dendroica cerulean</i>	S3B	THR	END	Breeds mainly in mature deciduous or swamp forest. The species generally prefers tracts over 100 ha in size but it has been found to breed in woodlots as small as 10 ha (Hamel, 2000).	No – no large deciduous forest or swamp present in the Study Area.
Chimney Swift	<i>Chaetura pelagica</i>	S4B, S4N	THR	THR	Commonly found in urban areas near buildings; nests in hollow trees, crevices of rock cliffs, chimneys; highly gregarious; feeds over open water.	Yes – in the FODM2-1 and FODM1-1 communities however this species is unlikely to be present as they prefer urban structures. This species was not observed in the Study Area during field investigations.
Common Nighthawk	<i>Chordeiles minor</i>	S4B	SC	THR	Nests on the ground in open habitats preferably with rocky or graveled substrate.	No – no open areas with gravel substrate are present in the Study Area.
Eastern Meadowlark	<i>Sturnella magna</i>	S4B	THR	THR-NS	open, grassy meadows, farmland, pastures, hayfields or grasslands with elevated singing perches; cultivated land and weedy areas with trees; old orchards with adjacent, open grassy areas >10 ha in size	No – limited meadow habitat and no hayfields in the Study Area
Eastern Whip-poor-will	<i>Caprimulgus vociferus</i>	S4B	THR	THR	Favours open woodlands with frequent clearings. Preferred nesting sites contain shaded leaf litter or pine needles and generally occur along wooded edges or in clearings without any herbaceous growth (Cadman et al. 1987). Considered to be area-sensitive, preferring 100 hectares of suitable habitat for breeding.	No – no large tracts of woodland habitat present in the Study Area.
Eastern Wood Pewee	<i>Contopus virens</i>	S5B	SC	SC-NS	Open, deciduous, mixed or coniferous forest; predominated by oak with little understory; forest clearings, edges; farm woodlots, parks.	Yes – in the FODM2-1 and FODM1-1 communities. This species was observed in the FODM2-1 community during field investigations.

Appendix C: 160321401 Species at Risk Habitat Assessment

Scientific Name	Common Name	S-Rank	COSSARO	COSEWIC	Species Requirements	Potential Habitat in Study Area
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	S4B	SC	THR	Breeding occurs in successional scrub habitats bordered by forests and nests are constructed on the ground (Cadman et al, 2007). Preference is shown towards early successional scrub (10-30 years into succession).	No – successional scrub is not present in the Study Area.
Henslow's Sparrow	<i>Ammodramus henslowii</i>	SHB	END	END	A species of open habitats, consisting of weedy fields and meadows, preferably moist, with a mixture of grasses, forbs and scattered shrubs (Herkert et al., 2002). An area sensitive species, generally preferring 50 hectares of more of suitable nesting habitat (Herkert, 1991).	No – no natural large open habitat present in the Study Area.
King Rail	<i>Rallus elegans</i>	S2B	END	END	Associated with emergent freshwater coastal marshes, most often dominated by cattails, sedges and common reed, but uses shrub/marsh habitat and brackish marshes with rushes and grasses in other parts of its range (Poole et al., 2005). It is thought to prefer large marshes more than 70 ha in size.	No – no coastal marshes or other large marshes are present in the Study Area.
Louisiana Waterthrush	<i>Parkesia motacilla</i>	S3B	SC	SC	Prefers deciduous and mixed forests with a strong Eastern Hemlock component, in deeply incised ravines (Cadman et al. 2007). It will also inhabit large flooded tracts of mature deciduous swamp forest.	No – no deeply incised ravines or flooded swamps occur in the Study Area.
Peregrine Falcon	<i>Falco peregrinus</i>	S3B	SC	SC	Traditionally prefers suitable rock cliffs, particularly those adjacent to water. More recently the species has been released in various urban centers in Ontario where it successfully nests on tall buildings.	No – no cliffs or tall buildings are located in the Study Area.
Prothonotary Warbler	<i>Prothonotaria citrea</i>	S1	END	END	A habitat specialist, nesting exclusively in tree cavities, usually overhanging open water, found in deciduous swamps and floodplains (Cadman et al., 2007).	No – no deciduous swamps or open water is present in the Study Area.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S4B	SC	THR	Open, deciduous forest with little understory; fields or pasture lands with scattered large trees; wooded swamps; orchards, small woodlots or forest edges; groves of dead or dying trees; feeds on insects and stores nuts or acorns for winter; loss of habitat is limiting factor; requires cavity trees with at least 40 cm dbh;	Yes – in the FODM2-1 community. The FODM1-1 community is likely too fragmented for this species to establish a territory. This species was not observed in the Study Area during field investigations.

Appendix C: 160321401 Species at Risk Habitat Assessment

Scientific Name	Common Name	S-Rank	COSSARO	COSEWIC	Species Requirements	Potential Habitat in Study Area
					require about 4 ha for a territory	
Short-eared Owl	<i>Asio flammeus</i>	S2N, S4B	SC	SC	Inhabits open habitats such as agricultural lands, wetlands, and grasslands. This area sensitive species nests on the ground usually in tall vegetation and typically prefers 75 hectares of suitable habitat.	No – meadow and wetland habitat for this species is not large enough in the Study Area.
Wood Thrush	<i>Hylocichla mustelina</i>	S4B	THR	THR-NS	deciduous and mixed forests in southern Ontario, ranging from small and isolated to large and contiguous woodlots; presence of tall trees and a thick understory are preferred	Yes – the FODM2-1 and FODM1-1 communities may provide habitat for this species. This species was not observed in the Study Area during field investigations.
Yellow-breasted Chat	<i>Icteria virens</i>	S2B	END	SC (END)	Prefers scrubby, early successional habitat; dense tangles of grape vine and raspberry are features of most breeding sites.	No – no dense, early successional habitat present in the Study Area.
Amphibians						
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	S2	END	END	Terrestrial during the adult stage and inhabits upland deciduous forests with suitable breeding areas including limestone sinkhole ponds, kettle ponds, vernal pools and other natural basins. Breeding areas are often ephemeral and are fed by spring runoff, groundwater, or springs.	No - vernal pools suitable for breeding were observed in the Study Area, however habitat for the terrestrial stage may be present in the FODM2-1 community.
Reptiles						
Blanding's Turtle	<i>Emydoidea blandingi</i>	S3	THR	THR	Frequents lakes, ponds, and marshes, and prefers shallow water with abundant aquatic vegetation and a soft bottom (MacCulloch, 2002).	No – no permanent water present in the Study Area.
Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	S3	THR	THR	Requires well-drained loose or sandy soil; open vegetative cover; brushland or forest edge; relatively close proximity to water; and climatic conditions typical of the eastern deciduous forest (COSEWIC, 2007)	No – Soils in the Study Area are not suitable for this species.
Eastern Ribbon Snake	<i>Thamnophis sauritus</i>	S3	SC	SC	Often frequents the edge of shallow ponds, streams, marshes, swamps, or bogs with dense vegetation nearby that provides cover, with abundant exposure to sunlight and upland areas for nesting (COSEWIC,	Yes – habitat for this species may be present in the Study Area, especially near the intermittent watercourse. No potential hibernacula features were

Appendix C: 160321401 Species at Risk Habitat Assessment

Scientific Name	Common Name	S-Rank	COSSARO	COSEWIC	Species Requirements	Potential Habitat in Study Area
					2002).	observed in the Study Area. This species was not observed during field investigations.
Milksnake	<i>Lampropeltis triangulum</i>	S3	NAR	SC	Frequently reported in and around buildings, especially old structures. However, it is found in a variety of habitats, including prairies, pastures, hayfields, rocky hillsides and a wide variety of forest types. Two important features of ideal habitat are proximity to water, and suitable locations for basking and egg-laying.	Yes – habitat for this species may be present in the Study Area, especially near the intermittent watercourse. No potential hibernacula features were observed in the Study Area. This species was not observed during field investigations.
Northern Map Turtle	<i>Graptemys geographica</i>	S3	SC	SC	Highly aquatic and inhabits slow moving, large rivers and lakes with soft bottoms and abundant aquatic vegetation (COSEWIC 2002).	No – no permanent water present in the Study Area.
Snapping turtle	<i>Chelydra serpentina</i>	S3	SC	SC	Inhabits permanent, semi-permanent fresh water; marshes, swamps or bogs; rivers and streams with soft muddy banks or bottoms; often uses soft soil or clean dry sand on south-facing slopes for nest sites.	No – no habitat with permanent or semi-permanent water present in the Study Area.
Spiny Softshell	<i>Apalone spinifera spinifera</i>	S3	THR	THR	Associated with Lake Erie, especially the Sydenham and Thames Rivers (COSEWIC 2002). Requires sandy beaches and riverbanks for nesting, shallow soft-bottomed water bodies for nurseries and refuge, deep pools for thermoregulation, and riffle areas for foraging.	No – no permanent water present in the Study Area.
Mammals						
American Badger	<i>Taxidea taxus jacksoni</i>	S2	END	END	An animal of open places with deep soils. It prefers open grasslands, agricultural areas and open parklands (Eder, 2002).	Yes – open habitat for this species occurs in the Study Area, however this species is very rare and not likely to occur. No evidence of badger dens was observed in the Study Area during field investigations.
Eastern Small-footed Myotis	<i>Myotis leibii</i>	S2S3	END		roosts in caves, mine shafts, crevices or buildings that are in or near woodland; hibernates in cold dry caves or mines; maternity colonies in caves or buildings; hunts in forests	No – no caves or buildings in Study Area

Appendix C: 160321401 Species at Risk Habitat Assessment

Scientific Name	Common Name	S-Rank	COSSARO	COSEWIC	Species Requirements	Potential Habitat in Study Area
Little Brown Myotis	<i>Myotis lucifuga</i>	S4	END	END	uses caves, quarries, tunnels, hollow trees or buildings for roosting; winters in humid caves; maternity sites in dark warm areas such as attics and barns; feeds primarily in wetlands, forest edges	Yes – potential maternity roosts in FODM2-1 and FODM1-1 communities.
Northern Myotis	<i>Myotis septentrionalis</i>	S3?	END	END	hibernates during winter in mines or caves; during summer males roost alone and females form maternity colonies of up to 60 adults; roosts in houses, manmade structures but prefers hollow trees or under loose bark; hunts within forests, below canopy	Yes – potential maternity roosts in FODM2-1 and FODM1-1 communities.
Woodland Vole	<i>Microtus pinetorum</i>	S3?	SC	SC	Inhabits deciduous forests with a dense layer of leaf litter, woodland or orchard grassy patches, and areas of dense brush. Primarily subterranean, spending the majority of their time underground in burrows that are made in shallow soil or under leaf litter (Reid, 2006).	Yes – potential habitat in the FODM2-1, FODM1-1 and WODM4-4 communities.
Insects						
Monarch Butterfly	<i>Danaus plexippus</i>	S4B, S2N	SC	SC	Larvae occur only where milkweed exists; adults are more generalized, feeding on a variety of wildflower nectar (OMNR, 2014).	Yes – meadow habitat provides foraging habitat for this species, however there were no areas with an abundance of milkweed required for larvae. Monarch was observed during field investigations.
Mottled Dusky Wing	<i>Erynnis martialis</i>	S2	END	END	Associated with the larval food plants, which in Ontario are Prairie Root and New Jersey Tea. These plant species generally grow in dry, sandy soils within oak or pine woodlands, along roadsides, hydro corridors, riverbanks, oak savannas, shady hillside, tallgrass prairies and alvars (Linton, 2015).	No – no dry, sandy woodland communities in the Study Area, and no occurrences of prairie root or New Jersey Tea observed during field investigations.
West Virginia White	<i>Pieris virginiensis</i>	S3	SC	NAR	Occurs near its only known food plant, toothwort. Toothworts, generally occupy moister areas of good quality, mesic, sugar maple-dominated deciduous woodlands.	No – although the FODM2-1 and FODM1-1 communities may provide habitat for toothwort that is required to support this species, toothwort was not observed during field investigations.

Appendix C: 160321401 Species at Risk Habitat Assessment

Scientific Name	Common Name	S-Rank	COSSARO	COSEWIC	Species Requirements	Potential Habitat in Study Area
Plants						
American Chestnut	<i>Castanea dentata</i>	S2	END	END	Grows in rich mixed and deciduous forests, frequently with oak; most populations have been decimated by chestnut blight (Nixon, 1997).	Yes – potential habitat in the FODM2-1 and FODM1-1 communities. American Chestnut was observed in the FODM2-1 community during field investigations.
American Columbo	<i>Frasera caroliniensis</i>	S2	END	END	Occurs in a variety of habitats but is most commonly associated with dry open forested slopes but can be found in clearings and thickets as well as swampy areas; Its long life span may allow for persistence in sub-optimal habitats (COSEWIC, 2006).	Yes – potential habitat in the FODM2-1 and FODM1-1 communities. This species was not observed during field investigations.
American Ginseng	<i>Panax quinquefolius</i>	S2	END	END	Found within rich, moist deciduous woods, particularly on calcareous rocky shaded slopes. Colonies often found in the warm, well drained microhabitat at the bottom of gentle south to south-west facing slopes (COSEWIC, 2000).	Yes – potential habitat in the FODM2-1 and FODM1-1 communities. This species was not observed during field investigations.
Broad Beech Fern	<i>Phegopteris hexagonoptera</i>	S3	SC	SC	Occurs in moist areas of rich deciduous forests such as the base of slopes and along seeps and streams (Reznicek et al. 2011), often inhabiting the shady areas of beech and maple forests.	Yes – potential habitat in the FODM2-1 and FODM1-1 communities. This species was not observed during field investigations.
Butternut	<i>Juglans cinerea</i>	S3?	END	END	Commonly found in a variety of habitats throughout Southern Ontario, including woodlands and hedgerows ideal habitat includes rich, moist, and well-drained soils often found along streams, but may also be found on well-drained gravel sites, particularly those made of limestone (COSEWIC, 2003).	Yes – potential habitat in the FODM2-1 and FODM1-1 communities. Butternut was observed during field investigations in the THDM3 hedgerow on the east boundary of the Subject Property and in the FOD community in the Southwest corner of the Subject Property.
Eastern Flowering Dogwood	<i>Cornus Florida</i>	S2?	END	END	An understory plant of dry to fresh deciduous and mixed forests, which frequently grows on the tops of slopes or other dry microsites, and occasionally in moister areas where no flooding occurs; preferred soils range from sand to sandy loam and clay loam (COSEWIC, 2007).	Yes – potential habitat in the FODM2-1 and FODM1-1 communities. This species was not observed during field investigations.



Appendix D

Plant Species List, Stantec (2018)

Appendix D_ 160321401 Plant Species List

Family ¹	Scientific Name ¹	Common Name ¹	Species Code ^{3,4}	Establishment Means ¹	Coefficient of Conservatism ³	Wetness Index ³	Wetland Plant Species ³	Weediness Index ³	Provincial Status ^{2,4}	SARO Status ²	COSEWIC Status ³	LOCAL STATUS HAMILTON/WENTWORTH ³	LOCAL STATUS HAMILTON ³
Caprifoliaceae	<i>Dipsacus fullonum</i>	common teasel	DIPFULL	introduced		5		-1	SE5			I	I
Caprifoliaceae	<i>Lonicera tatarica</i>	Tartarian honeysuckle	LONTATA	introduced		3		-3	SE5			I	I
Caryophyllaceae	<i>Cerastium fontanum vulgare</i>	common mouse-ear chickweed	CERFONT	introduced		3		-1	SE5			I	I
Cornaceae	<i>Cornus alternifolia</i>	alternate-leaved dogwood	CORALTE	native	6	5			S5			X	X
Cornaceae	<i>Cornus racemosa</i>	grey dogwood	CORNFOR	native	-?	-?	-?	-?	S5		?	-?	-?
Cornaceae	<i>Cornus stolonifera</i>	red-osier dogwood	CORSERI	native	2	-3	I*		S5			X	X
Cucurbitaceae	<i>Echinocystis lobata</i>	wild cucumber	ECHLOBA	native	3	-2	T		S5			X	X
Fabaceae	<i>Melilotus albus</i>	white sweet-clover	MELALBA	introduced		3		-3	SE5			I	I
Fabaceae	<i>Robinia pseudoacacia</i>	black locust	ROBPSEU	introduced		4		-3	SE5			I	I
Fabaceae	<i>Trifolium hybridum</i>	alsike clover	TRIHYBR	introduced		1		-1	SE5			I	I
Fabaceae	<i>Vicia cracca</i>	tufted vetch	VICCRAC	introduced		5		-1	SE5			I	I
Fagaceae	<i>Castanea dentata</i>	American chestnut	CASDENT	native	8	5		0	S2	END	END		U6
Fagaceae	<i>Quercus alba</i>	white oak	QUEALBA	native	6	3			S5			X	X
Fagaceae	<i>Quercus rubra</i>	northern red oak	QUERUBR	native	6	3			S5			X	X
Geraniaceae	<i>Geranium maculatum</i>	spotted geranium	GERMACU	native	6	3			S5			X	X
Geraniaceae	<i>Geranium robertianum</i>	herb-Robert	GERROBE	native		5		-2	S5			I	I
Grossulariaceae	<i>Ribes americanum</i>	wild black currant	RIBAMER	native	4	-3	T		S5			X	X
Grossulariaceae	<i>Ribes cynosbati</i>	eastern prickly gooseberry	RIBCYNO	native	4	5			S5			X	X
Grossulariaceae	<i>Ribes sp.</i>												
Juglandaceae	<i>Carya cordiformis</i>	bitternut hickory	CARCORD	native	6	0			S5			X	X
Juglandaceae	<i>Carya ovata ovata</i>	shagbark hickory	CAROVAT	native	6	3	T		S5			X	X
Juglandaceae	<i>Juglans cinerea</i>	butternut	JUGCINE	native	6	2			S3?	END	END	X	X
Juglandaceae	<i>Juglans nigra</i>	black walnut	JUGNIGR	native	5	3			S4			X	X
Lamiaceae	<i>Glechoma hederacea</i>	ground-ivy	GALSPEC	introduced		5		-2	SE5			I	I
Lythraceae	<i>Lythrum salicaria</i>	purple loosestrife	LYTSALI	introduced		-5	I	-3	SE5			I	I
Malvaceae	<i>Malva moschata</i>	musk mallow	MALMOSC	introduced		5		-1	SE5			I	I
Malvaceae	<i>Malva neglecta</i>	dwarf mallow	MALROTU	introduced		5		-1	SE5			I	I
Malvaceae	<i>Tilia americana</i>	basswood	TILAMER	native	4	3			S5			X	X
Oleaceae	<i>Fraxinus americana</i>	white ash	FRAAMER	native	4	3			S4			X	X
Oleaceae	<i>Fraxinus pennsylvanica</i>	green ash	FRAPENN	native	3	-3	T		S4			X	X
Oleaceae	<i>Ligustrum vulgare</i>	European privet	LIGVULG	introduced		1		-2	SE5			I	I
Onagraceae	<i>Circaea canadensis canadensis</i>	Canada enchanter's nightshade	CIRCANA	native	3	3			S5			X	X
Onagraceae	<i>Epilobium hirsutum</i>	hairy willowherb	EPIHIRS	introduced		-4	I	-2	SE5			I	I
Onagraceae	<i>Epilobium sp.</i>												
Onagraceae	<i>Oenothera biennis</i>	common evening primrose	OENBIEN	native	0	3			S5			X	X
Papaveraceae	<i>Chelidonium majus</i>	greater celandine	CHEMAJU	introduced		5		-3	SE5			I	I
Phytolaccaceae	<i>Phytolacca americana americana</i>	common pokeweed	PHYAMER	native	3	1			S4			RL	R5
Plantaginaceae	<i>Linaria vulgaris</i>	butter-and-eggs	LINVULG	introduced		5		-1	SE5			I	I
Polygonaceae	<i>Persicaria virginiana</i>	Virginia smartweed	PERVIRG	native	6	0			S4			RL	U8
Polygonaceae	<i>Rumex crispus</i>	curled dock	RUMECRI	introduced	-?	-?	-?	-?	SE5		?	-?	-?
Ranunculaceae	<i>Actaea pachypoda</i>	white baneberry	ACTPACH	native	6	5			S5			X	X
Ranunculaceae	<i>Actaea rubra rubra</i>	red baneberry	ACTRUBR	native	5	5			S5			X	X
Ranunculaceae	<i>Anemone canadensis</i>	Canada anemone	ANECANA	native	3	-3	T		S5			X	X
Ranunculaceae	<i>Anemone quinquefolia quinquefolia</i>	wood anemone	ANEQUIN	native	7	0			S5			X	X
Ranunculaceae	<i>Ranunculus abortivus</i>	kidney-leaved buttercup	RANABOR	native	2	-2			S5			X	X
Ranunculaceae	<i>Ranunculus hispidus hispidus</i>	bristly buttercup	RANPENS	native	3	-5	I		-?	-?		RL	X
Ranunculaceae	<i>Ranunculus recurvatus recurvatus</i>	hooked buttercup	RANRECU	native	4	-3			S5			X	X
Ranunculaceae	<i>Ranunculus sceleratus sceleratus</i>	cursed buttercup	RANSCSC	introduced	2	-5	I		-?	-?		X	X
Rhamnaceae	<i>Rhamnus cathartica</i>	European buckthorn	RHACATH	introduced		3	T	-3	SE5			I	I
Rosaceae	<i>Agrimonia gryposepala</i>	hooked agrimony	AGRGRYP	native	2	2			S5			X	X
Rosaceae	<i>Crataegus sp.</i>												
Rosaceae	<i>Fragaria vesca vesca</i>	woodland strawberry	FRAVESC	introduced	4	4			S5			X	X
Rosaceae	<i>Geum aleppicum</i>	yellow avens	GEUALEP	native	2	-1	T		S5			X	X

Appendix D_ 160321401 Plant Species List

Family ¹	Scientific Name ¹	Common Name ¹	Species Code ^{3,4}	Establishment Means ¹	Coefficient of Conservatism ³	Wetness Index ³	Wetland Plant Species ³	Weediness Index ³	Provincial Status ^{2,4}	SARO Status ²	COSEWIC Status ³	LOCAL STATUS HAMILTON/WENTWORTH ³	LOCAL STATUS HAMILTON ³
Rosaceae	<i>Geum canadense</i>	white avens	GEUCANA	native	3	0	T		S5			X	X
Rosaceae	<i>Malus pumila</i>	common apple	MALPUMI	introduced		5		-1	SE4			I	I
Rosaceae	<i>Prunus serotina serotina</i>	black cherry	PRUSERO	native	3	3			S5			X	X
Rosaceae	<i>Prunus virginiana virginiana</i>	chokecherry	PRUVIRG	native	2	1			S5			X	X
Rosaceae	<i>Rosa multiflora</i>	multiflora rose	ROSMULT	introduced		3		-3	SE4			I	I
Rosaceae	<i>Rubus allegheniensis</i>	Alleghany blackberry	RUBALLE	native	2	2			S5			X	X
Rosaceae	<i>Rubus idaeus strigosus</i>	American red raspberry	RUBUIDI	native	-?	-?	-?	-?	SNA	-?	-?	-?	-?
Rosaceae	<i>Rubus occidentalis</i>	black raspberry	RUBOCCI	native	2	5			S5			X	X
Rubiaceae	<i>Galium spurium</i>	false cleavers	GALSPUR	introduced		-?			SE1				
Salicaceae	<i>Populus deltoides deltoides</i>	eastern cottonwood	POPDEDE	native	4	-1	T		S5	-?		X	
Salicaceae	<i>Populus tremuloides</i>	trembling aspen	POPTREM	native		0	T		S5			X	X
Salicaceae	<i>Salix babylonica</i>	weeping willow	-?	introduced	-?	-?	-?	-?	-?	-?	-?	-?	-?
Salicaceae	<i>Salix eriocephala</i>	cottony willow	SALIERI	native	-?	-?	-?	-?	S5		-?	-?	-?
Sapindaceae	<i>Acer negundo</i>	Manitoba maple	ACENEGU	native	0	-2	T		S5			X	X
Sapindaceae	<i>Acer platanooides</i>	Norway maple	ACEPLAT	introduced		5		-3	SE5			I	I
Sapindaceae	<i>Acer rubrum</i>	red maple	ACERUBR	native	4	0	T		S5			X	X
Sapindaceae	<i>Acer saccharinum</i>	silver maple	ACESACI	native	5	-3	I		S5			X	X
Sapindaceae	<i>Acer saccharum</i>	sugar maple	ACESACC	native	4	3			S5			X	X
Sapindaceae	<i>Acer tataricum ginnala</i>	Amur maple	ACEGINN	introduced		5		-2	SE1				
Ulmaceae	<i>Ulmus americana</i>	white elm	ULMAMER	native	3	-2	T		S5			X	X
Verbenaceae	<i>Verbena hastata</i>	blue vervain	VERHAST	native	4	-4	I		S5			X	X
Verbenaceae	<i>Verbena urticifolia</i>	white vervain	VERURTI	native	4	-1	T		S5			X	X
Vitaceae	<i>Parthenocissus quinquefolia</i>	Virginia creeper	PARQUIN	native	6	1			S4?				
Vitaceae	<i>Vitis riparia</i>	riverbank grape	VITRIPA	native	0	-2			S5			X	X
Araceae	<i>Arisaema triphyllum pusillum</i>	small Jack-in-the-pulpit	ARITRIP	native	5	-2	T		S5			X	X
Araceae	<i>Symplocarpus foetidus</i>	eastern skunk cabbage	SYMFOET	native	7	-5	I		S5			RL	X
Asparagaceae	<i>Maianthemum canadense canadense</i>	wild lily-of-the-valley	MAICANA	native	5	0			S5			X	X
Asparagaceae	<i>Maianthemum racemosum racemosum</i>	large false Solomon's seal	MAIRACE	native	4	3			S5			X	X
Asparagaceae	<i>Polygonatum pubescens</i>	hairy Solomon's seal	POLBICO	native	8	3			S5				
Cyperaceae	<i>Carex communis communis</i>	fibrous-root sedge	-?	native	-?	-?	-?	-?	S5		-?	-?	-?
Cyperaceae	<i>Carex pensylvanica</i>	Pennsylvania sedge	CARPENS	native	5	5			S5			X	X
Cyperaceae	<i>Carex retrorsa</i>	retorse sedge	CARRETR	native	5	-5	I		S5			X	X
Cyperaceae	<i>Carex sp.</i>												
Cyperaceae	<i>Carex vulpinoidea</i>	fox sedge	CARVULP	native	3	-5	I		S5			X	X
Cyperaceae	<i>Scirpus sp.</i>												
Juncaceae	<i>Juncus sp.</i>												
Liliaceae	<i>Erythronium americanum americanum</i>	yellow trout lily	ERYAMER	native	5	5			S5			X	X
Melanthiaceae	<i>Trillium grandiflorum</i>	white trillium	TRIGRAN	native	5	5			S5			X	X
Poaceae	<i>Bromus inermis</i>	smooth brome	BROINER	introduced		5		-3	SE5			I	I
Poaceae	<i>Phalaris arundinacea arundinacea</i>	reed canarygrass	PHAARUN	native	0	-4	T		S5			X	X
Poaceae	<i>Phragmites australis australis</i>	European reed	PHRAUUAU	introduced	0	0	T	0	-?	-?			
Poaceae	<i>Poa pratensis pratensis</i>	Kentucky bluegrass	POAPRPR	introduced	0	1			-?	-?		X	I
Smilacaceae	<i>Smilax sp.</i>												
Typhaceae	<i>Typha angustifolia</i>	narrow-leaved cattail	TYPANGU	introduced	3	-5	I		SE5			X	X
Typhaceae	<i>Typha latifolia</i>	broad-leaved cattail	TYPLATI	native	3	-5	I		S5			X	X

Species Diversity		Total Number	Percentage
Vascular Plants Listed:		151	
Identified to species or ssp/var		136	
Identified to Genus (not included in calculations below)		15	
Means of Establishment			
Native Species:		91	67%
Introduced Species:		45	33%
Provincial Status (Native Species Only)			
S1-S3 Species:	rare in Ontario	2	2%
S4 Species:	uncommon in Ontario	6	7%
S5 Species:	common in Ontario	82	90%
Not defined:		1	1%
Co-efficient of Conservatism (C) and Floristic Quality Index(FQI) (Native Species Only)			
C 0 to 3	lowest sensitivity	37	41%
C 4 to 6	moderate sensitivity	46	51%
C 7 to 8	high sensitivity	4	4%
C 9 to 10	highest sensitivity	0	0%
Not defined:		5	5%
Average C		3.7	
FQI		65.8	
Presence of Weedy & Invasive Species			
weediness = 0	Not invasive	2	1%
weediness = -1	low potential invasiveness	14	10%
weediness = -2	moderate potential invasiveness	8	6%
weediness = -3	high potential invasiveness	14	10%
Not defined:		98	72%
Average weediness		-1.9	
Wetness Index			
upland	W of 5	31	23%
facultative upland	W of 4, 3 or 2	34	25%
facultative	W of 1, 0 or -1	26	19%
facultative wetland	W of -2, -3 or -4	24	18%
obligate wetland	W of -5	10	7%
Not defined:		11	8%
Average wetness value		1.2	
Presence of Wetland (W) Species			
Total Wetland Tolerant (T) as identified in OWES Manual		25	18%
Total Wetland Indicator (I) as identified in OWES Manual		18	13%
Not defined:		93	68%



Appendix E

Wildlife Species List, Stantec (2018)

Appendix E: 160321401 Wildlife Species List

COMMON NAME	SCIENTIFIC NAME	ONTARIO STATUS	COSSARO	COSEWIC	Local Status Hamilton
ODONATA					
Eastern Amberwing	<i>Perithemis tenera</i>	S4			
BUTTERFLIES					
Cabbage White	<i>Pieris rapae</i>	SNA			
American Painted Lady	<i>Vanessa virginiensis</i>	S5			
Red Admiral	<i>Vanessa atalanta</i>	S5			
Monarch	<i>Danaus plexippus</i>	S4B, S2N	SC	SC	
AMPHIBIANS					
American Toad	<i>Anaxyrus americanus</i>	S5			
Spring Peeper	<i>Pseudacris crucifer</i>	S5			
Northern Green Frog	<i>Lithobates clamitans</i>	S5			
REPTILES					
Eastern Gartersnake	<i>Thamnophis sirtalis</i>	S5			
BIRDS					
Canada Goose	<i>Branta canadensis</i>	S5			
Wild Turkey	<i>Meleagris gallopava</i>	S5			
Rock Pigeon	<i>Columba livia</i>	SNA			
Mourning Dove	<i>Zenaidura macroura</i>	S5			
Killdeer	<i>Charadrius vociferus</i>	S5B, S5N			
American Woodcock	<i>Scolopax minor</i>	S4B			
Spotted Sandpiper	<i>Actitis macularia</i>	S5			
Ring-billed Gull	<i>Larus delawarensis</i>	S5B,S4N			
Great Blue Heron	<i>Ardea herodias</i>	S5			m
Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5	NAR	NAR	
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	S4			m
Downy Woodpecker	<i>Picoides pubescens</i>	S5			
Northern Flicker	<i>Colaptes auratus</i>	S4B			
Eastern Wood-Pewee	<i>Contopus virens</i>	S4B	SC	SC-NS	
Willow Flycatcher	<i>Empidonax traillii</i>	S5B			
Eastern Phoebe	<i>Sayornis phoebe</i>	S5B			m
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S4B			
Eastern Kingbird	<i>Tyrannus tyrannus</i>	S4B			
Warbling Vireo	<i>Vireo gilvus</i>	S5B			
Red-eyed Vireo	<i>Vireo olivaceus</i>	S5B			
Blue Jay	<i>Cyanocitta cristata</i>	S5			
American Crow	<i>Corvus brachyrhynchos</i>	S5B			
Horned Lark	<i>Eremophila alpestris</i>	S5B			
Tree Swallow	<i>Tachycineta bicolor</i>	S4B			
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	S4B			m
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5			
White-breasted Nuthatch	<i>Sitta carolinensis</i>	S5			
House Wren	<i>Troglodytes aedon</i>	S5B			
Ruby-crowned Kinglet	<i>Regulus calendula</i>	S4B			
American Robin	<i>Turdus migratorius</i>	S5B			
Gray Catbird	<i>Dumetella carolinensis</i>	S4B			
Brown Thrasher	<i>Toxostoma rufum</i>	S4B			m
European Starling	<i>Sturnus vulgaris</i>	SNA			
Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B			
House Finch	<i>Haemorhous mexicanus</i>	SNA			

Appendix E: 160321401 Wildlife Species List

COMMON NAME	SCIENTIFIC NAME	ONTARIO STATUS	COSSARO	COSEWIC	Local Status Hamilton
American Goldfinch	<i>Spinus tristis</i>	S5B			
Chipping Sparrow	<i>Spizella passerina</i>	S5B			
Field Sparrow	<i>Spizella pusilla</i>	S4B			
Vesper Sparrow	<i>Poocetes gramineus</i>	S4B			m
Savannah Sparrow	<i>Passerculus sandwichensis</i>	S4B			
Song Sparrow	<i>Melospiza melodia</i>	S5B			
Baltimore Oriole	<i>Icterus galbula</i>	S4B			
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S4			
Brown-headed Cowbird	<i>Molothrus ater</i>	S4B			
Common Grackle	<i>Quiscalus quiscula</i>	S5B			
Common Yellowthroat	<i>Geothlypis trichas</i>	S5B			
Blackburnian Warbler	<i>Setophaga fusca</i>	S5B			H
Yellow Warbler	<i>Setophaga petechia</i>	S5B			
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	S5B			m
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5			
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	S4B			
Indigo Bunting	<i>Passerina cyanea</i>	S4B			
MAMMALS					
Eastern Cottontail	<i>Sylvilagus floridanus</i>	S5			
White-tailed Deer	<i>Odocoileus virginianus</i>	S5			

SUMMARY

Total Odonata: 1
 Total Butterflies: 4
 Total Amphibians: 3
 Total Reptiles: 1
 Total Birds: 50
 Total Breeding Birds: 44
 Total Mammals: 2

SIGNIFICANT SPECIES

National: 2
 Provincial: 2
 Local: 8

Explanation of Status and Acronyms

COSSARO: Committee on the Status of Species at Risk in Ontario
 COSEWIC: Committee on the Status of Endangered Wildlife in Canada
 S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)
 S2: Imperiled—Imperiled in the province, very few populations (often 20 or fewer),
 S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)
 S4: Apparently Secure—Uncommon but not rare
 S5: Secure—Common, widespread, and abundant in the province
 SNA: Not applicable— species is not a suitable target for conservation activities.
 S#S#: Range Rank—(e.g., S2S3) used to indicate any range of uncertainty about the status of the species
 S#B- Breeding status rank
 S#N- Non Breeding status rank
 ?: Indicates uncertainty in the assigned rank

END: Endangered

THR: Threatened

SC: Special Concern

2, 3 or NS after a COSEWIC ranking: either on Schedule 2, Schedule 3 or No Schedule of the Species At Risk Act

NAR: Not At Risk

H- highly significant in Hamilton Region (i.e. rare)

m- moderately significant in Hamilton Region (i.e. uncommon)

LATEST STATUS UPDATE

Odonata: Nov 2016

Butterflies: July 2016

Amphibians: Nov 2016

Reptiles: Nov 2016

Birds: February 2017

Mammals: June 2016

S and G ranks and explanations: December 2011

REFERENCES

COSSARO Status

Endangered Species Act, 2007 (Bill 184). Species at Risk in Ontario List.

COSEWIC Status

COSEWIC. 2007. Canadian Species at Risk. Committee on the Status of Endangered Wildlife in Canada.



Appendix F

Significant Wildlife Habitat Assessment

(Stantec, 2018)

Candidate Wildlife Habitat	Criteria (based on MNR Criteria Schedules for Ecoregion 7E, 2015)	Habitat Assessment of Features Based on EIS data (refer to ELC Mapping)
Bat Maternity Colonies	<ul style="list-style-type: none"> • Maternity colonies considered significant wildlife habitat are found in forested ecosites. • Either of the following Community Types: Deciduous Forest (FOD), Mixed Forest (FOM), Deciduous Swamp (SWD) or Mixed Swamp (SWM) that have >10/ha wildlife trees >25cm diameter at breast height (dbh). • Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). • Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2. • Northern Myotis prefer contiguous tracts of older forest cover for foraging and roosting in snags and trees • Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred. 	<ul style="list-style-type: none"> • The FODM2-1 and FODM1-1 communities have the potential to provide bat maternity colony habitat. • Given that the FODM2-1 and FODM1-1 will be retained, no confirmation of use surveys were conducted for these communities, and they were assumed to be significant. • The WODM4-4 community was assessed to determine suitability for bat maternity colony roosts. Only one potential bat roost tree was observed. The WODM4-4 community is therefore not considered to provide significant habitat for bat maternity colonies.
Turtle Wintering Areas	<ul style="list-style-type: none"> • Snapping and Midland Painted turtles utilize ELC community classes: Swamp (SW), Marsh (MA) and Open Water (OA), Shallow water (SA), Open Fen (FEO) and Open Bog (BOO). • Northern Map turtle- open water areas such as deeper rivers or streams and lakes can also be used as over-wintering habitat. • Water has to be deep enough not to freeze and have soft mud substrate. • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate dissolved oxygen. 	<ul style="list-style-type: none"> • There are no ponds suitable for turtle wintering areas located in the Study Area.
Snake Hibernacula	<ul style="list-style-type: none"> • Hibernation occurs in sites located below frost lines in burrows, rock crevices, broken and fissured rock and other natural features. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. • Any ecosite in southern Ontario other than very wet ones may provide habitat. The following Community Types may be directly related to snake hibernacula: Talus (TA), Rock Barren (RB), Crevice (CCR), Cave (CCA), and Alvar (RBOA1, RBSA1, RBTA1). 	<ul style="list-style-type: none"> • No potential snake hibernacula features were observed. • No candidate habitat for snake hibernacula.
Colonial-Nesting Bird Breeding Habitat (Bank and Cliff)	<ul style="list-style-type: none"> • Eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, or barns found in any of the following Community Types: Meadow (CUM), Thicket (CUT), Bluff (BL), Cliff (CL). 	<ul style="list-style-type: none"> • No bank or cliff swallow nesting habitat was observed. • No candidate habitat for colonial-nesting birds.

Candidate Wildlife Habitat	Criteria (based on MNRF Criteria Schedules for Ecoregion 7E, 2015)	Habitat Assessment of Features Based on EIS data (refer to ELC Mapping)
	<ul style="list-style-type: none"> Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation. 	
Colonial-Nesting Bird Breeding Habitat (Tree/Shrubs)	<ul style="list-style-type: none"> Identification of stick nests in any of the following Community Types: Mixed Swamp (SWM), Deciduous Swamp (SWD), Treed Fen (FET). The edge of the colony and a minimum 300 m area of habitat or extent of the Forest Ecosite containing the colony or any island <15.0 ha with a colony is the SWH. Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. 	<ul style="list-style-type: none"> No groups of large stick nests were observed during field investigations. No candidate habitat for tree/shrub colonial nesting birds.
Colonial-Nesting Bird Breeding Habitat (Ground)	<ul style="list-style-type: none"> Any rocky island or peninsula within a lake or large river. For Brewer's Blackbird close proximity to watercourses in open fields or pastures with scattered trees or shrubs found in any of the following Community Types: Meadow Marsh (MAM1-6), Shallow Marsh (MAS1-3), Meadow (CUM), Thicket (CUT), Savannah (CUS). 	<ul style="list-style-type: none"> No rocky islands or peninsulas are present within the Study Area. No Brewer's blackbirds encountered (in southern Ontario, Brewer's Blackbird known occurrences are primarily restricted to the Bruce Peninsula; none are known to occur in London Area) No candidate habitat for ground colonial nesting birds was identified.
Migratory Butterfly Stopover Areas	<ul style="list-style-type: none"> Located within 5 km of Lake Erie A combination of ELC communities, one from each land class is required: Field (CUM, CUT, CUS) and Forest (FOC, FOM, FOD, CUP) Minimum of 10 ha in size with a combination of field and forest habitat present 	<ul style="list-style-type: none"> The Study Area is not located within 5 km of the Lake Erie shoreline. No candidate habitat for migratory butterfly stopover areas.
Landbird Migratory Stopover Areas	<ul style="list-style-type: none"> The following community types: Forest (FOD, FOM, FOC) or Swamp (SWC, SWM, SWD) Woodlots must be >10 ha in size and within 5 km of Lake Erie– woodlands within 2 km of Lake Erie are more significant 	<ul style="list-style-type: none"> The Study Area is not located within 5 km of the Lake Erie shoreline. No candidate habitat for migratory landbird stopover areas.
Deer Winter Congregation Areas	<ul style="list-style-type: none"> Woodlots typically > 100 ha in size unless determined by the MNRF as significant. (If large woodlots are rare in a planning area >50ha) All forested ecosites within Community Series: FOC, FOM, FOD, SWC, SWM, SWD Conifer plantations much smaller than 50 ha may also be used 	<ul style="list-style-type: none"> No large woodlots >100ha were encountered. No candidate habitat for deer winter congregation areas.

Candidate Wildlife Habitat	Criteria (based on MNR Criteria Schedules for Ecoregion 7E, 2015)	Habitat Assessment of Features Based on EIS data (refer to ELC Mapping)
Rare Vegetation Communities		
Cliffs and Talus Slopes	<ul style="list-style-type: none"> • A Cliff is vertical to near vertical bedrock >3 m in height. • A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris • Any ELC Ecosite within Community Series: TAO, TAS, TAT, CLO, CLS, CLT • Most cliff and talus slopes occur along the Niagara Escarpment 	<ul style="list-style-type: none"> • No cliffs or talus slopes were identified. • No candidate habitat for cliffs or talus slopes.
Sand Barrens	<ul style="list-style-type: none"> • Sand barrens typically are exposed sand, generally sparsely vegetated and cause by lack of moisture, periodic fires and erosion. • Vegetation can vary from patchy and barren to tree covered but less than 60%. • Any of the following Community Types: SBO1 (Open Sand Barren Ecosite), SBS1 (Shrub Sand Barren Ecosite), SBT1 (Treed Sand Barren Ecosite). 	<ul style="list-style-type: none"> • No sand barrens were identified. • No candidate habitat for sand barrens.
Alvars	<ul style="list-style-type: none"> • An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. • Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. • Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. • Vegetation cover varies from patchy to barren with a less than 60% tree cover. • Any of the following Community Types: ALO1 (Open Alvar Rock Barren Ecosite), ALS1 (Alvar Shrub Rock Barren Ecosite), ALT1 (Treed Alvar Rock Barren Ecosite), FOC1 (Dry-Fresh Pine Coniferous Forest), FOC2 (Dry-Fresh Cedar Coniferous Forest), CUM2 (Bedrock Cultural Meadow), CUS2 (Bedrock Cultural Savannah), CUT2-1 (Common Juniper Cultural Alvar Thicket), or CUW2 (Bedrock Cultural Woodland) • An Alvar site > 0.5 ha in size 	<ul style="list-style-type: none"> • No alvars were identified. • No candidate habitat for alvars.
Old-growth Forest	<ul style="list-style-type: none"> • Old-growth forests tend to be relatively undisturbed, structurally complex, and contain a wide variety of trees and shrubs in various age classes. These habitats usually support a high diversity of wildlife species. • No minimum size criteria † in any of the following Community Types: FOD (Deciduous Forest), FOM (Mixed Forest), FOC (Coniferous Forest) 	<ul style="list-style-type: none"> • No old growth forests were identified. No candidate habitat for old growth forests.

Candidate Wildlife Habitat	Criteria (based on MNR Criteria Schedules for Ecoregion 7E, 2015)	Habitat Assessment of Features Based on EIS data (refer to ELC Mapping)
	<ul style="list-style-type: none"> Forests greater than 120 years old and with no historical forestry management was the main criteria when surveying for old-growth forests. 	
Savannahs	<ul style="list-style-type: none"> A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. In Ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario). Any of the following Community Types: TPS1 (Dry-Fresh Tallgrass Mixed Savannah Ecosite), TPS2 (Fresh-Moist Tallgrass Deciduous Savannah Ecosite), TPW1 (Dry-Fresh Black Oak Tallgrass Deciduous Woodland Ecosite), TPW2 (Fresh-Moist Tallgrass Deciduous Woodland Ecosite), CUS2 (Bedrock Cultural Savannah Ecosite). 	<ul style="list-style-type: none"> No savannahs were identified. No candidate habitat for savannahs.
Tall-grass Prairies	<ul style="list-style-type: none"> A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover. In Ecoregion 6E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario). Any of the following Community Types: TPO1 (Dry Tallgrass Prairie Ecosite), TPO2 (Fresh-Moist Tallgrass Prairie Ecosite). 	<ul style="list-style-type: none"> No tall grass prairies were identified. No candidate habitat for tall grass prairies.
Other Rare Vegetation Communities	<ul style="list-style-type: none"> Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG 	<ul style="list-style-type: none"> No rare vegetation communities were identified. No candidate habitat for rare vegetation communities.
Specialized Habitat for Wildlife		
Waterfowl Nesting Area	<ul style="list-style-type: none"> All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4 Note: includes adjacency to Provincially Significant Wetlands 	<ul style="list-style-type: none"> There were no aggregations of nesting waterfowl observed in the meadow marsh community during spring field investigations. No candidate habitat for waterfowl nesting areas.
Bald Eagle and Osprey Nesting,	<ul style="list-style-type: none"> Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. 	<ul style="list-style-type: none"> No large stick nests were identified.

Candidate Wildlife Habitat	Criteria (based on MNR Criteria Schedules for Ecoregion 7E, 2015)	Habitat Assessment of Features Based on EIS data (refer to ELC Mapping)
Foraging, and Perching Habitat	<ul style="list-style-type: none"> Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms). ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands 	<ul style="list-style-type: none"> No candidate habitat for Osprey or Bald Eagle habitat.
Woodland Raptor Nesting Habitat	<ul style="list-style-type: none"> All natural or conifer plantation woodland/forest stands combined >30 ha and with >4 ha of interior habitat. Interior habitat determined with a 200 m buffer. Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3 	<ul style="list-style-type: none"> No forest interior habitat was encountered in the Study Area. No candidate habitat for woodland raptor nesting.
Turtle Nesting Areas	<ul style="list-style-type: none"> Exposed mineral soil (sand or gravel) areas adjacent (<100 m) or within the following ELC Ecosites: MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SAS1, SAM1, SAF1, BOO1, FEO1 Best nesting habitat for turtles is close to water, away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. 	<ul style="list-style-type: none"> There were no natural areas of exposed mineral soil in the Study Area. No candidate habitat for turtle nesting areas.
Seeps and Springs	<ul style="list-style-type: none"> Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs. Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. 	<ul style="list-style-type: none"> There were no seeps/springs observed in any of the forest communities in the Study Area. No candidate wildlife habitat for seeps and springs.
Amphibian Breeding Habitat (Woodland)	<ul style="list-style-type: none"> All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD Presence of a wetland, lake, or pond within or adjacent (within 120 m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. 	<ul style="list-style-type: none"> No woodland breeding amphibians were observed during the amphibian call count surveys in the Study Area. No candidate wildlife habitat for amphibian breeding habitat (woodlands).

Candidate Wildlife Habitat	Criteria (based on MNR Criteria Schedules for Ecoregion 7E, 2015)	Habitat Assessment of Features Based on EIS data (refer to ELC Mapping)
	<ul style="list-style-type: none"> Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat 	
Amphibian Breeding Habitat (Wetland)	<ul style="list-style-type: none"> ELC Community Classes SW, MA, FE, BO, OA and SA. Wetland areas >120 m from woodland habitats. Wetlands and pools (including vernal pools) >500 m² (about 25 m diameter) supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. Bullfrogs require permanent water bodies with abundant emergent vegetation. 	<ul style="list-style-type: none"> American Toad and Green Frog (wetland breeding amphibians) were observed during the amphibian call count surveys at Station D, however not in high enough numbers to be considered significant. No candidate wildlife habitat for amphibian breeding habitat (wetlands).
Habitat for Species of Conservation Concern		
Marsh Bird Breeding Habitat	<ul style="list-style-type: none"> All wetland habitats with shallow water and emergent aquatic vegetation. May include any of the following Community Types: Meadow Marsh (MAM), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO), or for Green Heron: Swamp (SW), Marsh (MA) and Meadow (CUM) Community Types. 	<ul style="list-style-type: none"> Meadow marsh communities (MAM) observed in the Study Area contained limited areas with shallow water and emergent vegetation. No candidate habitat for marsh breeding birds.
Woodland Area-sensitive Bird Breeding Habitat	<ul style="list-style-type: none"> Habitats >30ha where interior forest is present (at least 200 m from the forest edge); typically >60 years old. These include any of the following Community Types: Forest (FO), Treed Swamp (SW) 	<ul style="list-style-type: none"> No forest interior habitat was identified in the Study Area. No candidate habitat for woodland area-sensitive breeding bird habitat.
Open Country Bird Breeding Habitat	<ul style="list-style-type: none"> Grassland areas > 30 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or hay or livestock pasturing in the last 5 years, in the following Community Type: Meadow (CUM). 	<ul style="list-style-type: none"> No meadows >30 ha were identified. No candidate habitat for open country breeding bird habitat.
Shrub/Early Successional Bird Breeding Habitat	<ul style="list-style-type: none"> Oldfield areas succeeding to shrub and thicket habitats >10 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or intensive hay or livestock pasturing in the last 5 years, in the following Community Types: Thickets (CUT), Savannas (CUS), or Woodlands (CUW). 	<ul style="list-style-type: none"> No shrub/early successional communities >10 ha. No candidate habitat for shrub/early successional breeding bird habitat.
Terrestrial Crayfish	<ul style="list-style-type: none"> Meadow marshes and edges of shallow marshes (no minimum size). Vegetation communities include MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3. Construct burrows in marshes, mudflats, meadows 	<ul style="list-style-type: none"> No terrestrial crayfish chimneys were recorded during field investigations. No candidate habitat for terrestrial crayfish.

Candidate Wildlife Habitat	Criteria (based on MNR Criteria Schedules for Ecoregion 7E, 2015)	Habitat Assessment of Features Based on EIS data (refer to ELC Mapping)
	<ul style="list-style-type: none"> • Can be found far from water 	
NHIC species element occurrences and field observations of Special Concern and rare wildlife species	<ul style="list-style-type: none"> • Based on individual species requirements 	<ul style="list-style-type: none"> • Confirmed habitat for Eastern Wood-Pewee is present in the Study Area within the FODM2-1 community. • Suitable foraging habitat for Monarch is present in cultural meadow communities in the Study Area. • Potential habitat for Woodland Vole is present in the FODM2-1, FODM1-1 and WODM4-4 communities.
Amphibian Movement Corridor	<ul style="list-style-type: none"> • Corridors may be found in all ecosites associated with water. • Determined based on identifying significant amphibian breeding habitat (wetland). 	<ul style="list-style-type: none"> • No candidate amphibian breeding habitat (wetland) was identified in the Study Area. • No candidate habitat for amphibian movement corridors.



Appendix G

Terms of Reference (GeoProcess, 2025)

EIS TERMS OF REFERENCE

February 13, 2026

Melissa Kiddie MES (PI), ERPG
Natural Heritage Planner
Planning, City of Hamilton
71 Main Street West, 5th Floor
Hamilton, On L8P 4Y5

**Re: Environmental Impact Statement Terms of Reference
140 Garner Road E, Hamilton, ON**

1. Introduction

GeoProcess Research Associates Inc. (GeoProcess) has been retained by Beedie Development Services Ltd. to complete an Environmental Impact Study (EIS) for a proposed development at 140 Garner Road East, Hamilton, Ontario, herein referred to as the "Subject Property". It is our understanding that the Subject Property is proposed for commercial development, and an EIS is required in support of the planning application.



Figure 1: UHOP Schedule B - Natural Heritage.

The Subject Property is within the jurisdiction of the City of Hamilton (the City) and Hamilton Conservation Authority (HCA). The Subject Property is situated within the City of Hamilton's Urban Boundary and within the Hamilton Airport Growth District (AEGD) Secondary Plan. The property contains natural heritage features, including a headwater tributary of Ancaster Creek, an associated wetland and two woodlands. The identified

natural heritage features within and adjacent to the Subject Property are designated as ‘Linkages’, and ‘Key Hydrologic Feature Streams’ in the Urban Hamilton Official Plan. The wetland and headwater tributary of Ancaster Creek are regulated by the Hamilton Conservation Authority (HCA), and development in and adjacent to these features is subject to Ontario Regulation 41/24.

Based on a preliminary review of the Subject Property and applicable provincial, local, and regional policies and regulations, an EIS is required to demonstrate no negative impact on the natural heritage system and to define the limits of development based on natural heritage constraints. This Terms of Reference specifically details the EIS requirements prescribed by the City.

This EIS ToR builds on Environmental Impact Statements previously written for this Subject Property. Former EIS reports include:

- 140 Garner Road Environmental Impact Study, Stantec Consulting, March 2018
- Consolidated Environmental Impact Statement, GeoProcess, December 20, 2021

Fieldwork completed for the previous studies included the following.

Table 1 Previously completed field work

Purpose of Field Work	Date(s) of Field Work	Personnel
Vegetation Surveys		
Ecological Land Classification and Fall Botanical	October 15, 2015	Stantec: J. Ball
	October 21, 2021	GeoProcess: Jenn Reader
Spring Botanical	May 18, 2016	Stantec: J. Ball
	May 13, 2022	GeoProcess: M. Douglas
Summer Botanical	August 15, 2016	Stantec: J. Ball
Summer Botanical (wetland community)	August 11, 2023	GeoProcess: C. Zoladeski
Butternut Tree Tally	May 13, 2020	GeoProcess: J. Reader, W. Birch
Butternut Tree Hybrid Review	August 11, 2023	GeoProcess: C. Zoladeski
Snag Survey	May 1, 2020	GeoProcess: W. Birch & B. Angel
Tree Inventory	July 2020	W. Birch
Wildlife Surveys		
Amphibian Call Count Surveys	April 20, 2016	Stantec: J. Ball, B. Holden
	May 12, 2016	Stantec: J. Ball, A. Corrigan
	April 30, 2020	GeoProcess: K. Glasbergen & W. Birch
	May 23, 2020	GeoProcess: W. Birch
	June 9, 2020	GeoProcess: W. Birch

Breeding Bird Surveys	June 6, 2017	Stantec: B. Holden
	June 20, 2017	Stantec: B. Holden
	June 1, 2022	GeoProcess: M. Douglas
	June 16, 2022	GeoProcess: M. Douglas
Bat Maternity Roost Surveys	March 10, 2016	Stantec: J. Ball
	May 1, 2020	GeoProcess: B. Angel, W. Birch
	June 1, 2022	GeoProcess: M. Douglas
Incidental Wildlife Observations	Completed During All Surveys	All Surveyors (GeoProcess & Stantec)
Aquatic Surveys		
Headwaters Assessment	March 10, 2016	Stantec: M. Faiella
	April 9, 2021	GeoProcess: K. Glasbergen & M. Douglas
	May 11, 2021	GeoProcess: K. Glasbergen
	July 28, 2021	GeoProcess: K. Glasbergen
Drone Surveys		
Aerial Assessment	May 10, 2023 May 14, 2023	GeoProcess: B. Quesnel

2. Governing Policies Applicable to the Study Area

The following policies outline the EIS requirements and other regulations as applicable to the Subject Property.

Urban Hamilton Official Plan (2025)

Development and site alteration are subject to the policies of the Urban Hamilton Official Plan, and the EIS will be completed in accordance with the UHOP. Specifically, the EIS will consider policies found in Section C.2.2, C.2.3 and C.2.5.

Section C.2.5.8 of the UHOP states the requirements that *new development and site alteration be subject to Policies C.2.5.3 to C.2.5.7 requires, prior to approval, the submission and approval of an Environmental Impact Statement which demonstrates to the satisfaction of the City and the relevant Conservation Authority that:*

- a) *There shall be no negative impacts on the Core Area's natural features or their ecological functions.*
- b) *Connectivity between Core Areas shall be maintained, or where possible, enhanced for the movement of surface and ground water, plants and wildlife across the landscape.*

- c) *The removal of other natural features shall be avoided or minimized by the planning and design of the proposed use or site alteration wherever possible.*

C.2.5.9 *An Environmental Impact Statement shall propose a vegetation protection zone which:*

- a) *has sufficient width to protect the Core Area and its ecological functions from impacts of the proposed land use or site alteration occurring during and after construction, and where possible and deemed feasible to the satisfaction of the City, restores or enhances the Core Area and/or its ecological functions; and*
- b) *is established to achieve, and be maintained as natural self-sustaining vegetation.*

Section C.2.5.10 states that *where vegetation protection zone (VPZ) widths have not been specified by watershed and sub-watershed plans, secondary plans, Environmental assessments and other studies, VPZ widths specified in section 2.5.20 of the Official plan shall be evaluated and addressed by Environmental Impact Statements.*

C.2.6.1 *Any required Environmental Impact Statement shall be completed in accordance with Section F.3.2.1 - Environmental Impact Statements, and comply with all provisions of Section C.2.5 – Core Areas – Outside of Greenbelt Plan Area.*

Section C.2.7.5 states that *where new development is proposed within a linkage in the NHS, a Linkage Assessment can be included as part of an Environmental Impact Statement report in accordance with Policy F.3.2.1.11 - Linkage Assessments.*

According to section C.2.7.6, Linkage Assessments shall include the following:

- a) *identify and assess the Linkage including its vegetative, wildlife, and/or landscape features or functions.*
- b) *assess the potential impacts on the viability and integrity of the Linkage as a result of the development proposal.*
- c) *make recommendations on how to protect, enhance or mitigate impacts on the Linkage(s) and its functions through planning, design and construction practices.*

Section F.3.2.1.5 states that an EIS may be scoped and a Terms of Reference outlining the scope of the EIS study shall be prepared to the satisfaction of the City in consultation with the relevant CA.

Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits

Under *Ontario Regulation 41/24*, HCA regulates lands within the following areas and development activities within these lands:

- Hazardous lands,
- Wetlands,
- River or stream valleys,
- Areas adjacent or close to the shoreline of the Great Lakes – St. Lawrence River System or to an inland lake and that may be affected by flooding, erosion or dynamic beach hazards, and

- Other areas, including areas within 30 metres of a wetland.

Development activities within and adjacent to any of the CA regulated features within the Subject Property are subject to the relevant regulations under the CA Act.

3. EIS Study Elements

The following provides the proposed study elements to complete the EIS as required by the City. This ToR recognizes previously completed field investigation and recommends additional field studies, building on the data already collected. This EIS will define the boundaries of the local natural heritage features, the extent and treatment of the required vegetation protection zones (VPZs), an appropriate development limit and recommended mitigation measures to reduce/eliminate predicted impacts to the natural heritage system. Ultimately, the EIS is intended to demonstrate that the proposed development will not result in negative impacts to the previously outlined features within the Study Area.

3.1. Background Review

A review of the existing background information will be completed. This will include a review of relevant federal, provincial and municipal acts, policies and regulations (i.e. Provincial Policy Statement, Urban Hamilton Official Plan, HCA Regulations, etc.) and existing studies/reports associated with the Subject Property and the adjacent lands, if accessible. These supplementary studies include Stantec's EIS (2018), GeoProcess' EIS (2021), and the AEGD Subwatershed Study Implementation Plan (2017).

Existing ecological databases such as the Ontario Breeding Bird Atlas, iNaturalist, and Ontario Ministry of Natural Resources Natural Heritage Information Centre (NHIC) will be reviewed. A desktop Species at Risk (SAR) and Significant Wildlife Habitat (SWH) screening will be completed using available background documents, including information acquired from the Ministry of Environment, Conservation and Parks (MECP). Species identified through the field inventories will be ranked using federal, provincial and local rankings. Local rankings will be based on the Hamilton Natural Areas Inventory Project 3rd Edition (2014).

3.2. Proposed Ecological Studies

Characterization of the natural heritage features and functions of the Study Area will include the following proposed activities:

Floristic Surveys: Vegetation characterization will be completed following the Ontario Ministry of Natural Resources Ecological Land Classification (ELC) protocol. The characterization will build on the existing vegetation surveys, which have been completed, and include a summer inventory, which will be completed in 2025. A full botanical species list, and where applicable, a map showing rare or uncommon vegetation communities or species will be provided.

Species at Risk Screening: An updated assessment and screening of potential Species at Risk will be conducted for the Subject Property based on Federal and Provincial status. Following the MECP (2019) *Client's Guide to Preliminary SAR Screening*, this screening will be based on a review of the NHIC Database, OBBA, Ontario Butterfly Atlas, Ontario Moth Atlas (current), DFO Aquatic Species at Risk Distribution Mapping, and iNaturalist, including Ontario Nature's "Herps of Ontario" Project for Herpetofauna, and any

additional lists provided by the MECP. Should SAR or SAR habitat be potentially impacted by the proposed development, it will be submitted as a memo to sar@ontario.ca for assignment to a management biologist for review.

Significant Wildlife Habitat Assessment: An updated desktop analysis of Significant Wildlife Habitat following the Ministry of Natural Resources and Forestry Significant Wildlife Habitat Technical Guide (2000) and Significant Wildlife Habitat Criteria Schedule for Ecoregion 7E (January 2015) will be conducted for the Subject Property. Potential SWH will be assessed during field studies.

Significant Woodland Evaluation: The EIS will include an assessment of woodland significance per Chapter G of the Urban Hamilton Official Plan. Woodlands that meet two or more of the criteria listed in this chapter to be considered significant. This evaluation will build on and revise the evaluation completed by Stantec (2018).

Linkage Assessment: A linkage assessment will be included to identify and assess the linkages within the Subject Property and the potential impacts on the viability and integrity of the linkage, as well as to make recommendations on the protection, enhancement, and mitigation of impacts. This assessment will follow the City of Hamilton Linkage Assessment Guidelines (2015).

Incidental Wildlife Surveys: Formal surveys for mammals, reptiles, and insects are not proposed, but incidental observations of these species will be recorded.

Non-Ecological Studies: In addition to the ecological characterization of the site, the EIS will include a discussion regarding stormwater management, servicing, and site grading plans.

4. Proposed EIS Structure

The EIS report will have the following proposed structure based on the EIS and Linkage Assessment Guidelines:

1. Introduction
 - 1.1. Study Area and Objective
 - 1.2. Regulatory Agency Consultation
2. Policy Context
 - 2.1. Fisheries Act
 - 2.2. Endangered Species Act
 - 2.3. Provincial Policy Statement
 - 2.4. Urban Hamilton Official Plan
 - 2.4.1. AEGD Secondary Plan
 - 2.5. Rural Hamilton Official Plan
 - 2.6. City of Hamilton Tree Protection By-laws
 - 2.6.1.)
 - 2.7. O. Reg. 41/24
 - 2.7.1. Hamilton Conservation Authority Planning and Regulation Policies and Guidelines
 - 2.8. Wetland Offsetting Policy Review
3. Methodology

- 3.1. Background Review
- 3.2. Field Investigations
 - 3.2.1. Vegetation Communities
 - 3.2.2. Tree Inventory
 - 3.2.3. Butternut Assessment
 - 3.2.4. Breeding Bird Surveys
 - 3.2.5. Amphibian Surveys
 - 3.2.6. Bat Maternity Roost Surveys
 - 3.2.7. Wildlife Habitat Assessment
 - 3.2.8. Incidental Wildlife Observations
 - 3.2.9. Headwater Drainage Feature Assessment
4. Existing Conditions
 - 4.1. Site Conditions and Natural Heritage Features
 - 4.2. Hydrology
 - 4.3. Hydrogeology
 - 4.4. Wetlands
 - 4.5. Terrestrial Resources
 - 4.5.1. Landscape Ecology
 - 4.5.2. Vegetation Communities
 - 4.5.3. Vascular Plants
 - 4.5.4. Significant Woodland Evaluation
 - 4.5.5. Tree Inventory
 - 4.5.6. Butternut Assessment
 - 4.5.7. Amphibians
 - 4.5.8. Breeding Birds
 - 4.5.9. Bat Maternity Colonies
 - 4.5.10. Species at Risk
 - 4.5.11. Wildlife Habitat
 - 4.5.12. Incidental Wildlife Observations
 - 4.6. Aquatic Resources
 - 4.6.1. Headwater Drainage Feature Assessment
 - 4.6.2. Fish Habitat
5. Species at Risk Assessment
6. Significant Wildlife Habitat Assessment
7. Natural Hazards
8. Proposed Development
 - 8.1. Wetland Relocation
 - 8.1.1. Compensation Plan
 - 8.1.2. Mitigation Sequence
 - 8.1.3. Offsetting Eligibility
 - 8.1.4. Hydrology
 - 8.1.5. Water Balance
 - 8.2. Stormwater Management
 - 8.2.1. Infiltration
 - 8.3. Vegetation Protection Zone
 - 8.3.1. Buffers and Setbacks
 - 8.3.2. Vegetation Protection Zone Planting Structure

9. Linkage Assessment
10. Impact Assessment
 - 10.1.Short-Term Impacts
 - 10.2.Long-Term Impacts
 - 10.3.Wetland Realignment
 - 10.4.Cumulative Impacts
 - 10.5.Impact Summary
11. Mitigation Measures
 - 11.1. Wetland and Watercourse Measures
 - 11.1.1. Vegetation
 - 11.1.2. Wildlife Fencing
 - 11.1.3. Preventing Salinity
 - 11.1.4. Waterfowl Prevention
 - 11.2.Natural Heritage System Measures
 - 11.2.1. Soil Preparation
 - 11.2.2. Planting Plan
12. Monitoring and Adaptive Management Plan
 - 12.1. Adaptive Management Overview
 - 12.2. Detailed Program
13. Policy Conformance
14. Conclusions and Recommendations
 - 14.1. Conclusions
 - 14.2. Recommendations
15. References
16. Figures
17. Appendices

5. Closing

The proposed EIS will characterize and assess the natural heritage features and their functions located on and adjacent to the Subject Property. Further, the EIS is intended to demonstrate that the proposed development will not result in any negative impacts to the existing natural heritage features or areas within and adjacent to the site, as per section C.2.5.8 of the Urban Hamilton Official Plan. An assessment of the impacts and recommended mitigation measures will be provided within the context of the proposed development at 140 Garner Road E, Hamilton, Ontario. The EIS will provide an analysis of the required vegetation protection zones (VPZs) and the development limit on the Subject Property. Detailed mapping of the Subject Property and results of the ecological assessments will also be included. This Terms of Reference document provides the approach and study elements to be followed throughout the study process.

If you have any questions regarding this submission, please do not hesitate to contact the undersigned.

Regards,

GEOPROCESS RESEARCH ASSOCIATES INC



Ken Glasbergen, MSc., ERPG
Senior Ecologist



Appendix H

Tree Preservation Plan (GeoProcess, 2025)

Tree Protection Plan

140 GARNER ROAD, HAMILTON, ON

Prepared for

Beedie Development Services Ltd.

Unit 1101, 401 The West Mall
Etobicoke, ON, M0C 5J5

November 6, 2025

Project No. P2024-849

Prepared by



GeoProcess
RESEARCH ASSOCIATES



Table of Contents

1. Introduction.....	3
2. Study Methodology	3
3. Inventory Data.....	4
3.1. Overall Findings	4
4. Trees Recommended for Preservation.....	6
5. Trees Recommended for Removal	7
6. Mitigation Recommendations and Tree Preservation Measures.....	7
6.1. Protected Species.....	8
7. Conclusions	9
Appendix A.....	10
Tree Inventory Figure and Tree Inventory Table.....	10
Appendix B	13
Implementation of the Tree Protection Plan.....	13
City of Hamilton Guidelines.....	13

List of Tables

Table 1. Tree Species Summary	5
Table 2. Tree Preservation Plan Summary	12



1. Introduction



GeoProcess Research Associates Inc. (GeoProcess) was retained by Beedie Development Services Ltd. to complete a Tree Protection Plan (TPP) for the lands at 140 Garner Road East in Hamilton, Ontario, hereby referred to as the Subject Property. The Subject Property is approximately 35.5 hectares and is mainly composed of agricultural lands, with smaller sections of forest, meadow, wetland, and residential land. The Study Area is surrounded by additional natural lands, agricultural lands, and medium density residential neighbourhoods, with Garner Road East to the north and Highway 6 to the east. One watercourse regulated by Hamilton Conservation Authority (HCA) begins in the cropland in the eastern portion of the Subject Property, flows through the adjacent wetland, and exits the Property to the northeast. An additional HCA-regulated watercourse sits approximately 200 meters to the west of the property.

The proposed commercial development includes the construction of multiple commercial buildings, surface parking lots, a Stormwater Management (SWM) facility, open space blocks, and a proposed wetland reconfiguration and enhancement. This report intends to satisfy the City of Hamilton requirements for a Tree Protection Plan and any necessary tree-related permit applications. Recommendations have been provided for tree protection and tree removals based on tree condition, tree species and the limits of construction.

2. Study Methodology

An inventory and assessment of all trees with a diameter at breast height (DBH) of 10 cm or greater was completed on December 23, 2020, and January 6, 8, and January 12, 2021, in accordance with the City of Hamilton Tree Protection Guidelines. All trees on and within 6 metres of the Subject Property relative to the proposed development envelope were assessed for condition utilizing the parameters listed below:

- **Tree #** – numbers assigned to tree that corresponds to their surveyed/mapped location in **Appendix A and Maps 1a to 1j**.
- **Species** – common and botanical names provided in the inventory table.
- **Diameter at Breast Height**
 - The diameter of a trunk of a tree including the bark measured at 1.37 metres above the highest point on the tree where the ground meets its trunk; and,
 - Where there are multiple trunks, the total diameters of the multiple trunks of a tree including the bark measured at 1.37 metres above the highest point on the tree where the ground meets one of those trunks
- **Condition** – condition of trees was assessed as follows:
 - Trunk integrity (TI): conditions on trunk that might affect likelihood of failure based on factors including co-dominant stems, cracks, decay, poor taper, lean, response growth, abnormal or missing/dead bark, etc.
 - Crown Structure (CS): condition on crown structure that might affect likelihood of failure, including live crown ratio, presence of defects (including bark, weak attachments, cracks, decay, cavities), crown density.



- Crown Vigor (CV): an assessment of overall tree health classified as weak/under stress (poor), average vigor for its species and site condition with some signs of stress (fair), growing well and appears to be free of significant health stress factors (good).
- **Comments** – additional relevant detail.

Heritage trees with a DBH of 45 cm or greater were identified based on the Town of Ancaster Tree By-law (2000-118). A heritage tree is defined as “as any tree with a DBH of no less than 45 cm with the exception of (i) all Willow species (*Salix* sp.), (ii) all Poplar species (*Populus* sp.) (iii) Siberian Elms (*Ulmus pumila*) (iv) Manitoba Maples (*Acer negundo*), and (v) Norway Maples (*Acer platanoides*)”.

Areas identified as hedgerows and polygons per **Maps 1 to 1j** included a 100% tally of trees over 10 cm DBH based on species, size and condition. The trees within these features were not mapped individually due to impacts from canopy cover and/or stem density on GPS location accuracy.

Species nomenclature and ranking is based on the Ministry of Natural Resources and Forestry Natural Heritage Information Centre species list.

For the purposes of this report, tree ownership is defined as:

1. “Private Tree”: Trees with stem(s) situated on the Study Area property;
2. “Neighboring Tree”: Trees with stem(s) situated on adjacent private property; and,
3. “Public Tree”: lands owned by the City of Hamilton.

This report has been prepared in accordance with the following applicable municipal by-laws and guidelines:

- City of Hamilton tree Protection Guidelines-City Wide (2010); and,
- By-Law to regulate trees on or affecting public property (15-125).

3. Inventory Data

Date/Time: December 23rd, 2020, and January 6th, 8th and 12th, 2021
Relative Part of Growing Season: Leaf-off

3.1. Overall Findings

A tree inventory was prepared in general accordance with the requirements of the City of Hamilton Tree Protection Guidelines (2010). Trees identified within the inventory were predominately located within the northern half of the property associated with existing hedgerows, landscape trees and fragmented cultural woodlands. The tree inventory documented approximately 1342 trees within the surveyed areas. Due to GPS error as a result of dense canopy and shrub cover, 490 trees were documented via tree tally only. As a result, a full data summary is only supplied for 852 trees. The trees documented via tree tally belong to polygons P1, P2, and P3, which can be found on **Map 1j**. The trees with full survey data including GPS coordinates can be found in survey Maps 1a through 1j.

A summary of species surveyed outside of Polygons 1-3 is provided in Table 1 below.

Table 1. Tree Species Summary

Scientific Name	Common Name	Number of Individuals	Relative Average %
<i>Acer negundo</i>	Manitoba Maple	8	0.9
<i>Acer platanoides</i>	Norway Maple	25	2.9
<i>Acer rubrum</i>	Red Maple	2	0.2
<i>Acer saccharinum</i>	Silver Maple	7	0.8
<i>Acer saccharum</i>	Sugar Maple	13	1.5
<i>Acer sp.</i>	Maple species	1	0.1
<i>Betula alleghaniensis</i>	Yellow Birch	1	0.1
<i>Betula papyrifera</i>	White Birch	8	0.9
<i>Carya ovata</i>	Shagbark Hickory	3	0.4
<i>Crataegus sp.</i>	Hawthorn species	9	1.1
<i>Fagus grandifolia</i>	American Beech	1	0.1
<i>Fraxinus americana</i>	White Ash	6	0.7
<i>Juglans cinerea</i>	Butternut	1	0.1
<i>Juglans nigra</i>	Black Walnut	436	51.2
<i>Juniperus virginiana</i>	Red Cedar	1	0.1
<i>Larix laricina</i>	Tamarack	1	0.1
<i>Malus sp.</i>	Apple species	3	0.4
<i>Picea abies</i>	Norway Spruce	1	0.1
<i>Picea glauca</i>	White Spruce	14	1.6
<i>Picea pungens</i>	Colorado Spruce	7	0.8
<i>Picea sp.</i>	Spruce species	1	0.1
<i>Pinus nigra</i>	Austrian Pine	7	0.8
<i>Pinus resinosa</i>	Red Pine	1	0.1
<i>Pinus sp.</i>	Pine	2	0.2
<i>Pinus sylvestris</i>	Scots Pine	6	0.7
<i>Populus deltoides</i>	Cottonwood	14	1.6
<i>Populus tremuloides</i>	Trembling Aspen	1	0.1
<i>Prunus avium</i>	Sweet Cherry	6	0.7
<i>Prunus serotina</i>	Black Cherry	39	4.6
<i>Quercus rubra</i>	Red Oak	16	1.9
<i>Robinia pseudoacacia</i>	Black Locust	25	2.9
<i>Salix sp.</i>	Willow species	150	17.6
<i>Sorbus sp.</i>	Mountain Ash species	1	0.1
<i>Taxus sp.</i>	Yew species	2	0.2
<i>Thuja occidentalis</i>	Eastern white cedar	3	0.4
<i>Ulmus americana</i>	White Ash	2	0.2
<i>Ulmus pumila</i>	Siberian Elm	3	0.4
Dead	Dead	25	2.9
Total		852	100

827 live trees and 25 dead trees were recorded outside of polygons 1-3. Of the live trees, 728 are privately owned and 124 are public trees. The inventoried trees were predominantly within wooded areas at the northern end of the Property but were also recorded within the numerous hedgerows across the Property and the wetland located on the eastern portion of the Property. The dominant tree species within the Property was Black Walnut (*Juglans nigra*), of which 436 individuals were recorded, comprising more than half of the trees inventoried. Individual trees were in good overall health, apart from individual White Ash (*Fraxinus americana*) trees declining from Emerald Ash Borer (EAB). A small amount of Black



Cherry (*Prunus serotina*), Hawthorn (*Crataegus sp.*), and Willow (*Salix sp.*) trees were found in poor health, which can be attributed to natural decline. Refer to Table 1 for the summary of trees inventoried and **Appendix A** for individual tree data.

Trees greater than 10 cm DBH located within P1, P2 and P3 were counted however exact locations are not shown due to dense canopy cover that interfered with accurate GPS surveys. P1, P2, and P3 contained an approximate total of 490 trees. The results of the tallies are described below.

P1

- Approximately 0.19 ha in size
- Approximately 65 trees at 10 cm DBH or greater
- Area of Silver Maple (*Acer saccharinum*) regeneration
- Eastern White Cedar hedgerow at the south edge
- Blue Spruce (*Picea pungens*) hedgerow along the north edge

P2

- Approximately 0.27 ha in size
- Approximately 200 trees at 10 cm DBH or greater
- Scots Pine (*Pinus sylvestris*) hedgerow at the north end
- Blue Spruce and Eastern White Cedar hedgerows at the south edge
- Regeneration: White Birch, Trembling Aspen, Black Walnut
- Other tree species: Manitoba maple (*Acer negundo*) and Willows

P3

- Approximately 0.47 ha in size
- Approximately 225 trees at 10 cm DBH or greater
- Scots Pine (*Pinus sylvestris*) hedgerow at the north end
- Blue Spruce and Eastern White Cedar hedgerows along south northeastern edges
- Regeneration: White Birch, Black Locust, Trembling Aspen, Black Walnut

4. Trees Recommended for Preservation

Trees recommended for preservation have been assessed using one or more of the following criteria:

- Tree is considered rare or unusual, heritage trees, high quality vegetation.
- Location sufficiently distanced from proposed site works and/or construction related stresses.
- Current health condition is acceptable.
- Tree poses a low hazard level to person or property.
- General species tolerance to construction-related and other anticipated stressors.

A total of 268 trees is recommended for preservation. Trees identified for preservation are to be protected by tree protection fencing according to the City of Hamilton tree protection guidelines (Appendix B). See Maps 1a-1j for the detailed locations of trees and protection fencing, and Appendix A for the corresponding data for each tree.

5. Trees Recommended for Removal

Trees recommended for removal have been assessed using one or more of the following criteria:

- Location is in conflict with proposed works to a degree that would compromise the long term structural and/or health integrity;
- Current health condition suggests tree is undergoing significant decline and/or death;
- Potential impacts from proposed works will cause the tree to become a hazard to person or property; and,
- General species intolerance of construction-related and other anticipated stressors.

A total of 1,049 live trees and 25 dead trees are expected to require removal due to conflict with construction of the proposed commercial buildings, surface parking lots, Stormwater Management (SWM) facility, open space blocks, and wetland reconfiguration and enhancement. This includes 584 individually surveyed trees and 490 trees with tree polygons P1-P3.

The City of Hamilton requires 1 for 1 compensation for any private tree (10 cm DBH or greater) that is proposed to be removed. Therefore, 1,074 trees will need to be compensated for by replacement planting, cash-in-lieu or a combination of both. This compensation requirement shall be completed during the project detailed design and construction phases.

6. Mitigation Recommendations and Tree Preservation Measures



The following section identifies recommended mitigation measures to avoid and minimize effects of the proposed works on trees identified for preservation. The following requirements will ensure short- and long-term preservation of trees identified for preservation. Recommended special mitigation measures are described below.

1. An ISA Certified Arborist is required to be onsite during any tree protection fencing installation or tree removals.
2. Trees identified for removal should be clearly marked with paint prior to their removal.
3. Trees identified for removal should be felled into the proposed construction area. Impacts on adjacent vegetation should be avoided during the felling process.
4. Pruning of low-lying branches may be required within the construction zone to accommodate construction equipment. In addition, any branches broken during the construction process should be properly pruned by a certified arborist as soon as possible after the damage has occurred.
5. Tree protection measures (i.e. fencing) must be implemented prior to the commencement of construction (earthworks) to ensure trees identified for preservation are not impacted by the proposed works.
6. Tree protection fencing should comprise paige wire fencing supported on metal T-bars at 3 m centres. Fences should be erected per Appendix B for trees identified for preservation.
7. Tree protection barriers need to be inspected regularly to ensure they meet the design requirements detailed within this report and Maps 1a-1j.

8. No machinery or disturbance of any type is permitted within the tree protection fence (tree protection zone). If disturbance within the TPZ is unavoidable, placement of $\frac{3}{4}$ in thick plywood over an 8-in deep mulch should be placed in TPZ to avoid or reduce soil compaction.
9. Do not store construction materials, soil, waste material or dispose of liquid material within the TPZ.
10. Any grading within the root zone must be completed by hand (rake, shovel, wheelbarrow) to ensure tree roots are not damaged.
11. A sign should be displayed on the tree protection fencing and placed on the hoarding in various locations which specify the TPZ and restrictions within the TPZ. Signage informs the public and reminds the contractors of the significance of the TPZs and the efforts put forward by the client in tree preservation.
12. Top-soil removed during stripping recommended for reapplication post-construction.
13. A construction work plan should designate specific locations for stockpiling of soils and other material.
14. Upon completion of construction works, site grading should ensure proper drainage of surface water in order to maintain original/pre-construction soil moisture regime conditions.
15. Inspection by a qualified person(s) to conduct regular monitoring to ensure all tree protection and mitigation measures are implemented as intended.
16. All tree work is to be completed to Arborist standards and by a certified Arborist who has a tree cutting license with the City of Hamilton.
17. Tree protection fencing for Trees EH, EI, and EJ will surround the trees as per Map 1a, with a 1m gap in the fence to allow for grass-cutting within the fenced area.

6.1. Protected Species

The Migratory Birds Convention Act, 1994 protects the nests of migratory birds. Trees to be removed from the site should be removed outside of the migratory bird-nesting window, the timing of which differs regionally across Canada as determined by Environment Canada. Following Environment Canada's guidelines, the window at this site is from April 1 to August 31. Trees may be removed during this restricted period only when trees are inspected for nests of protected bird species by a qualified avian biologist immediately prior to removal.

Two protected tree species listed under the Endangered Species Act (2007) were found at this site as part of the Environmental Impact Study (EIS) conducted for the site, including Butternut (*Juglans cinerea*) and American Chestnut (*Castanea dentata*). The butternut trees are generally clustered in an area on the neighbouring property to the west and were identified by Stantec in 2018 as part of a separate EIS (Map 1a). These trees were outside of the survey area for this study, except for a one (Tree #110) which was identified as a butternut hybrid by GeoProcess in 2020 and is proposed for removal. Tree protection fencing has been recommended for extension along the northwestern property limit (Map 1a) to provide precautionary protection to the general area where the butternut were identified). The American Chestnut individual was identified within the woodland to the south which is proposed to be protected by a 10m woodland setback. The individual American Chestnut was noted to be in poor health with heavy crown dieback. Further discussion on these trees is presented in the EIS prepared by GeoProcess for the Subject Property. Overall, no protected tree species are proposed to be removed or impacted.

7. Conclusions

A total of 268 trees, including 145 within the Subject Property limits, 111 neighbouring trees within 6m of the property boundary, and 5 city-owned trees within 6m of the property boundary, have been inventoried and assessed for possible preservation in the context of the proposed works. A total of 1,049 live trees and 25 dead trees require removal (1,040 private trees in the property boundary and 9 city-owned trees) due to direct conflict with the proposed works. Furthermore, 1,074 trees will need to be compensated for by replacement planting, cash-in-lieu or a combination of both.

Regards,

GEOPROCESS RESEARCH ASSOCIATES INC

Written by:



Devin Hock, B.Sc., M.Eng.
Ecologist, ISA Certified Arborist #ON-3156A

Reviewed by:



Ken Glasbergen, M.Sc., ERPG
Principal, Senior Ecologist



Notes:
 [1] Base imagery: Google
 [2] Inset map layers: Open Street Map (<https://www.openstreetmap.org/copyright>)

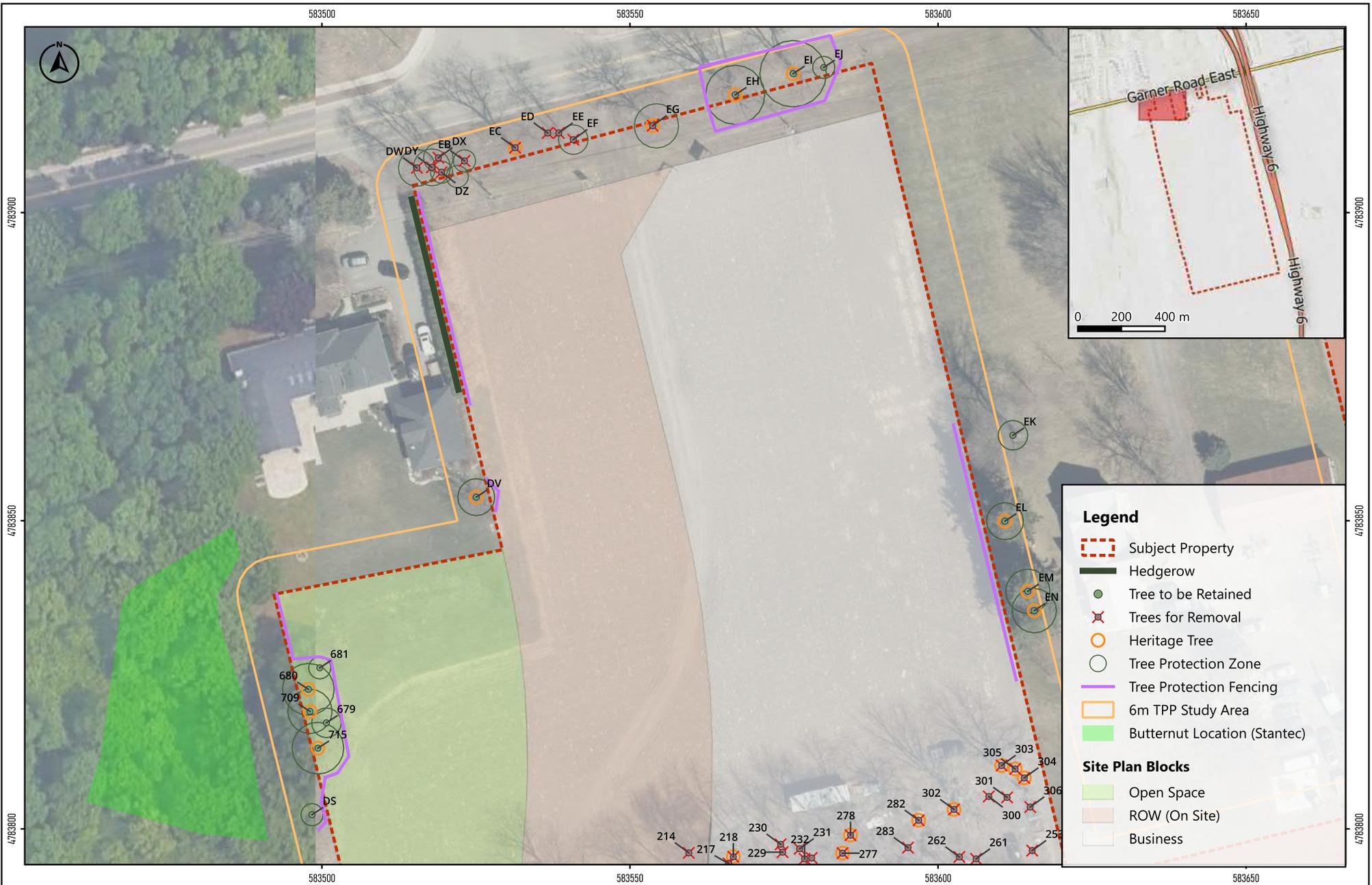


Map #1.
 Tree Inventory - Key Map

**140 Garner Road East
 Environmental Impact Statement**

ONE PROPERTIES

CREATED BY: DH PROJECT NO.: P2020-435
 CHECKED BY: KG DATE: Nov 06, 2025



Legend

- Subject Property
- Hedgerow
- Tree to be Retained
- ✕ Trees for Removal
- Heritage Tree
- Tree Protection Zone
- Tree Protection Fencing
- 6m TPP Study Area
- Butternut Location (Stantec)

Site Plan Blocks

- Open Space
- ROW (On Site)
- Business



Notes:
 [1] Base imagery: Google
 [2] Inset map layers: Open Street Map (<https://www.openstreetmap.org/copyright>)

CREATED BY: DH PROJECT NO.: P2020-435
 CHECKED BY: KG DATE: Nov 06, 2025

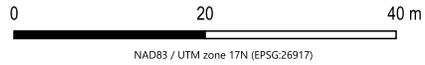
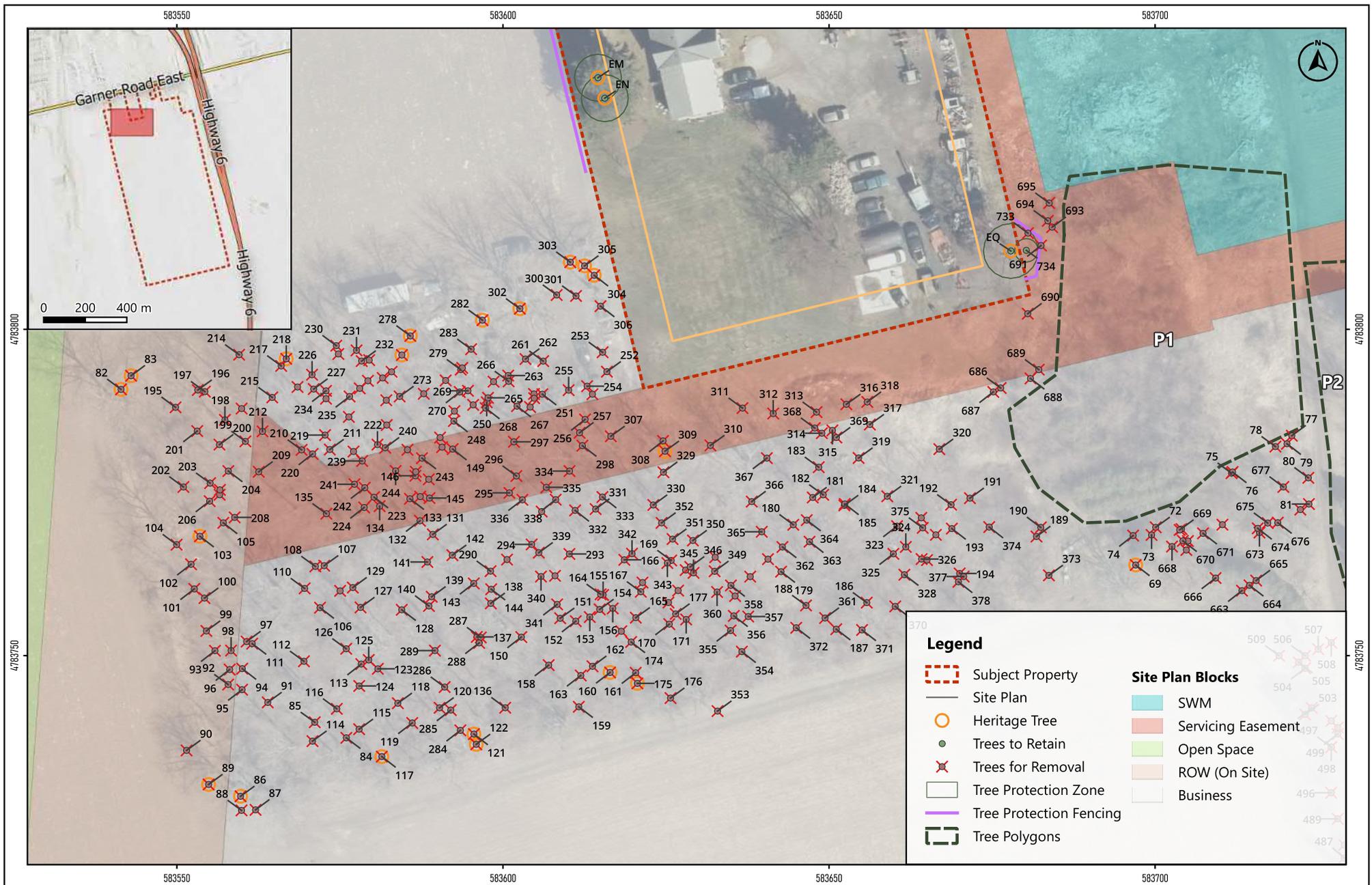


Map #1a.

Tree Inventory - Map A

140 Garner Road East
Environmental Impact Statement

ONE PROPERTIES



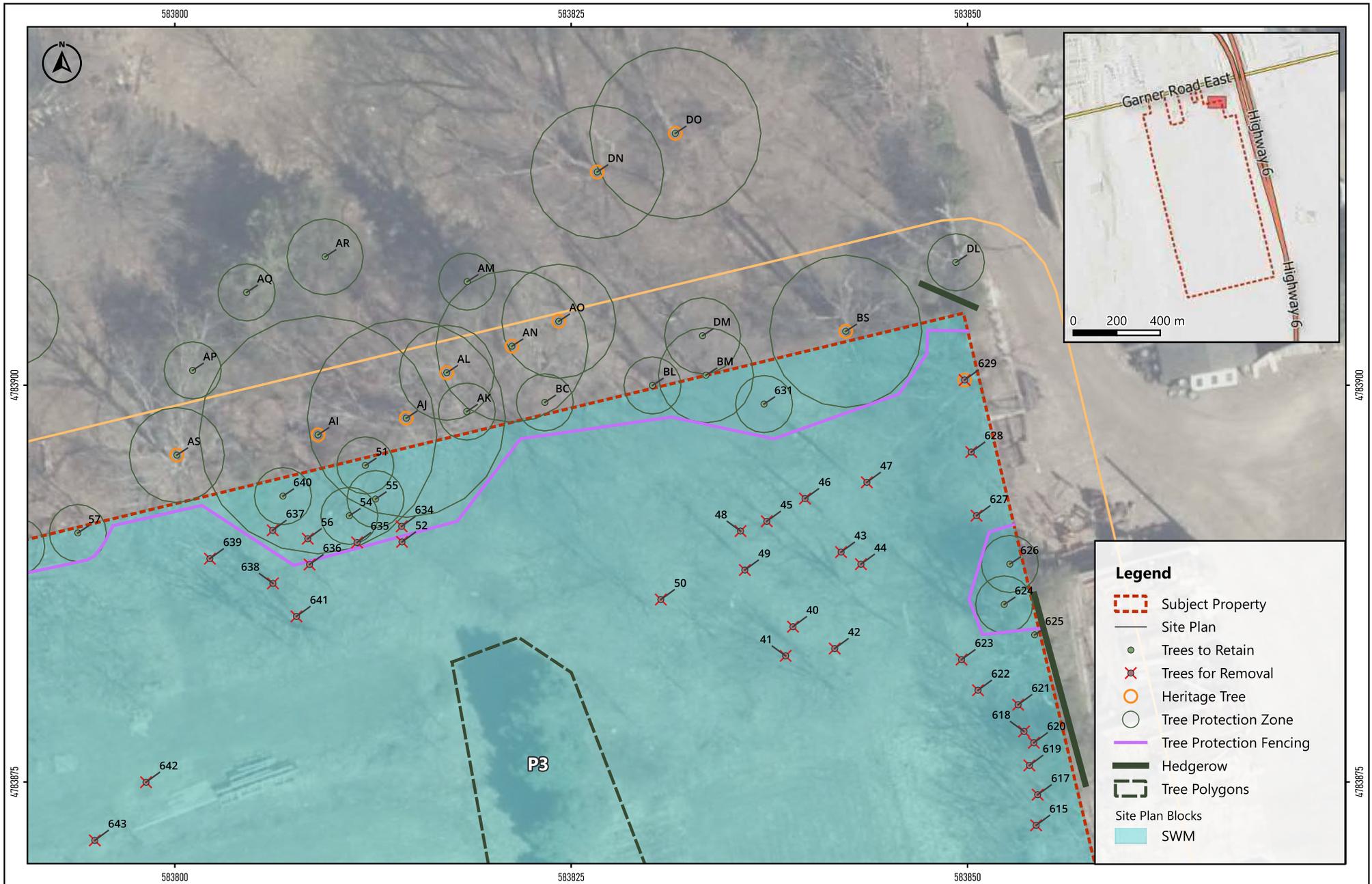
Notes:
 [1] Base imagery: Google
 [2] Inset map layers: Open Street Map (<https://www.openstreetmap.org/copyright>)

CREATED BY: PA PROJECT NO.: P2020-435
 CHECKED BY: KG DATE: Nov 06, 2025

Map #1b.
 Tree Inventory - Map B

**140 Garner Road East
 Environmental Impact Statement**

ONE PROPERTIES



Legend

- Subject Property
- Site Plan
- Trees to Retain
- Trees for Removal
- Heritage Tree
- Tree Protection Zone
- Tree Protection Fencing
- Hedgerow
- Tree Polygons
- Site Plan Blocks
- SWM



Notes:
 [1] Base imagery: Google
 [2] Inset map layers: Open Street Map (<https://www.openstreetmap.org/copyright>)

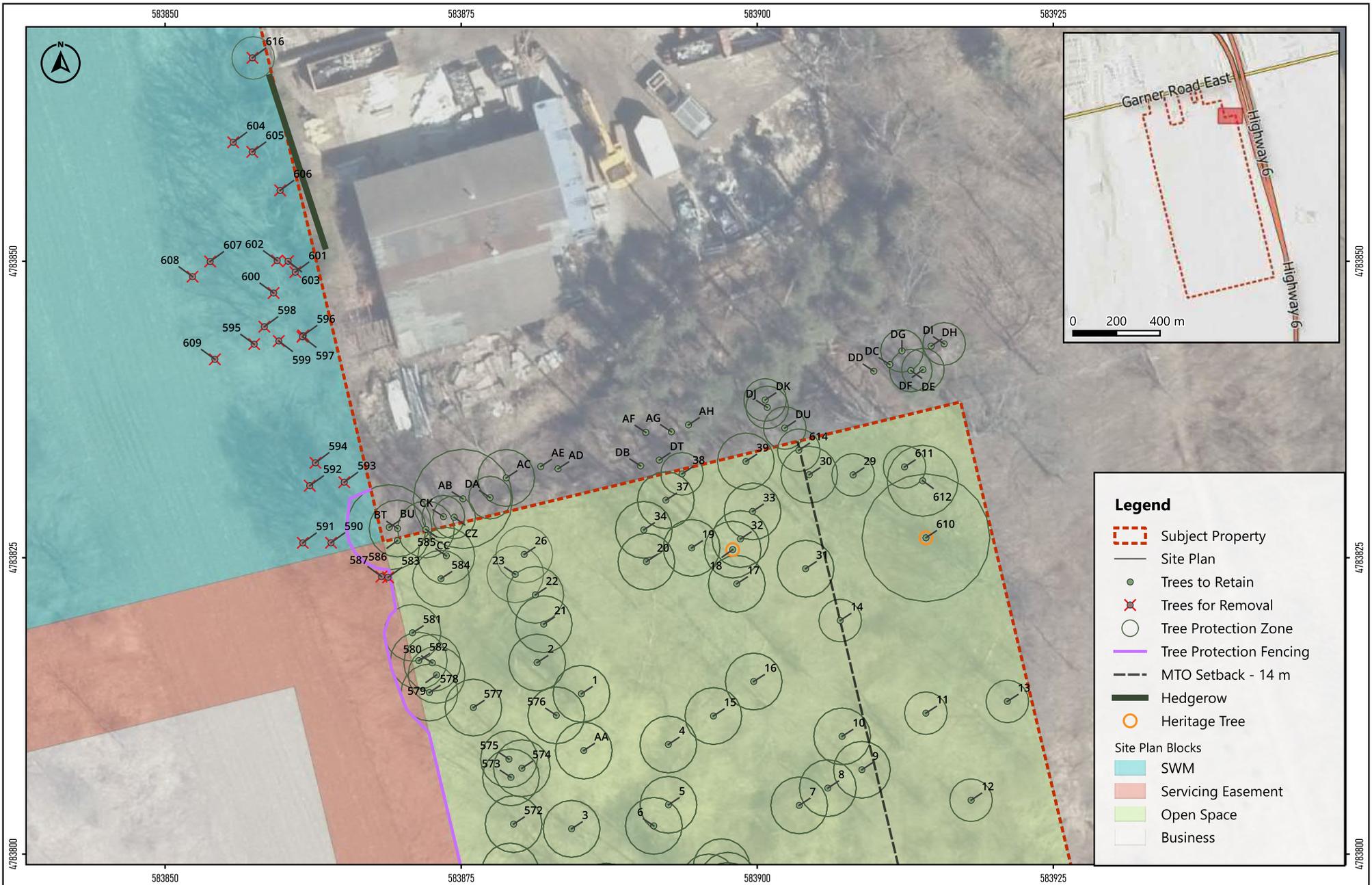


CREATED BY: DH PROJECT NO.: P2020-435
 CHECKED BY: KG DATE: Nov 06, 2025

Map #1d.
 Tree Inventory - Map D

140 Garner Road East
Environmental Impact Statement

ONE PROPERTIES



Legend

- Subject Property
- Site Plan
- Trees to Retain
- ✕ Trees for Removal
- Tree Protection Zone
- Tree Protection Fencing
- MTO Setback - 14 m
- Hedgerow
- Heritage Tree

Site Plan Blocks

- SWM
- Servicing Easement
- Open Space
- Business



Notes:
 [1] Base imagery: Google
 [2] Inset map layers: Open Street Map (<https://www.openstreetmap.org/copyright>)



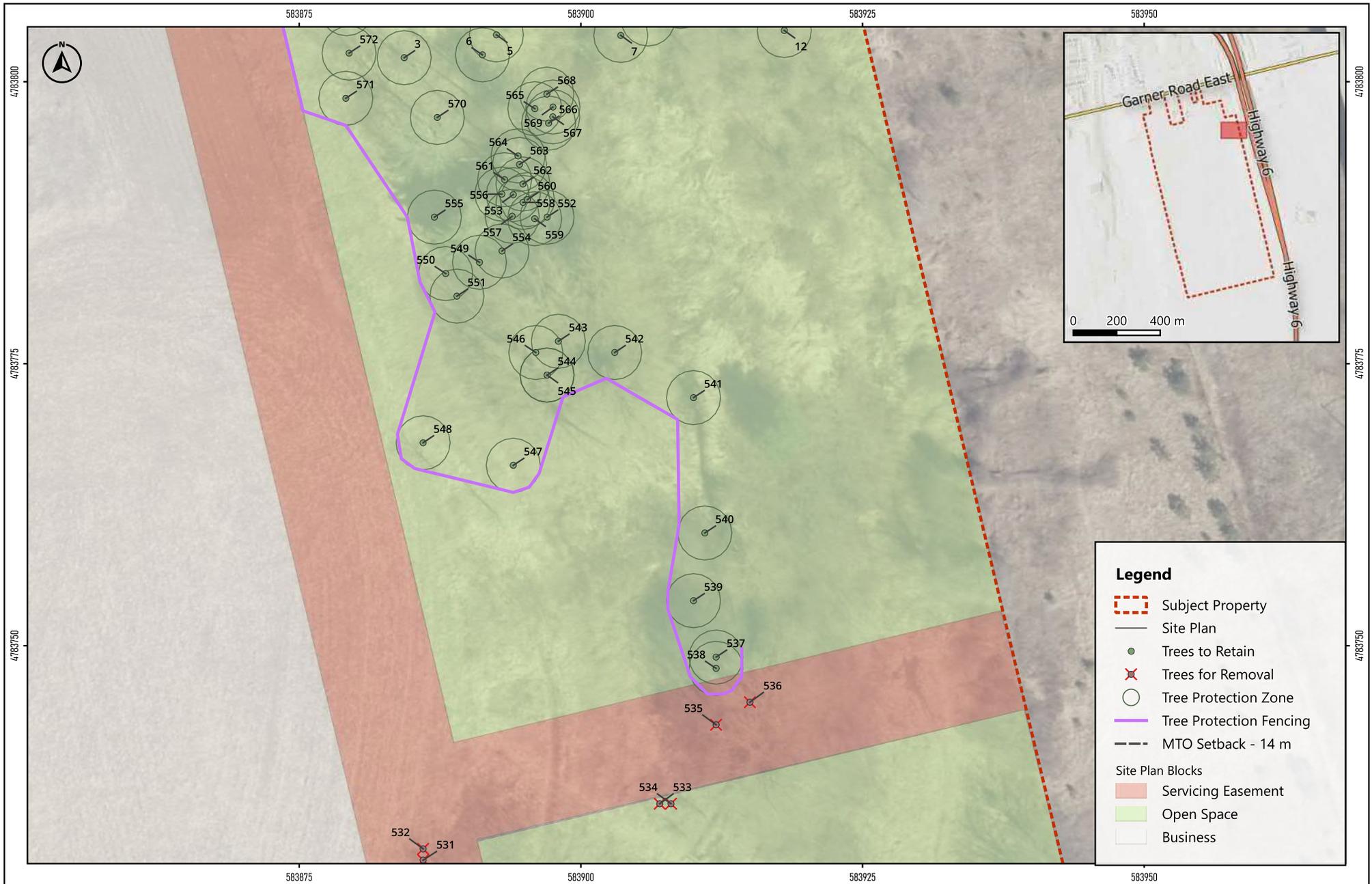
CREATED BY: DH PROJECT NO.: P2020-435
 CHECKED BY: KG DATE: Nov 06, 2025

Map #1e.

Tree Inventory - Map E

**140 Garner Road East
 Environmental Impact Statement**

ONE PROPERTIES



Legend

- Subject Property
- Site Plan
- Trees to Retain
- ✕ Trees for Removal
- Tree Protection Zone
- Tree Protection Fencing
- MTO Setback - 14 m

Site Plan Blocks

- Servicing Easement
- Open Space
- Business



Notes:
 [1] Base imagery: Google
 [2] Inset map layers: Open Street Map (<https://www.openstreetmap.org/copyright>)

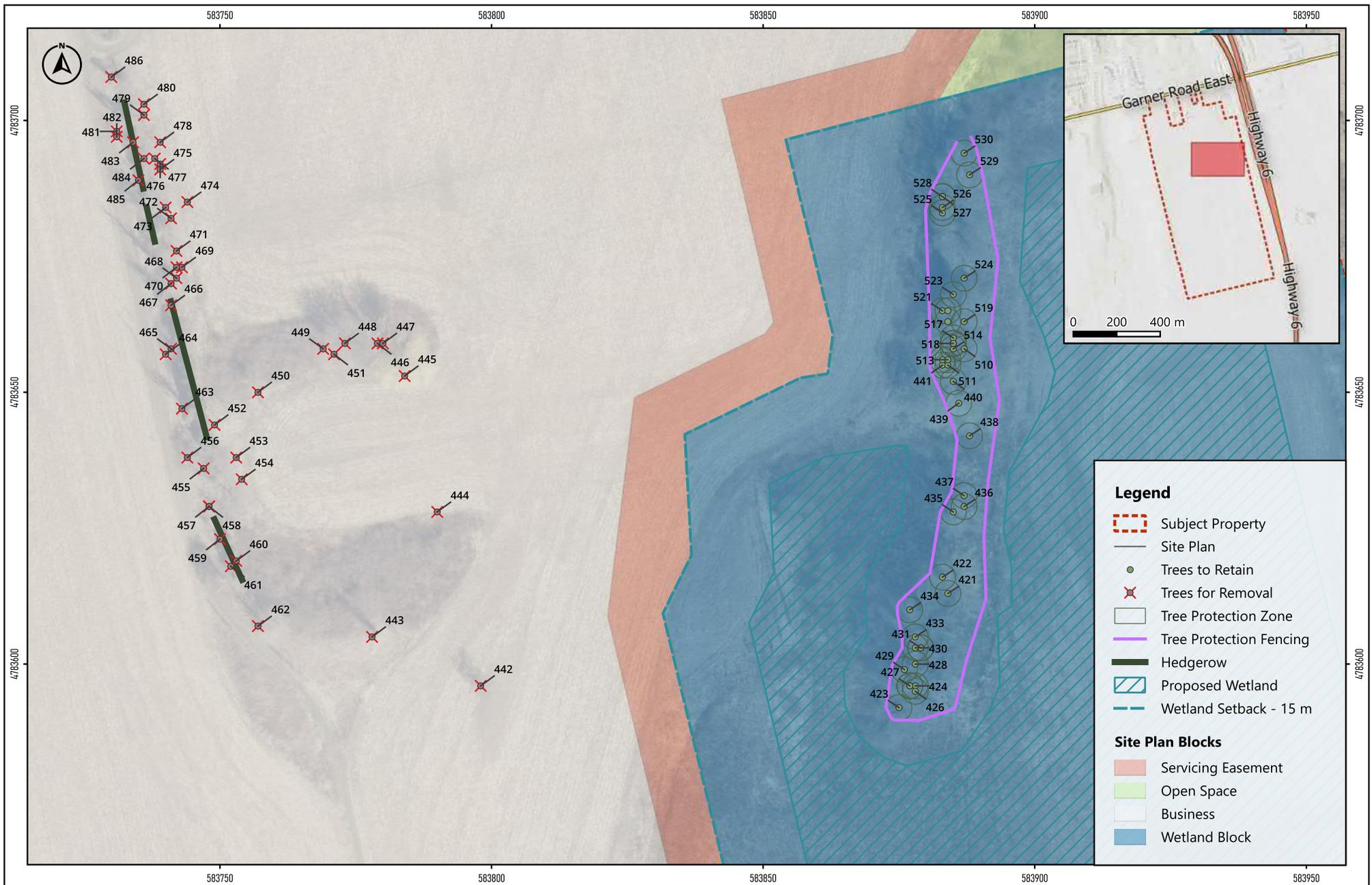


CREATED BY: DH PROJECT NO.: P2020-435
 CHECKED BY: KG DATE: Nov 06, 2025

Map #1f.
 Tree Inventory - Map F

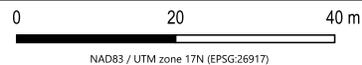
**140 Garner Road East
 Environmental Impact Statement**

ONE PROPERTIES



CREATED BY: DH PROJECT NO.: P2020-435
 CHECKED BY: KG DATE: Nov 06, 2025

Notes:
 [1] Base imagery: Google
 [2] Inset map layers: Open Street Map (<https://www.openstreetmap.org/copyright>)

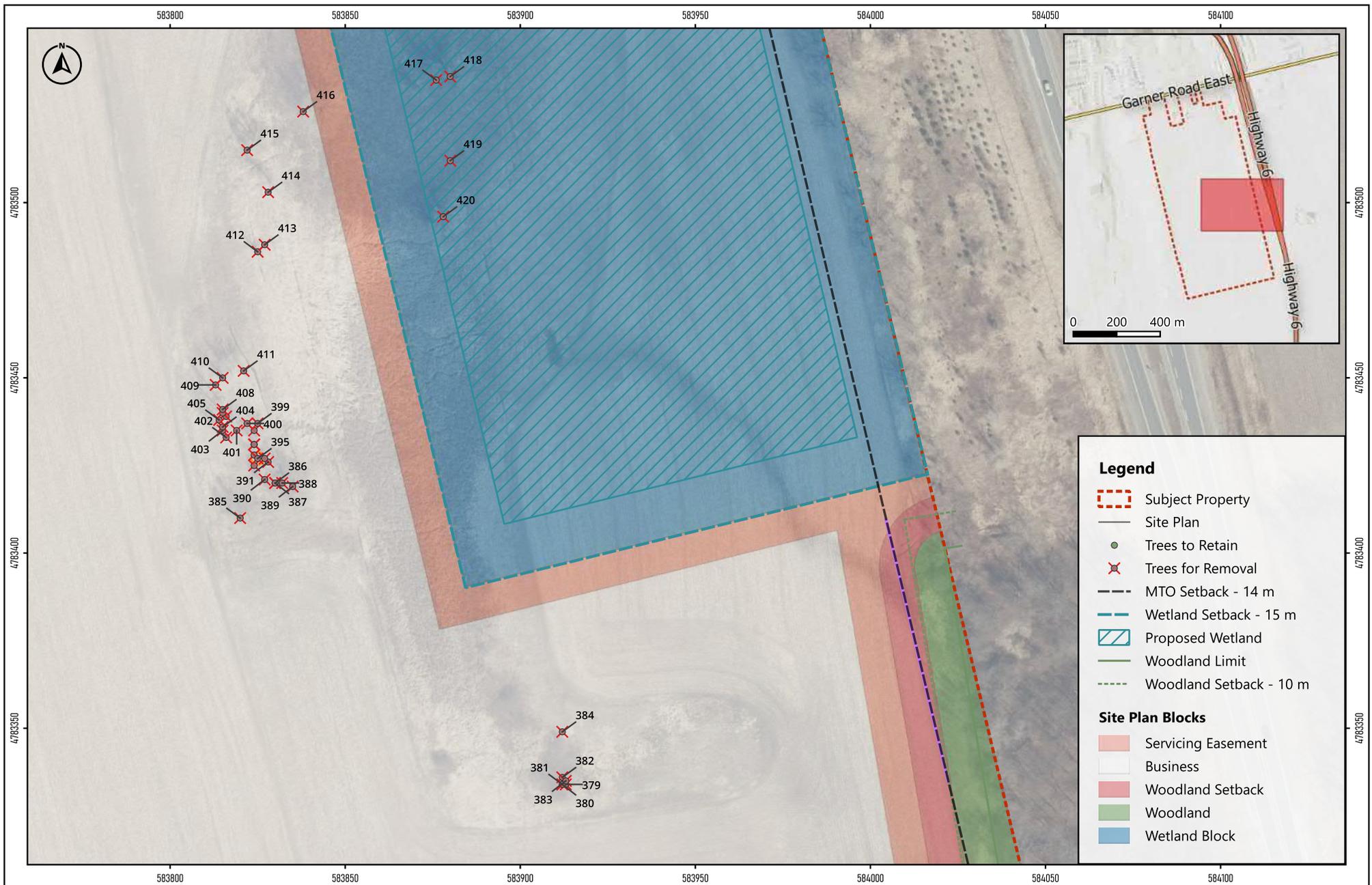


Map #1g.

Tree Inventory - Map G

**140 Garner Road East
 Environmental Impact Statement**

ONE PROPERTIES



Legend

- Subject Property
- Site Plan
- Trees to Retain
- ✕ Trees for Removal
- MTO Setback - 14 m
- Wetland Setback - 15 m
- Proposed Wetland
- Woodland Limit
- Woodland Setback - 10 m

Site Plan Blocks

- Servicing Easement
- Business
- Woodland Setback
- Woodland
- Wetland Block



Notes:
 [1] Base imagery: Google
 [2] Inset map layers: Open Street Map (<https://www.openstreetmap.org/copyright>)

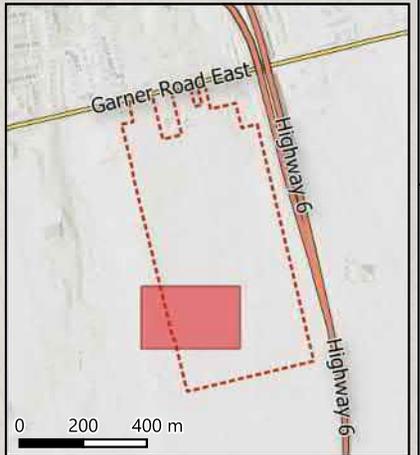


CREATED BY: DH PROJECT NO.: P2020-435
 CHECKED BY: KG DATE: Nov 06, 2025

Map #1h.
 Tree Inventory - Map H

**140 Garner Road East
 Environmental Impact Statement**

ONE PROPERTIES



Legend

- Subject Property
- Site Plan
- Trees to Retain
- ✕ Trees for Removal
- Heritage Tree
- Tree Protection Zone
- Tree Protection Fencing
- Woodland Limit
- Woodland Setback - 10 m

Site Plan Blocks

- Temporary Cul De Sac
- ROW (On Site)
- Business
- ROW Dedication
- Woodland Setback
- Woodland



Notes:
 [1] Base imagery: Google
 [2] Inset map layers: Open Street Map (<https://www.openstreetmap.org/copyright>)



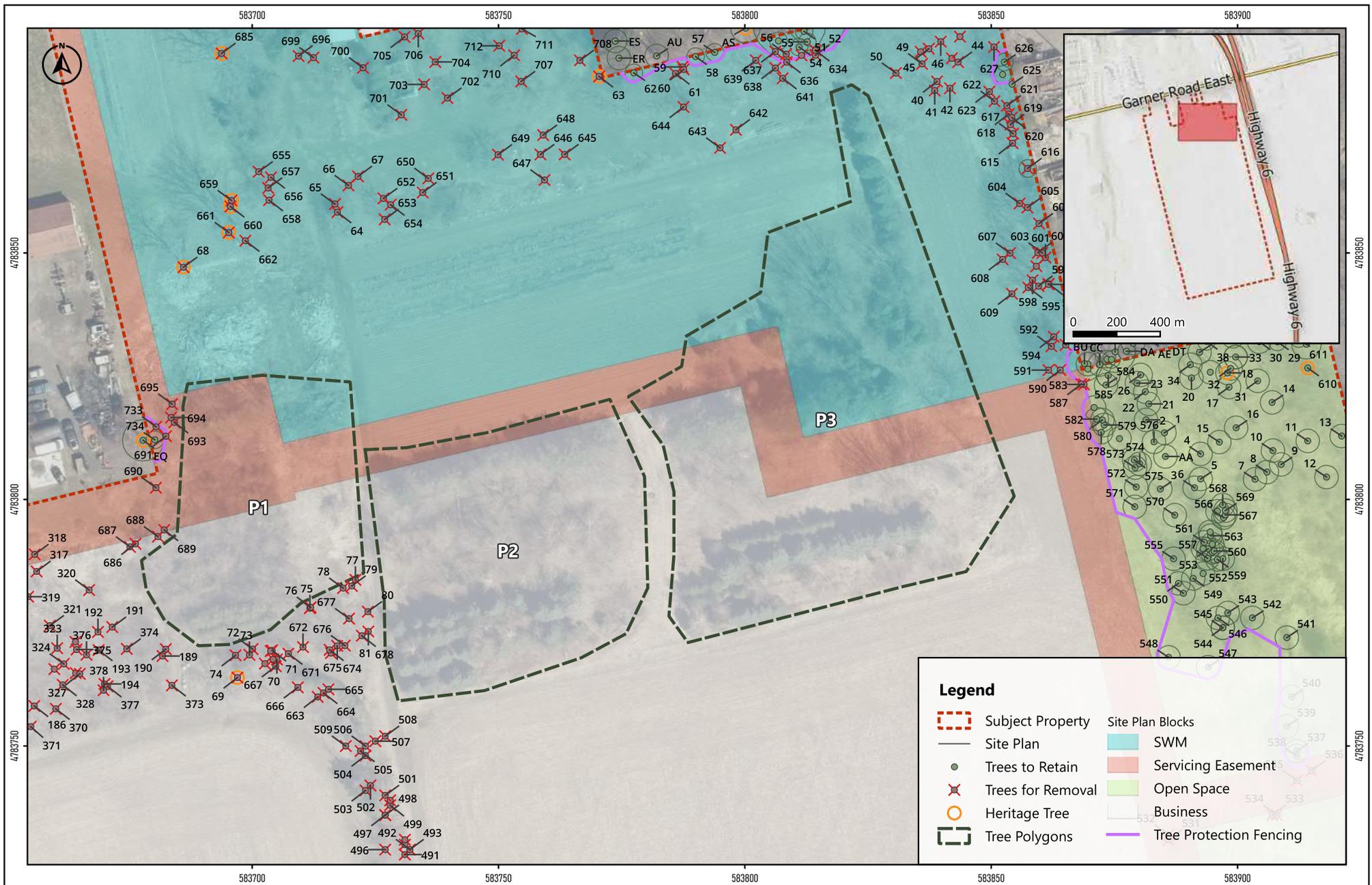
CREATED BY: DH PROJECT NO.: P2020-435
 CHECKED BY: KG DATE: Nov 06, 2025

Map #1i.

Tree Inventory - Map I

**140 Garner Road East
 Environmental Impact Statement**

ONE PROPERTIES



Legend

Subject Property	Site Plan Blocks SWM
Site Plan	Servicing Easement
Trees to Retain	Open Space
Trees for Removal	Business
Heritage Tree	Tree Protection Fencing
Tree Polygons	



Notes:
 [1] Base imagery: Google
 [2] Inset map layers: Open Street Map (<https://www.openstreetmap.org/copyright>)



CREATED BY: DH PROJECT NO.: P2020-435
 CHECKED BY: KG DATE: Nov 06, 2025

Map #1j.
 Tree Inventory - Map J

**140 Garner Road East
 Environmental Impact Statement**

ONE PROPERTIES



Appendix A

Tree Inventory Figure and Tree Inventory Table

Location: 140 Garner Road E, Ancaster

Date: December 23rd, 2020 and January 6th, 8th and 12th, 2021

Surveyor(s): W.B, B.A, M.D

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
1	Black Walnut	<i>Juglans nigra</i>	15.5	Good	Good	Good		x			Private
2	Black Walnut	<i>Juglans nigra</i>	15	Good	Good	Good		x			Private
3	Willow	<i>Salix sp.</i>	125	Fair	Good	Good	Open wound, dead stem, multistem at 2 m	x			Private
4	Black Walnut	<i>Juglans nigra</i>	13.5	Good	Good	Good		x			Private
5	Willow	<i>Salix sp.</i>	13.5	Fair	Good	Good	cracked stem	x			Private
6	Willow	<i>Salix sp.</i>	30	Poor	Good	Good	growing from fallen trunk	x			Private
7	Willow	<i>Salix sp.</i>	12	Fair	Poor	Fair	heavy vines	x			Private
8	Willow	<i>Salix sp.</i>	19	Good	Good	Good		x			Private
9	Black Walnut	<i>Juglans nigra</i>	18.5	Good	Good	Good		x			Private
10	Black Walnut	<i>Juglans nigra</i>	17.5	Good	Good	Good		x			Private
11	Black Walnut	<i>Juglans nigra</i>	12.5	Good	Good	Good	moderate to heavy vines and in nearby trees	x			Private
12	Black Walnut	<i>Juglans nigra</i>	11.5	Good	Good	Fair		x			Private
13	Black Walnut	<i>Juglans nigra</i>	19.5	Good	Good	Good		x			Private
14	Black Walnut	<i>Juglans nigra</i>	29	Good	Good	Good		x			Private
15	Willow	<i>Salix sp.</i>	14	Poor	Good	Good	growing from fallen stem	x			Private
16	Black Walnut	<i>Juglans nigra</i>	28	Good	Good	Good		x			Private
17	Black Walnut	<i>Juglans nigra</i>	35	Good	Good	Good		x			Private
18	Black Walnut	<i>Juglans nigra</i>	45	Good	Good	Good		x			Private
19	Black Walnut	<i>Juglans nigra</i>	44.5	Good	Good	Good		x			Private
20	Black Walnut	<i>Juglans nigra</i>	17	Good	Good	Good		x			Private
21	Black Walnut	<i>Juglans nigra</i>	22	Good	Good	Good		x			Private
22	Black Walnut	<i>Juglans nigra</i>	27.5	Good	Good	Good		x			Private
23	Black Walnut	<i>Juglans nigra</i>	32.5	Fair	Good	Good		x			Private
24	Willow	<i>Salix sp.</i>	30.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
25	Willow	<i>Salix sp.</i>	29.5	Good	Good	Good		x			Private
26	Willow	<i>Salix sp.</i>	33,23	Good	Good	Good		x			Private
27	Silver Maple	<i>Acer saccharinum</i>	13.5	Good	Good	Good		x			Private
28	Silver Maple	<i>Acer saccharinum</i>	18	Good	Good	Good	Beyond fence	x			Private
29	Black Walnut	<i>Juglans nigra</i>	22	Good	Good	Good		x			Private
30	Black Walnut	<i>Juglans nigra</i>	33.5	Good	Good	Good		x			Private
31	Black Walnut	<i>Juglans nigra</i>	32.5	Good	Good	Good		x			Private
32	Black Walnut	<i>Juglans nigra</i>	25.5	Good	Good	Good		x			Private
33	Black Walnut	<i>Juglans nigra</i>	30.5	Good	Good	Good		x			Private
34	Black Cherry	<i>Prunus serotina</i>	27.5			Dead		x			Private
35	Scots Pine	<i>Pinus sylvestris</i>	29.5			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
36	Pine	<i>Pinus sp.</i>	32.5			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
37	Black Cherry	<i>Prunus serotina</i>	15	Good	Good	Good		x			Private
38	Black Cherry	<i>Prunus serotina</i>	23	Poor	Poor	Poor		x			Private
39	Black Cherry	<i>Prunus serotina</i>	36	Good	Good	Good		x			Private
40	Black Locust	<i>Robinia pseudoacacia</i>	23	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
41	Black Locust	<i>Robinia pseudoacacia</i>	15.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
42	Black Locust	<i>Robinia pseudoacacia</i>	13.5 11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
43	Black Locust	<i>Robinia pseudoacacia</i>	21	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
44	Black Locust	<i>Robinia pseudoacacia</i>	21.5,26.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
45	Black Locust	<i>Robinia pseudoacacia</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
46	Black Locust	<i>Robinia pseudoacacia</i>	28.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
47	Black Locust	<i>Robinia pseudoacacia</i>	22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
48	Black Locust	<i>Robinia pseudoacacia</i>	27.5 23.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
49	Black Walnut	<i>Juglans nigra</i>	12.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
50	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
51	Norway Maple	<i>Acer platanoides</i>	23.5	Good	Good	Good		x			Private
52	Norway Maple	<i>Acer platanoides</i>	26 22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
53	Norway Maple	<i>Acer platanoides</i>	24	Good	Good	Good		x			Private
54	Black Cherry	<i>Prunus serotina</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
55	Black Locust	<i>Robinia pseudoacacia</i>	22,20.5	Fair	Fair	Good	loose bark		x	Conflicts from site preparation infrastructure and grading.	Private
56	Scots Pine	<i>Pinus sylvestris</i>	35	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
57	Norway Maple	<i>Acer platanoides</i>	15,15	Good	Good	Good		x			Private
58	Black Walnut	<i>Juglans nigra</i>	12.5	Good	Good	Good		x			Private
59	Norway Maple	<i>Acer platanoides</i>	25,15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
60	Unknown	<i>Unknown</i>	20			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
61	Sugar Maple	<i>Acer saccharum</i>	15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
62	White Birch	<i>Betula papyrifera</i>	25,15	Good	Good	Good		x			Private
63	Black Cherry	<i>Prunus serotina</i>	45	Fair	Good	Good	codominant at dbh		x	Conflicts from site preparation infrastructure and grading.	Private
64	White Spruce	<i>Picea glauca</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
65	Norway Maple	<i>Acer platanoides</i>	22.5,23	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
66	Silver Maple	<i>Acer saccharinum</i>	16.5,15, 13.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
67	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
68	Black Walnut	<i>Juglans nigra</i>	50.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
69	Black Walnut	<i>Juglans nigra</i>	45.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
70	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
71	Tamarack	<i>Larix laricina</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
72	Red Pine	<i>Pinus resinosa</i>	23.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
73	Eastern Redcedar	<i>Juniperus virginiana</i>	15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
74	Pine	<i>Pinus sp.</i>	15			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
75	Black Walnut	<i>Juglans nigra</i>	14.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
76	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
77	Black Walnut	<i>Juglans nigra</i>	11.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
78	Black Walnut	<i>Juglans nigra</i>	23	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
79	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
80	Black Walnut	<i>Juglans nigra</i>	18.5,16.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
81	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
82	Black Walnut	<i>Juglans nigra</i>	57.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
83	Black Walnut	<i>Juglans nigra</i>	52	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
84	Black Walnut	<i>Juglans nigra</i>	40.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
85	Black Walnut	<i>Juglans nigra</i>	22.5	Good	Fair	Fair			x	Conflicts from site preparation infrastructure and grading.	Private
86	Black Cherry	<i>Prunus serotina</i>	53.5	Good	Fair	Good	gypsy moth eggs on bark		x	Conflicts from site preparation infrastructure and grading.	Private
87	Black Walnut	<i>Juglans nigra</i>	37.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
88	Black Walnut	<i>Juglans nigra</i>	41,25	Fair	Good	Good	large open wound on 25 cm		x	Conflicts from site preparation infrastructure and grading.	Private
89	Black Walnut	<i>Juglans nigra</i>	59	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
90	Black Walnut	<i>Juglans nigra</i>	35.5	Good	Good	Fair	heavy vines		x	Conflicts from site preparation infrastructure and grading.	Private
91	Black Walnut	<i>Juglans nigra</i>	16.5	Good	Good	Good	vines		x	Conflicts from site preparation infrastructure and grading.	Private
92	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
93	Black Walnut	<i>Juglans nigra</i>	10.5	Fair	Good	Good	dead stems		x	Conflicts from site preparation infrastructure and grading.	Private
94	Black Walnut	<i>Juglans nigra</i>	24.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
95	Black Walnut	<i>Juglans nigra</i>	35.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
96	Black Walnut	<i>Juglans nigra</i>	34.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
97	Black Walnut	<i>Juglans nigra</i>	42	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
98	Black Walnut	<i>Juglans nigra</i>	22	Good	Fair	Good	vines		x	Conflicts from site preparation infrastructure and grading.	Private
99	Black Walnut	<i>Juglans nigra</i>	31.5	Fair	Fair	Fair	heavy vines		x	Conflicts from site preparation infrastructure and grading.	Private
100	Black Walnut	<i>Juglans nigra</i>	26	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
101	Black Walnut	<i>Juglans nigra</i>	40	Good	Good	Good	vines		x	Conflicts from site preparation infrastructure and grading.	Private
102	Black Walnut	<i>Juglans nigra</i>	12.5	Fair	Fair	Good			x	Conflicts from site preparation infrastructure and grading.	Private
103	Black Walnut	<i>Juglans nigra</i>	54	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
104	Black Walnut	<i>Juglans nigra</i>	37	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
105	Black Walnut	<i>Juglans nigra</i>	36	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
106	Black Walnut	<i>Juglans nigra</i>	29	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
107	Black Walnut	<i>Juglans nigra</i>	22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
108	Black Walnut	<i>Juglans nigra</i>	38	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
109	Black Walnut	<i>Juglans nigra</i>	29	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
110	Butternut Hybrid	<i>Juglans cinerea X</i>	43	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
111	Black Walnut	<i>Juglans nigra</i>	30.5	Fair	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
112	Black Walnut	<i>Juglans nigra</i>	39	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
113	Black Walnut	<i>Juglans nigra</i>	30.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
114	Black Walnut	<i>Juglans nigra</i>	30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
115	Black Walnut	<i>Juglans nigra</i>	31	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
116	Black Walnut	<i>Juglans nigra</i>	41	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
117	Black Walnut	<i>Juglans nigra</i>	47	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
118	Black Walnut	<i>Juglans nigra</i>	30	Fair	Good	Good	vines		x	Conflicts from site preparation infrastructure and grading.	Private
119	Black Walnut	<i>Juglans nigra</i>	26.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
120	Black Walnut	<i>Juglans nigra</i>	20.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
121	Black Walnut	<i>Juglans nigra</i>	46	Fair	Good	Good	dying stem, codominant at 2m		x	Conflicts from site preparation infrastructure and grading.	Private
122	Black Walnut	<i>Juglans nigra</i>	51.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
123	Black Walnut	<i>Juglans nigra</i>	30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
124	Black Walnut	<i>Juglans nigra</i>	31.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
125	Black Walnut	<i>Juglans nigra</i>	42	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
126	Black Walnut	<i>Juglans nigra</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
127	Black Walnut	<i>Juglans nigra</i>	39	Good	Good	Good	hunting perch		x	Conflicts from site preparation infrastructure and grading.	Private
128	Black Walnut	<i>Juglans nigra</i>	42.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
129	Black Walnut	<i>Juglans nigra</i>	23,14	Good	Fair	Good			x	Conflicts from site preparation infrastructure and grading.	Private
130	Black Walnut	<i>Juglans nigra</i>	39.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
131	Black Walnut	<i>Juglans nigra</i>	27	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
132	Black Walnut	<i>Juglans nigra</i>	17	Good	Good	Good	vines		x	Conflicts from site preparation infrastructure and grading.	Private
133	Black Walnut	<i>Juglans nigra</i>	24.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
134	Black Walnut	<i>Juglans nigra</i>	31	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
135	Black Walnut	<i>Juglans nigra</i>	23.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
136	Black Walnut	<i>Juglans nigra</i>	16.5	Good	Fair	Fair			x	Conflicts from site preparation infrastructure and grading.	Private
137	Black Walnut	<i>Juglans nigra</i>	35.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
138	Black Walnut	<i>Juglans nigra</i>	30.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
139	Black Walnut	<i>Juglans nigra</i>	34.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
140	Black Walnut	<i>Juglans nigra</i>	18	Good	Fair	Good			x	Conflicts from site preparation infrastructure and grading.	Private
141	Black Walnut	<i>Juglans nigra</i>	34	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
142	Black Walnut	<i>Juglans nigra</i>	38	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
143	Black Walnut	<i>Juglans nigra</i>	22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
144	Black Walnut	<i>Juglans nigra</i>	29.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
145	Black Walnut	<i>Juglans nigra</i>	31	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
146	Black Walnut	<i>Juglans nigra</i>	28.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
147	Black Walnut	<i>Juglans nigra</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
148	Black Walnut	<i>Juglans nigra</i>	30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
149	Black Walnut	<i>Juglans nigra</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
150	Black Walnut	<i>Juglans nigra</i>	39	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
151	Black Walnut	<i>Juglans nigra</i>	17.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
152	Black Walnut	<i>Juglans nigra</i>	25	Fair	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
153	Black Walnut	<i>Juglans nigra</i>	12	Good	Fair	Good			x	Conflicts from site preparation infrastructure and grading.	Private
154	Black Walnut	<i>Juglans nigra</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
155	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
156	Black Walnut	<i>Juglans nigra</i>	19.5	Good	Good	Good	vines		x	Conflicts from site preparation infrastructure and grading.	Private
157	Black Walnut	<i>Juglans nigra</i>	14.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
158	Black Walnut	<i>Juglans nigra</i>	15.5	Fair	Fair	Fair	lesions		x	Conflicts from site preparation infrastructure and grading.	Private
159	Black Walnut	<i>Juglans nigra</i>	40	Fair	Good	Good	curved trunk		x	Conflicts from site preparation infrastructure and grading.	Private
160	Black Walnut	<i>Juglans nigra</i>	54.5	Good	Good	Good	multistem at dbh, vines		x	Conflicts from site preparation infrastructure and grading.	Private
161	Black Walnut	<i>Juglans nigra</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
162	Black Walnut	<i>Juglans nigra</i>	23	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
163	Black Walnut	<i>Juglans nigra</i>	20.5	Fair	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
164	Black Walnut	<i>Juglans nigra</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
165	Black Walnut	<i>Juglans nigra</i>	23	Fair	Good	Good	vines		x	Conflicts from site preparation infrastructure and grading.	Private
166	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
167	Black Walnut	<i>Juglans nigra</i>	13.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
168	Black Walnut	<i>Juglans nigra</i>	23	Good	Good	Good	vines		x	Conflicts from site preparation infrastructure and grading.	Private
169	Black Walnut	<i>Juglans nigra</i>	16	Fair	Good	Good	vines		x	Conflicts from site preparation infrastructure and grading.	Private
170	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
171	Black Walnut	<i>Juglans nigra</i>	18.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
172	Black Walnut	<i>Juglans nigra</i>	21.5	Fair	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
173	Black Walnut	<i>Juglans nigra</i>	26.5	Fair	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
174	Black Walnut	<i>Juglans nigra</i>	22.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
175	Black Walnut	<i>Juglans nigra</i>	54.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
176	Black Walnut	<i>Juglans nigra</i>	42	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
177	Black Walnut	<i>Juglans nigra</i>	19	Good	Good	Good	vines		x	Conflicts from site preparation infrastructure and grading.	Private
178	Black Walnut	<i>Juglans nigra</i>	17.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
179	Black Walnut	<i>Juglans nigra</i>	18.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
180	Black Walnut	<i>Juglans nigra</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
181	Black Walnut	<i>Juglans nigra</i>	22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
182	Black Walnut	<i>Juglans nigra</i>	14.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
183	Black Walnut	<i>Juglans nigra</i>	19.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
184	Black Walnut	<i>Juglans nigra</i>	36	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
185	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
186	Black Walnut	<i>Juglans nigra</i>	28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
187	Black Walnut	<i>Juglans nigra</i>	28.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
188	Black Walnut	<i>Juglans nigra</i>	26	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
189	Black Walnut	<i>Juglans nigra</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
190	Black Walnut	<i>Juglans nigra</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
191	Black Walnut	<i>Juglans nigra</i>	11.5	Fair	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
192	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
193	Black Walnut	<i>Juglans nigra</i>	12,11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
194	Black Walnut	<i>Juglans nigra</i>	12.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
195	Black Walnut	<i>Juglans nigra</i>	15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
196	Black Walnut	<i>Juglans nigra</i>	26	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
197	Black Walnut	<i>Juglans nigra</i>	33	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
198	Black Walnut	<i>Juglans nigra</i>	23	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
199	Black Walnut	<i>Juglans nigra</i>	40	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
200	Black Walnut	<i>Juglans nigra</i>	24	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
201	Black Walnut	<i>Juglans nigra</i>	28.5,11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
202	Black Walnut	<i>Juglans nigra</i>	28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
203	Black Walnut	<i>Juglans nigra</i>	35	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
204	Black Walnut	<i>Juglans nigra</i>	27	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
205	Black Walnut	<i>Juglans nigra</i>	28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
206	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
207	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
208	Black Walnut	<i>Juglans nigra</i>	12	Good	Poor	Poor	heavy vines		x	Conflicts from site preparation infrastructure and grading.	Private
209	Black Walnut	<i>Juglans nigra</i>	40	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
210	Black Walnut	<i>Juglans nigra</i>	17.5	Good	Good	Poor			x	Conflicts from site preparation infrastructure and grading.	Private
211	Black Walnut	<i>Juglans nigra</i>	28.5	Good	Fair	Fair			x	Conflicts from site preparation infrastructure and grading.	Private
212	Black Walnut	<i>Juglans nigra</i>	33.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
213	Black Walnut	<i>Juglans nigra</i>	31	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
214	Black Cherry	<i>Prunus serotina</i>	7x20-34	Good	Good	Good	gypsy moth eggs on bark		x	Conflicts from site preparation infrastructure and grading.	Private
215	Black Walnut	<i>Juglans nigra</i>	24	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
216	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
217	Black Walnut	<i>Juglans nigra</i>	35.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
218	Black Walnut	<i>Juglans nigra</i>	45,30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
219	Black Walnut	<i>Juglans nigra</i>	43	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
220	Black Walnut	<i>Juglans nigra</i>	27	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
221	Black Walnut	<i>Juglans nigra</i>	14	Good	Fair	Fair			x	Conflicts from site preparation infrastructure and grading.	Private
222	Black Walnut	<i>Juglans nigra</i>	35.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
223	Black Walnut	<i>Juglans nigra</i>	23.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
224	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
225	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
226	Black Walnut	<i>Juglans nigra</i>	13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
227	Black Walnut	<i>Juglans nigra</i>	10			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
228	Black Walnut	<i>Juglans nigra</i>	29.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
229	Black Walnut	<i>Juglans nigra</i>	21.5	Good	Good	Good	crown branches lean out of forest edge		x	Conflicts from site preparation infrastructure and grading.	Private
230	Black Walnut	<i>Juglans nigra</i>	16.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
231	Black Walnut	<i>Juglans nigra</i>	26	Good	Good	Good	cracked branch, lean out of forest edge		x	Conflicts from site preparation infrastructure and grading.	Private
232	Black Walnut	<i>Juglans nigra</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
233	Black Walnut	<i>Juglans nigra</i>	17.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
234	Black Walnut	<i>Juglans nigra</i>	11.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
235	Black Walnut	<i>Juglans nigra</i>	32	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
236	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
237	Black Walnut	<i>Juglans nigra</i>	10.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
238	Black Walnut	<i>Juglans nigra</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
239	Black Walnut	<i>Juglans nigra</i>	17.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
240	Black Walnut	<i>Juglans nigra</i>	36	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
241	Black Walnut	<i>Juglans nigra</i>	25	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
242	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
243	Black Walnut	<i>Juglans nigra</i>	30.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
244	Black Walnut	<i>Juglans nigra</i>	10			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
245	Black Walnut	<i>Juglans nigra</i>	11			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
246	Black Walnut	<i>Juglans nigra</i>	29	Fair	Good	Good	crack at trunk base		x	Conflicts from site preparation infrastructure and grading.	Private
247	Black Walnut	<i>Juglans nigra</i>	28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
248	Black Walnut	<i>Juglans nigra</i>	24	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
249	Black Walnut	<i>Juglans nigra</i>	28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
250	Black Walnut	<i>Juglans nigra</i>	22	Fair	Good	Good	healed wound at base		x	Conflicts from site preparation infrastructure and grading.	Private
251	Black Walnut	<i>Juglans nigra</i>	25	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
252	Black Walnut	<i>Juglans nigra</i>	17.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
253	Black Walnut	<i>Juglans nigra</i>	15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
254	Black Walnut	<i>Juglans nigra</i>	20	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
255	Black Walnut	<i>Juglans nigra</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
256	Black Walnut	<i>Juglans nigra</i>	26	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
257	Black Walnut	<i>Juglans nigra</i>	28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
258	Black Walnut	<i>Juglans nigra</i>	17	Good	Fair	Good			x	Conflicts from site preparation infrastructure and grading.	Private
259	Black Walnut	<i>Juglans nigra</i>	15.5	Fair	Good	Good	dead side trunk		x	Conflicts from site preparation infrastructure and grading.	Private
260	Black Walnut	<i>Juglans nigra</i>	29	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
261	Black Walnut	<i>Juglans nigra</i>	27	Fair	Good	Good	cracked bark at base		x	Conflicts from site preparation infrastructure and grading.	Private
262	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
263	Black Walnut	<i>Juglans nigra</i>	30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
264	Black Walnut	<i>Juglans nigra</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
265	Black Walnut	<i>Juglans nigra</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
266	Black Walnut	<i>Juglans nigra</i>	19.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
267	Black Walnut	<i>Juglans nigra</i>	22.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
268	Black Walnut	<i>Juglans nigra</i>	26.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
269	Black Walnut	<i>Juglans nigra</i>	12.5,14.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
270	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
271	Black Walnut	<i>Juglans nigra</i>	24.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
272	Black Walnut	<i>Juglans nigra</i>	23	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
273	Black Walnut	<i>Juglans nigra</i>	20.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
274	Black Walnut	<i>Juglans nigra</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
275	Black Walnut	<i>Juglans nigra</i>	26	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
276	Black Walnut	<i>Juglans nigra</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
277	Black Cherry	<i>Prunus serotina</i>	78	Poor	Good	Fair			x	Conflicts from site preparation infrastructure and grading.	Private
278	Black Walnut	<i>Juglans nigra</i>	58	Poor	Poor	Poor			x	Conflicts from site preparation infrastructure and grading.	Private
279	Black Walnut	<i>Juglans nigra</i>	25.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
280	Black Walnut	<i>Juglans nigra</i>	29	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
281	Black Walnut	<i>Juglans nigra</i>	26	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
282	Black Walnut	<i>Juglans nigra</i>	51.5	Poor	Fair	Fair			x	Conflicts from site preparation infrastructure and grading.	Private
283	Sugar Maple	<i>Acer saccharum</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
284	Black Walnut	<i>Juglans nigra</i>	28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
285	Black Walnut	<i>Juglans nigra</i>	34	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
286	Black Walnut	<i>Juglans nigra</i>	19.3	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
287	Black Walnut	<i>Juglans nigra</i>	12.6	Good	Fair	Good	2 small dead stems		x	Conflicts from site preparation infrastructure and grading.	Private
288	Black Walnut	<i>Juglans nigra</i>	33	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
289	Black Walnut	<i>Juglans nigra</i>	38.7	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
290	Black Walnut	<i>Juglans nigra</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
291	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Fair			x	Conflicts from site preparation infrastructure and grading.	Private
292	Black Walnut	<i>Juglans nigra</i>	11.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
293	Black Walnut	<i>Juglans nigra</i>	43.5	Good	Fair	Good	some crown dieback		x	Conflicts from site preparation infrastructure and grading.	Private
294	Black Walnut	<i>Juglans nigra</i>	35	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
295	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
296	Black Walnut	<i>Juglans nigra</i>	27	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
297	Black Walnut	<i>Juglans nigra</i>	25,30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
298	Black Walnut	<i>Juglans nigra</i>	30	Good	Fair	Good			x	Conflicts from site preparation infrastructure and grading.	Private
299	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Fair	vines		x	Conflicts from site preparation infrastructure and grading.	Private
300	Black Walnut	<i>Juglans nigra</i>	22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
301	Black Walnut	<i>Juglans nigra</i>	26,32	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
302	Black Walnut	<i>Juglans nigra</i>	65	Good	Good	Good	built structure attached		x	Conflicts from site preparation infrastructure and grading.	Private
303	Black Walnut	<i>Juglans nigra</i>	45	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
304	Black Walnut	<i>Juglans nigra</i>	45	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
305	Black Walnut	<i>Juglans nigra</i>	55	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
306	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
307	Black Walnut	<i>Juglans nigra</i>	32.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
308	Black Walnut	<i>Juglans nigra</i>	17.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
309	Black Walnut	<i>Juglans nigra</i>	45	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
310	Black Walnut	<i>Juglans nigra</i>	15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
311	Black Walnut	<i>Juglans nigra</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
312	Black Walnut	<i>Juglans nigra</i>	19.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
313	Black Walnut	<i>Juglans nigra</i>	12.2	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
314	Black Walnut	<i>Juglans nigra</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
315	Black Walnut	<i>Juglans nigra</i>	13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
316	Black Walnut	<i>Juglans nigra</i>	16	Good	Poor	Poor	top pruned off		x	Conflicts from site preparation infrastructure and grading.	Private
317	Black Walnut	<i>Juglans nigra</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
318	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
319	Trembling aspen	<i>Populus tremuloides</i>	17.5	Fair	Fair	Good	almost 90 degree lean		x	Conflicts from site preparation infrastructure and grading.	Private
320	Black Walnut	<i>Juglans nigra</i>	17,10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
321	Black Walnut	<i>Juglans nigra</i>	29	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
322	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
323	Black Walnut	<i>Juglans nigra</i>	13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
324	Black Walnut	<i>Juglans nigra</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
325	Black Walnut	<i>Juglans nigra</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
326	Black Walnut	<i>Juglans nigra</i>	15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
327	Black Walnut	<i>Juglans nigra</i>	11.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
328	Black Walnut	<i>Juglans nigra</i>	20	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
329	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
330	Black Walnut	<i>Juglans nigra</i>	30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
331	Black Walnut	<i>Juglans nigra</i>	26	Good	Fair	Good	dead branch		x	Conflicts from site preparation infrastructure and grading.	Private
332	Black Walnut	<i>Juglans nigra</i>	15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
333	Black Walnut	<i>Juglans nigra</i>	34	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
334	Black Walnut	<i>Juglans nigra</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
335	Black Walnut	<i>Juglans nigra</i>	13.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
336	Black Walnut	<i>Juglans nigra</i>	27	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
337	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
338	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
339	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
340	Black Walnut	<i>Juglans nigra</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
341	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
342	Black Walnut	<i>Juglans nigra</i>	25	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
343	Black Walnut	<i>Juglans nigra</i>	24.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
344	Black Walnut	<i>Juglans nigra</i>	15	Good	Good	Good	moderate vines		x	Conflicts from site preparation infrastructure and grading.	Private
345	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
346	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
347	Black Walnut	<i>Juglans nigra</i>	30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
348	Black Walnut	<i>Juglans nigra</i>	21	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
349	Black Walnut	<i>Juglans nigra</i>	24.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
350	Black Walnut	<i>Juglans nigra</i>	18	Good	Fair	Fair	competing		x	Conflicts from site preparation infrastructure and grading.	Private
351	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
352	Black Walnut	<i>Juglans nigra</i>	44	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
353	Black Walnut	<i>Juglans nigra</i>	15.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
354	Black Walnut	<i>Juglans nigra</i>	18.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
355	Black Walnut	<i>Juglans nigra</i>	24	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
356	Black Walnut	<i>Juglans nigra</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
357	Black Walnut	<i>Juglans nigra</i>	28.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
358	Black Walnut	<i>Juglans nigra</i>	13.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
359	Black Walnut	<i>Juglans nigra</i>	12.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
360	Black Walnut	<i>Juglans nigra</i>	10.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
361	Black Walnut	<i>Juglans nigra</i>	29	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
362	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
363	Black Walnut	<i>Juglans nigra</i>	19.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
364	Black Walnut	<i>Juglans nigra</i>	13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
365	Black Walnut	<i>Juglans nigra</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
366	Black Walnut	<i>Juglans nigra</i>	15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
367	Black Walnut	<i>Juglans nigra</i>	40	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
368	Black Walnut	<i>Juglans nigra</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
369	Black Walnut	<i>Juglans nigra</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
370	Black Walnut	<i>Juglans nigra</i>	15.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
371	Black Walnut	<i>Juglans nigra</i>	25	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
372	Black Walnut	<i>Juglans nigra</i>	17.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
373	Black Walnut	<i>Juglans nigra</i>	10,11,14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
374	Black Walnut	<i>Juglans nigra</i>	3x5-15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
375	Black Walnut	<i>Juglans nigra</i>	21,18.5	Good	Good	Good	competing		x	Conflicts from site preparation infrastructure and grading.	Private
376	Black Walnut	<i>Juglans nigra</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
377	Black Walnut	<i>Juglans nigra</i>	23	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
378	Black Walnut	<i>Juglans nigra</i>	13	Fair	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
379	Willow	<i>Salix sp.</i>	13.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
380	Willow	<i>Salix sp.</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
381	Willow	<i>Salix sp.</i>	24.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
382	Willow	<i>Salix sp.</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
383	Willow	<i>Salix sp.</i>	32.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
384	Willow	<i>Salix sp.</i>	4x10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
385	Willow	<i>Salix sp.</i>	9x10-30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
386	Willow	<i>Salix sp.</i>	33	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
387	Willow	<i>Salix sp.</i>	71	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
388	Willow	<i>Salix sp.</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
389	Willow	<i>Salix sp.</i>	4x24-50	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
390	Willow	<i>Salix sp.</i>	13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
391	Willow	<i>Salix sp.</i>	10.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
392	Willow	<i>Salix sp.</i>	11,13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
393	Willow	<i>Salix sp.</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
394	Eastern Cottonwood	<i>Populus deltoides</i>	30.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
395	Eastern Cottonwood	<i>Populus deltoides</i>	49	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
396	Willow	<i>Salix sp.</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
397	Willow	<i>Salix sp.</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
398	Eastern Cottonwood	<i>Populus deltoides</i>	42	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
399	Willow	<i>Salix sp.</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
400	Willow	<i>Salix sp.</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
401	Willow	<i>Salix sp.</i>	11.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
402	Eastern Cottonwood	<i>Populus deltoides</i>	34	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
403	Eastern Cottonwood	<i>Populus deltoides</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
404	Eastern Cottonwood	<i>Populus deltoides</i>	44	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
405	Eastern Cottonwood	<i>Populus deltoides</i>	24.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
406	Eastern Cottonwood	<i>Populus deltoides</i>	32.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
407	Eastern Cottonwood	<i>Populus deltoides</i>	37.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
408	Eastern Cottonwood	<i>Populus deltoides</i>	40.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
409	Eastern Cottonwood	<i>Populus deltoides</i>	43.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
410	Eastern Cottonwood	<i>Populus deltoides</i>	27.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
411	Willow	<i>Salix sp.</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
412	Willow	<i>Salix sp.</i>	5x10-25	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
413	Eastern Cottonwood	<i>Populus deltoides</i>	35.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
414	Eastern Cottonwood	<i>Populus deltoides</i>	35,55	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
415	Willow	<i>Salix sp.</i>	80	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
416	Willow	<i>Salix sp.</i>	300	Good	Good	Good	multi-stem, 10 plus stems above dbh		x	Conflicts from site preparation infrastructure and grading.	Private
417	Willow	<i>Salix sp.</i>	5x20.5-100	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
418	Willow	<i>Salix sp.</i>	24	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
419	Willow	<i>Salix sp.</i>	20	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
420	Willow	<i>Salix sp.</i>	6x28-50	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
421	Willow	<i>Salix sp.</i>	28,25.5	Good	Good	Good		x			Private
422	Willow	<i>Salix sp.</i>	95	Good	Good	Good		x			Private
423	Willow	<i>Salix sp.</i>	33	Good	Good	Good		x			Private
424	Willow	<i>Salix sp.</i>	10	Good	Good	Good		x			Private
425	Willow	<i>Salix sp.</i>	3x15-24.5	Good	Good	Good		x			Private
426	Willow	<i>Salix sp.</i>	26	Good	Good	Good		x			Private
427	Willow	<i>Salix sp.</i>	3x12-30	Good	Good	Good		x			Private
428	Willow	<i>Salix sp.</i>	4x30-50	Good	Good	Good		x			Private
429	Willow	<i>Salix sp.</i>	29	Good	Good	Good		x			Private
430	Willow	<i>Salix sp.</i>	14	Good	Good	Good		x			Private
431	Willow	<i>Salix sp.</i>	24	Good	Good	Good		x			Private
432	Willow	<i>Salix sp.</i>	25	Good	Good	Good		x			Private
433	Willow	<i>Salix sp.</i>	33	Good	Good	Good		x			Private
434	Willow	<i>Salix sp.</i>	70,80	Good	Good	Good		x			Private
435	Willow	<i>Salix sp.</i>	4x30-50	Good	Good	Good		x			Private
436	Willow	<i>Salix sp.</i>	17	Good	Good	Good		x			Private
437	Willow	<i>Salix sp.</i>	26,28	Good	Good	Good		x			Private
438	Willow	<i>Salix sp.</i>	18	Fair	Good	Good	middle stem dead	x			Private
439	Willow	<i>Salix sp.</i>	25,40	Good	Good	Good		x			Private
440	Willow	<i>Salix sp.</i>	3x15-25	Good	Good	Good		x			Private
441	Willow	<i>Salix sp.</i>	70	Poor	Fair	Fair	hole at base and broken stems	x			Private
442	White Birch	<i>Betula papyrifera</i>	13.5,14,14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
443	Unknown	<i>Unknown</i>	50			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
444	Unknown	<i>Unknown</i>	18	Good	Good	Good	Estimate, trunk inaccessible		x	Conflicts from site preparation infrastructure and grading.	Private
445	Willow	<i>Salix sp.</i>	4x20-65	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
446	Willow	<i>Salix sp.</i>	8x23-30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
447	White Birch	<i>Betula papyrifera</i>	30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
448	Silver Maple	<i>Acer saccharinum</i>	15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
449	Red Oak	<i>Quercus rubra</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
450	Willow	<i>Salix sp.</i>	15,20	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
451	Norway Maple	<i>Acer platanoides</i>	11x12-29	Good	Good	Good	multistem and built tree house		x	Conflicts from site preparation infrastructure and grading.	Private
452	Black Walnut	<i>Juglans nigra</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
453	Black Walnut	<i>Juglans nigra</i>	22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
454	Black Walnut	<i>Juglans nigra</i>	28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
455	White Birch	<i>Betula papyrifera</i>	22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
456	Manitoba Maple	<i>Acer negundo</i>	24	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
457	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
458	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
459	Black Walnut	<i>Juglans nigra</i>	11.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
460	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
461	White Birch	<i>Betula papyrifera</i>	32	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
462	Manitoba Maple	<i>Acer negundo</i>	3x20	Fair	Good	Good	fallen log on trunk		x	Conflicts from site preparation infrastructure and grading.	Private
463	Unknown	<i>Unknown</i>	20,28			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
464	Red Maple	<i>Acer rubrum</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
465	Black Walnut	<i>Juglans nigra</i>	11.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
466	Unknown	<i>Unknown</i>	34			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
467	Manitoba Maple	<i>Acer negundo</i>	15,15,16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
468	Unknown	<i>Unknown</i>	28			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
469	Black Walnut	<i>Juglans nigra</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
470	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
471	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
472	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
473	Black Cherry	<i>Prunus serotina</i>	14,25	Good	Good	Fair	Heavy grape vine		x	Conflicts from site preparation infrastructure and grading.	Private
474	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
475	Black Walnut	<i>Juglans nigra</i>	13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
476	Black Walnut	<i>Juglans nigra</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
477	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
478	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
479	Black Walnut	<i>Juglans nigra</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
480	Black Walnut	<i>Juglans nigra</i>	17.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
481	Black Walnut	<i>Juglans nigra</i>	11.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
482	Black Walnut	<i>Juglans nigra</i>	12.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
483	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
484	Black Walnut	<i>Juglans nigra</i>	12.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
485	Black Walnut	<i>Juglans nigra</i>	14,13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
486	Unknown	<i>Unknown</i>	27			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
487	Unknown	<i>Unknown</i>	20,26			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
488	Eastern White Cedar	<i>Thuja occidentalis</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
489	Norway Maple	<i>Acer platanoides</i>	20	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
490	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
491	Black Walnut	<i>Juglans nigra</i>	10	Fair	Fair	Fair			x	Conflicts from site preparation infrastructure and grading.	Private
492	Black Walnut	<i>Juglans nigra</i>	13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
493	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
494	Black Walnut	<i>Juglans nigra</i>	10,13.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
495	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
496	Black Walnut	<i>Juglans nigra</i>	30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
497	Black Pine	<i>Pinus nigra</i>	22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
498	Black Cherry	<i>Prunus serotina</i>	12,13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
499	Black Pine	<i>Pinus nigra</i>	34	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
500	Black Pine	<i>Pinus nigra</i>	33	Good	Good	Good	tree house		x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
501	Black Pine	<i>Pinus nigra</i>	21	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
502	Black Walnut	<i>Juglans nigra</i>	28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
503	Black Cherry	<i>Prunus serotina</i>	14.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
504	Whitw Spruce	<i>Picea glauca</i>	23	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
505	Black Walnut	<i>Juglans nigra</i>	24	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
506	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
507	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
508	Black Walnut	<i>Juglans nigra</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
509	Black Walnut	<i>Juglans nigra</i>	23	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
510	Willow	<i>Salix sp.</i>	23.5,21	Good	Fair	Fair	multi-stem, 1 broken	x			Private
511	Willow	<i>Salix sp.</i>	35,50	Poor	Fair	Fair	1 stem broken	x			Private
512	Willow	<i>Salix sp.</i>	60	Poor	Poor	Poor	broken and leaning on ground	x			Private
513	Willow	<i>Salix sp.</i>	11.5	Good	Good	Good		x			Private
514	Willow	<i>Salix sp.</i>	44	Good	Good	Good		x			Private
515	Willow	<i>Salix sp.</i>	15			Dead		x			Private
516	Willow	<i>Salix sp.</i>	30	Good	Good	Good		x			Private
517	Willow	<i>Salix sp.</i>	27,29	Good	Good	Good		x			Private
518	Willow	<i>Salix sp.</i>	29,25,18	Good	Good	Good		x			Private
519	Willow	<i>Salix sp.</i>	13.5,18	Good	Fair	Good		x			Private
520	Willow	<i>Salix sp.</i>	12,25			Dead		x			Private
521	Willow	<i>Salix sp.</i>	30	Good	Good	Good		x			Private
522	Willow	<i>Salix sp.</i>	33,25	Good	Good	Good	25 dbh stem broken	x			Private
523	Willow	<i>Salix sp.</i>	9x25-30	Good	Good	Good		x			Private
524	Willow	<i>Salix sp.</i>	27	Good	Good	Good		x			Private
525	Willow	<i>Salix sp.</i>	12x10-25	Good	Good	Good		x			Private
526	Willow	<i>Salix sp.</i>	5x10-25	Good	Good	Good	1 stem broken	x			Private
527	Willow	<i>Salix sp.</i>	4x14-20	Fair	Good	Good		x			Private
528	Willow	<i>Salix sp.</i>	10x11-25	Good	Good	Good		x			Private
529	Willow	<i>Salix sp.</i>	120	Good	Good	Good		x			Private
530	Willow	<i>Salix sp.</i>	31,27,26	Good	Good	Good		x			Private
531	Willow	<i>Salix sp.</i>	12,14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
532	Red Oak	<i>Quercus rubra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
533	Willow	<i>Salix sp.</i>	15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
534	Willow	<i>Salix sp.</i>	19.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
535	Willow	<i>Salix sp.</i>	15x10-30	Good	Good	Good	multi-stem, two trees combined at base.		x	Conflicts from site preparation infrastructure and grading.	Private
536	Willow	<i>Salix sp.</i>	24,18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
537	Willow	<i>Salix sp.</i>	17,20	Good	Good	Good		x			Private
538	Willow	<i>Salix sp.</i>	15	Good	Good	Good		x			Private
539	Willow	<i>Salix sp.</i>	16x12-26	Good	Good	Good		x			Private
540	Apple	<i>Malus sp.</i>	5x10-16	Good	Good	Good		x			Private
541	Willow	<i>Salix sp.</i>	39	Good	Good	Good		x			Private
542	Black Pine	<i>Pinus nigra</i>	27	Good	Good	Good		x			Private
543	Willow	<i>Salix sp.</i>	9x14-40.5	Good	Good	Good		x			Private
544	Willow	<i>Salix sp.</i>	6x10-21	Good	Good	Good		x			Private
545	Willow	<i>Salix sp.</i>	4x17-28	Good	Good	Good		x			Private
546	Willow	<i>Salix sp.</i>	6x12-25	Good	Good	Good		x			Private
547	Willow	<i>Salix sp.</i>	5x11.5-22	Good	Good	Good		x			Private
548	Black Walnut	<i>Juglans nigra</i>	20	Good	Good	Good		x			Private
549	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good		x			Private
550	Willow	<i>Salix sp.</i>	58,45	Good	Good	Good		x			Private
551	Black Walnut	<i>Juglans nigra</i>	12	Good	Good	Good		x			Private
552	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good		x			Private
553	Willow	<i>Salix sp.</i>	29			Dead		x			Private
554	Yew	<i>Taxus sp.</i>	10	Good	Good	Good		x			Private
555	White Spruce	<i>Picea glauca</i>	24	Good	Good	Good		x			Private
556	Yew	<i>Taxus sp.</i>	22	Good	Good	Good		x			Private
557	Unknown	<i>Unknown</i>	20			Dead		x			Private
558	Unknown	<i>Unknown</i>	17			Dead		x			Private
559	Willow	<i>Salix sp.</i>	34	Good	Good	Good		x			Private
560	Willow	<i>Salix sp.</i>	4x24-33.5	Good	Good	Good		x			Private
561	Willow	<i>Salix sp.</i>	24			Dead		x			Private
562	Willow	<i>Salix sp.</i>	30			Dead		x			Private
563	Willow	<i>Salix sp.</i>	38	Good	Good	Good		x			Private
564	Willow	<i>Salix sp.</i>	28	Good	Good	Good		x			Private
565	Willow	<i>Salix sp.</i>	28	Good	Good	Good		x			Private
566	Willow	<i>Salix sp.</i>	35	Good	Good	Good		x			Private
567	Willow	<i>Salix sp.</i>	13.5	Good	Good	Good		x			Private
568	Willow	<i>Salix sp.</i>	36	Good	Good	Good		x			Private
569	Willow	<i>Salix sp.</i>	38	Good	Good	Good		x			Private
570	Black Walnut	<i>Juglans nigra</i>	38	Good	Good	Good		x			Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
571	Willow	<i>Salix sp.</i>	10			Dead		x			Private
572	Willow	<i>Salix sp.</i>	10,11	Good	Good	Good		x			Private
573	Black Walnut	<i>Juglans nigra</i>	20	Good	Good	Good		x			Private
574	Black Walnut	<i>Juglans nigra</i>	26	Good	Good	Good		x			Private
575	Willow	<i>Salix sp.</i>	10	Fair	Good	Good		x			Private
576	Black Walnut	<i>Juglans nigra</i>	21	Good	Good	Good		x			Private
577	Willow	<i>Salix sp.</i>	10,11,13	Good	Good	Good		x			Private
578	Willow	<i>Salix sp.</i>	11,12	Good	Good	Good		x			Private
579	Willow	<i>Salix sp.</i>	4x10-14.5	Good	Good	Good		x			Private
580	Willow	<i>Salix sp.</i>	12.5,10	Good	Good	Good		x			Private
581	Black Walnut	<i>Juglans nigra</i>	12.5	Good	Good	Good		x			Private
582	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good		x			Private
583	Willow	<i>Salix sp.</i>	14,22	Good	Good	Good		x			Private
584	Willow	<i>Salix sp.</i>	31	Good	Good	Good		x			Private
585	Willow	<i>Salix sp.</i>	30	Good	Good	Good		x			Private
586	Willow	<i>Salix sp.</i>	14.5,26	Good	Good	Good		x			Private
587	Willow	<i>Salix sp.</i>	14,28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
588	Willow	<i>Salix sp.</i>	34	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
589	Willow	<i>Salix sp.</i>	60	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
590	Willow	<i>Salix sp.</i>	26,22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
591	Willow	<i>Salix sp.</i>	22			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
592	Willow	<i>Salix sp.</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
593	Willow	<i>Salix sp.</i>	21	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
594	Black Walnut	<i>Juglans nigra</i>	22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
595	Willow	<i>Salix sp.</i>	26	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
596	Willow	<i>Salix sp.</i>	10,30	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
597	Red Oak	<i>Quercus rubra</i>	32,28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
598	Willow	<i>Salix sp.</i>	11.5,13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
599	Willow	<i>Salix sp.</i>	32	Good	Good	Fair	epicormic branching		x	Conflicts from site preparation infrastructure and grading.	Private
600	Red Maple	<i>Acer rubrum</i>	39	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
601	Willow	<i>Salix sp.</i>	35	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
602	Willow	<i>Salix sp.</i>	31			Dead	epicormic branching		x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
603	Willow	<i>Salix sp.</i>	18,18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
604	Willow	<i>Salix sp.</i>	20,17.5, 10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
605	Norway Maple	<i>Acer platanoides</i>	42	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
606	Willow	<i>Salix sp.</i>	26	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
607	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
608	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
609	Black Walnut	<i>Juglans nigra</i>	15	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
610	Shagbark Hickory	<i>Carya ovata</i>	87	Fair	Good	Good	large hole in trunk cavity	x			Private
611	Shagbark Hickory	<i>Carya ovata</i>	11	Good	Good	Good		x			Private
612	Black Walnut	<i>Juglans nigra</i>	43	Good	Good	Good		x			Private
613	Scots Pine	<i>Pinus sylvestris</i>	16	Good	Good	Poor		x			Private
614	Austrian Pine	<i>Pinus nigra</i>	18	Good	Good	Good	1m off property	x			Private
615	Sweet Cherry	<i>Prunus avium</i>	38	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
616	Black Walnut	<i>Juglans nigra</i>	37	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
617	Willow	<i>Salix sp.</i>	20,16	Fair	Good	Fair	epicormic branching		x	Conflicts from site preparation infrastructure and grading.	Private
618	Willow	<i>Salix sp.</i>	10,25	Poor	Good	Poor	epicormic branching		x	Conflicts from site preparation infrastructure and grading.	Private
619	Willow	<i>Salix sp.</i>	12	Good	Good	Fair	epicormic branching		x	Conflicts from site preparation infrastructure and grading.	Private
620	Unknown	<i>Unknown</i>	45			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
621	Sugar Maple	<i>Acer saccharum</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
622	Black Walnut	<i>Juglans nigra</i>	36	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
623	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
624	Willow	<i>Salix sp.</i>	22,18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
625	Willow	<i>Salix sp.</i>	22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
626	Willow	<i>Salix sp.</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
627	Norway Maple	<i>Acer platanoides</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
628	Willow	<i>Salix sp.</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
629	Sugar Maple	<i>Acer saccharum</i>	4x25-60	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
630	Black Cherry	<i>Prunus serotina</i>	80	Good	Good	Good		x			Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
631	Sweet Cherry	<i>Prunus avium</i>	28	Good	Good	Good		x			Private
632	Sweet Cherry	<i>Prunus avium</i>	44,32	Good	Good	Good		x			Private
633	Sweet Cherry	<i>Prunus avium</i>	17	Good	Good	Good		x			Private
634	Black Walnut	<i>Juglans nigra</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
635	Black Walnut	<i>Juglans nigra</i>	13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
636	Black Walnut	<i>Juglans nigra</i>	12.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
637	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
638	Black Walnut	<i>Juglans nigra</i>	19,16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
639	Black Walnut	<i>Juglans nigra</i>	21,12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
640	Black Walnut	<i>Juglans nigra</i>	10,10	Good	Good	Good		x			Private
641	Black Walnut	<i>Juglans nigra</i>	19,25,18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
642	Black Locust	<i>Robinia pseudoacacia</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
643	Black Locust	<i>Robinia pseudoacacia</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
644	Black Locust	<i>Robinia pseudoacacia</i>	26,35,16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
645	Black Walnut	<i>Juglans nigra</i>	13.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
646	Black Walnut	<i>Juglans nigra</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
647	Black Walnut	<i>Juglans nigra</i>	13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
648	Black Walnut	<i>Juglans nigra</i>	12.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
649	Unknown	<i>Unknown</i>	30.5	Good	Good	Fair	Rosa multiflora competition		x	Conflicts from site preparation infrastructure and grading.	Private
650	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
651	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
652	Black Walnut	<i>Juglans nigra</i>	20	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
653	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
654	Willow	<i>Salix sp.</i>	6x10-15	Fair	Good	Fair	broken trunk		x	Conflicts from site preparation infrastructure and grading.	Private
655	Sugar Maple	<i>Acer saccharum</i>	22	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
656	White Birch	<i>Betula papyrifera</i>	18.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
657	Norway Maple	<i>Acer platanoides</i>	31	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
658	Norway Maple	<i>Acer platanoides</i>	23	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
659	Black Walnut	<i>Juglans nigra</i>	45	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
660	Black Walnut	<i>Juglans nigra</i>	60	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
661	Black Walnut	<i>Juglans nigra</i>	32,48	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
662	Black Walnut	<i>Juglans nigra</i>	43	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
663	Black Walnut	<i>Juglans nigra</i>	19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
664	Black Walnut	<i>Juglans nigra</i>	21.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
665	Black Walnut	<i>Juglans nigra</i>	13.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
666	Black Walnut	<i>Juglans nigra</i>	25	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
667	Norway Maple	<i>Acer platanoides</i>	14.5	Fair	Good	Good	crack		x	Conflicts from site preparation infrastructure and grading.	Private
668	Norway Maple	<i>Acer platanoides</i>	14,13	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
669	Norway Maple	<i>Acer platanoides</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
670	Unknown	<i>Unknown</i>	20			Dead			x	Conflicts from site preparation infrastructure and grading.	Private
671	Sugar Maple	<i>Acer saccharum</i>	10,11,1 1,19.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
672	Eastern White Cedar	<i>Thuja occidentalis</i>	10,11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
673	Black Walnut	<i>Juglans nigra</i>	14.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
674	Black Walnut	<i>Juglans nigra</i>	11.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
675	Black Walnut	<i>Juglans nigra</i>	13.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
676	Black Walnut	<i>Juglans nigra</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
677	Black Walnut	<i>Juglans nigra</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
678	Black Walnut	<i>Juglans nigra</i>	18,25	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
679	White Spruce	<i>Picea glauca</i>	33	Good	Good	Good		x			Private
680	Black Walnut	<i>Juglans nigra</i>	70	Good	Good	Good		x			Private
681	Sugar Maple	<i>Acer saccharum</i>	5x10	Good	Good	Good		x			Private
683	Black Walnut	<i>Juglans nigra</i>	50	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
684	Black Walnut	<i>Juglans nigra</i>	75	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
685	Black Walnut	<i>Juglans nigra</i>	115	Fair	Good	Good	trunk cracks and bark missing		x	Conflicts from site preparation infrastructure and grading.	Private
686	Unknown	<i>Unknown</i>	32		dead				x	Conflicts from site preparation infrastructure and grading.	Private
687	Black Walnut	<i>Juglans nigra</i>	13.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
688	Unknown	<i>Unknown</i>	30		dead				x	Conflicts from site preparation infrastructure and grading.	Private
689	Black Walnut	<i>Juglans nigra</i>	21,23	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
690	Shagbark Hickory	<i>Carya ovata</i>	17	Good	Good	Good		x			Private
691	Black Walnut	<i>Juglans nigra</i>	14	Good	Good	Good		x			Private
693	Black Walnut	<i>Juglans nigra</i>	22.5	Good	Good	Fair	heavy vines		x	Conflicts from site preparation infrastructure and grading.	Private
694	Blue Spruce	<i>Picea pungens</i>	11	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
695	Black Walnut	<i>Juglans nigra</i>	17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
696	Blue Spruce	<i>Picea pungens</i>	14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
697	White Birch	<i>Betula papyrifera</i>	4x20	Good	Good	Good		x			Private
698	American Beech	<i>Fagus grandifolia</i>	17	Good	Good	Good		x			Private
699	Apple	<i>Malus sp.</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
700	Unknown	<i>Unknown</i>	3x17	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
701	Willow	<i>Salix sp.</i>	10x10	Poor	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
702	Norway Maple	<i>Acer platanoides</i>	31	Poor	Good	Good	large wound on trunk		x	Conflicts from site preparation infrastructure and grading.	Private
703	Unknown	<i>Unknown</i>	4x13-30	Good	Fair	Good			x	Conflicts from site preparation infrastructure and grading.	Private
704	Willow	<i>Salix sp.</i>	28,14	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
705	Unknown	<i>Unknown</i>	20	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
706	Unknown	<i>Unknown</i>	25	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
707	Willow	<i>Salix sp.</i>	130	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
708	Willow	<i>Salix sp.</i>	28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
709	Norway Maple	<i>Acer platanoides</i>	50	Good	Good	Good	1m from property limit	x			Private
710	Norway Maple	<i>Acer platanoides</i>	11.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
711	Black Walnut	<i>Juglans nigra</i>	10	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
712	Siberian Elm	<i>Ulmus pumila</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
713	Siberian Elm	<i>Ulmus pumila</i>	3x10.5-16	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
714	Siberian Elm	<i>Ulmus pumila</i>	16.5,19	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
715	Unknown	<i>Unknown</i>	80	Good	Good	Good		x			Private
716	Red Oak	<i>Quercus rubra</i>	68	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
717	Red Oak	<i>Quercus rubra</i>	65	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
718	Norway Maple	<i>Acer platanoides</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
719	Spruce	<i>Picea sp.</i>	15		dead				x	Conflicts from site preparation infrastructure and grading.	Private
720	Norway Maple	<i>Acer platanoides</i>	28	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
721	Norway Spruce	<i>Picea abies</i>	60	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
722	Norway Maple	<i>Acer platanoides</i>	32.5,17	Good	Good	Good	competing		x	Conflicts from site preparation infrastructure and grading.	Private
723	Whitw Spruce	<i>Picea glauca</i>	15	Good	Good	Good	treehouse steps		x	Conflicts from site preparation infrastructure and grading.	Private
724	Red Oak	<i>Quercus rubra</i>	80	Good	Good	Good	cutting		x	Conflicts from site preparation infrastructure and grading.	Private
725	Sugar Maple	<i>Acer saccharum</i>	3x18	Good	Good	Good	competing, growing beside fence, on property limit		x	Conflicts from site preparation infrastructure and grading.	Private
726	White Birch	<i>Betula papyrifera</i>	17.5	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
727	Blue Spruce	<i>Picea pungens</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
728	Blue Spruce	<i>Picea pungens</i>	18	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
729	Blue Spruce	<i>Picea pungens</i>	12	Good	Good	Good			x	Conflicts from site preparation infrastructure and grading.	Private
730	Blue Spruce	<i>Picea pungens</i>	10	Good	Good	Good		x			Private
AA	Black Walnut	<i>Juglans nigra</i>	30.5	Good	Good	Good		x			Neighbour
AB	Willow	<i>Salix sp.</i>	70	Good	Good	Good	multistem at dbh	x			Neighbour
AC	Willow	<i>Salix sp.</i>	35	Good	Good	Good	Beyond fence	x			Neighbour
AD	Scots Pine	<i>Pinus sylvestris</i>	30			Dead		x			Neighbour
AE	Scots Pine	<i>Pinus sylvestris</i>	25			Dead		x			Neighbour
AF	Black Cherry	<i>Prunus serotina</i>	30			Dead		x			Neighbour
AG	Black Cherry	<i>Prunus serotina</i>	15			Dead		x			Neighbour
AH	Black Cherry	<i>Prunus serotina</i>	15			Dead		x			Neighbour
AI	Silver Maple	<i>Acer saccharinum</i>	150	Good	Good	Good	multistem at 2m	x			Neighbour
AJ	Black Locust	<i>Robinia pseudoacacia</i>	125	Good	Good	Good		x			Neighbour
AK	Norway Maple	<i>Acer platanoides</i>	15.5	Good	Good	Good		x			Neighbour
AL	Black Cherry	<i>Prunus serotina</i>	50	Good	Good	Good		x			Neighbour
AM	White Spruce	<i>Picea glauca</i>	25	Good	Good	Good	on yard	x			Neighbour
AN	Black Locust	<i>Robinia pseudoacacia</i>	75	Good	Good	Good		x			Neighbour

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
AO	Silver Maple	<i>Acer saccharinum</i>	60	Fair	Fair	Good	codominant at 1.5 m, uneven stems	x			Neighbour
AP	Eastern White Cedar	<i>Thuja occidentalis</i>	25	Good	Good	Good	on yard	x			Neighbour
AQ	White Spruce	<i>Picea glauca</i>	25	Good	Good	Good	on yard	x			Neighbour
AR	White Spruce	<i>Picea glauca</i>	40	Good	Good	Good	on yard	x			Neighbour
AS	Black Walnut	<i>Juglans nigra</i>	50	Good	Good	Good		x			Neighbour
AT	Maple	<i>Acer sp.</i>	45	Good	Good	Good	on yard	x			Neighbour
AU	Norway Maple	<i>Acer platanoides</i>	40	Good	Good	Good		x			Neighbour
AV	Black Walnut	<i>Juglans nigra</i>	14	Good	Fair	Good	Rosa multiflora over taking lower crown	x			Neighbour
AW	Black Cherry	<i>Prunus serotina</i>	60	Fair	Poor	Poor	dying	x			Neighbour
AX	Apple	<i>Malus sp.</i>	16,28	Fair	Fair	Fair	Growing beside black cherry, competing	x			Neighbour
AY	Manitoba Maple	<i>Acer negundo</i>	24.5,25.5	Good	Good	Good	leaning off subject property	x			Neighbour
AZ	Black Cherry	<i>Prunus serotina</i>	37,25	Fair	Fair	Fair	leaning	x			Neighbour
BA	Yellow Birch	<i>Betula alleghaniensis</i>	16	Good	Good	Good		x			Neighbour
BB	Black Cherry	<i>Prunus serotina</i>	37,25	Fair	Fair	Fair	competing, vines	x			Neighbour
BC	Black Cherry	<i>Prunus serotina</i>	46	Good	Fair	Fair	many sap leaks along trunk, vines	x			Neighbour
BD	Black Cherry	<i>Prunus serotina</i>	48	Good	Fair	Fair	many sap leaks along trunk	x			Neighbour
BE	Black Cherry	<i>Prunus serotina</i>	21	Good	Good	Fair	heavy grape vines	x			Neighbour
BF	Black Cherry	<i>Prunus serotina</i>	62	Poor	Poor	Poor		x			Neighbour
BG	Unknown	<i>Unknown</i>	40.5			Dead		x			Neighbour
BH	Hawthorn	<i>crateagus sp.</i>	17,15	Fair	Fair	Fair	multistem, vines	x			Neighbour
BI	Hawthorn	<i>crateagus sp.</i>	3x20-30	Fair	Fair	Fair	heavy grape vines	x			Neighbour
BJ	Black Cherry	<i>Prunus serotina</i>	70	Poor	Poor	Poor	starting to uproot	x			Neighbour
BK	Black Cherry	<i>Prunus serotina</i>	85104	Good	Fair	Fair		x			Neighbour
BL	Black Walnut	<i>Juglans nigra</i>	13.5	Good	Good	Good		x			Neighbour
BM	White Ash	<i>Fraxinus americana</i>	15	Fair	Fair	Fair	emerald ash borer	x			Neighbour
BN	American Elm	<i>Ulmus americana</i>	33	Good	Fair	Fair	heavy grape vines	x			Neighbour
BO	Hawthorn	<i>crateagus sp.</i>	18	Poor	Poor	Poor	Upper branch broken	x			Neighbour
BP	Hawthorn	<i>crateagus sp.</i>	16	Good	Good	Good		x			Neighbour
BQ	Hawthorn	<i>crateagus sp.</i>	13	Good	Good	Good		x			Neighbour
BR	Hawthorn	<i>crateagus sp.</i>	12.5	Good	Fair	Fair		x			Neighbour
BS	American Elm	<i>Ulmus americana</i>	16	Good	Good	Good	Rosa multiflora competition	x			Neighbour
BT	Black Walnut	<i>Juglans nigra</i>	17.5	Good	Good	Good		x			Neighbour
BU	Sweet Cherry	<i>Prunus avium</i>	30.5	Good	Good	Good		x			Neighbour
BV	Black Cherry	<i>Prunus serotina</i>	61.5	Good	Fair	Good		x			Neighbour
BW	Black Cherry	<i>Prunus serotina</i>	60110	Fair	Fair	Fair		x			Neighbour
BX	Manitoba Maple	<i>Acer negundo</i>	17	Good	Good	Good		x			Neighbour
BY	Black Cherry	<i>Prunus serotina</i>	10	Good	Good	Good		x			Neighbour
BZ	Manitoba Maple	<i>Acer negundo</i>	11.5	Good	Good	Good		x			Neighbour
CA	Black Cherry	<i>Prunus serotina</i>	20,25	Good	Good	Good		x			Neighbour
CB	Black Cherry	<i>Prunus serotina</i>	65			Dead		x			Neighbour
CC	Black Cherry	<i>Prunus serotina</i>	85,38	Good	Good	Good	38 cm stem is dead	x			Neighbour
CD	Red Oak	<i>Quercus rubra</i>	31	Fair	Good	Good	crack up base of trunk	x			Neighbour
CE	Black Cherry	<i>Prunus serotina</i>	17.5	Good	Good	Good		x			Neighbour

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
CF	White Ash	<i>Fraxinus americana</i>	10.5	Good	Good	Good		x			Neighbour
CG	Mountain Ash	<i>Sorbus subg. Sorbus</i>	23	Good	Good	Good		x			Neighbour
CH	Red Oak	<i>Quercus rubra</i>	62,26	Fair	Good	Good		x			Neighbour
CI	Red Oak	<i>Quercus rubra</i>	84.5	Good	Good	Good		x			Neighbour
CJ	Red Oak	<i>Quercus rubra</i>	25	Good	Good	Good		x			Neighbour
CK	Black Cherry	<i>Prunus serotina</i>	69.5	Good	Good	Good		x			Neighbour
CL	Black Cherry	<i>Prunus serotina</i>	83.5	Fair	Fair	Good		x			Neighbour
CM	Hawthorn	<i>crataegus sp.</i>	11,16	Good	Good	Fair	Prunus branch in canopy	x			Neighbour
CN	Hawthorn	<i>crataegus sp.</i>	18	Good	Good	Good		x			Neighbour
CO	Hawthorn	<i>crataegus sp.</i>	22	Good	Good	Good	heavy grape vines	x			Neighbour
CP	Red Oak	<i>Quercus rubra</i>	12.5	Good	Good	Good		x			Neighbour
CQ	Red Oak	<i>Quercus rubra</i>	34.5	Good	Good	Good		x			Neighbour
CR	Red Oak	<i>Quercus rubra</i>	13,13	Good	Good	Good		x			Neighbour
CS	Red Oak	<i>Quercus rubra</i>	48	Good	Good	Good		x			Neighbour
CT	Red Oak	<i>Quercus rubra</i>	34.5	Fair	Good	Good		x			Neighbour
CU	Manitoba Maple	<i>Acer negundo</i>	13	Good	Good	Good		x			Neighbour
CV	White Ash	<i>Fraxinus americana</i>	17	Poor	Poor	Poor	emerald ash borer	x			Neighbour
CW	Black Cherry	<i>Prunus serotina</i>	30,32	Good	Good	Good		x			Neighbour
CX	White Ash	<i>Fraxinus americana</i>	11	Poor	Poor	Poor	emerald ash borer	x			Neighbour
CY	White Ash	<i>Fraxinus americana</i>	12	Poor	Poor	Poor	emerald ash borer	x			Neighbour
CZ	Black Walnut	<i>Juglans nigra</i>	15	Good	Good	Good	tree house ladder	x			Neighbour
DA	Black Cherry	<i>Prunus serotina</i>	120	Good	Fair	Good	Rosa multiflora competition	x			Neighbour
DB	Black Walnut	<i>Juglans nigra</i>	16	Good	Good	Good		x			Neighbour
DC	Unknown	<i>Unknown</i>	28,28			Dead		x			Neighbour
DD	Unknown	<i>Unknown</i>	45			Dead		x			Neighbour
DE	White Spruce	<i>Picea glauca</i>	23	Good	Good	Good		x			Neighbour
DF	White Spruce	<i>Picea glauca</i>	22	Good	Good	Good		x			Neighbour
DG	Black Cherry	<i>Prunus serotina</i>	12	Good	Good	Good		x			Neighbour
DH	Unknown	<i>Unknown</i>	35			Dead		x			Neighbour
DI	Black Cherry	<i>Prunus serotina</i>	23	Good	Good	Good		x			Neighbour
DJ	White Ash	<i>Fraxinus americana</i>	26	Fair	Fair	Fair	emerald ash borer	x			Neighbour
DK	Scots Pine	<i>Pinus sylvestris</i>	18	Good	Good	Good		x			Neighbour
DL	Black Walnut	<i>Juglans nigra</i>	20	Good	Good	Good		x			Neighbour
DM	Sweet Cherry	<i>Prunus avium</i>	30,16	Good	Good	Good		x			Neighbour
DN	Sugar Maple	<i>Acer saccharum</i>	70	Good	Good	Good		x			Neighbour
DO	Sugar Maple	<i>Acer saccharum</i>	85	Good	Good	Good		x			Neighbour
DP	Black Locust	<i>Robinia pseudoacacia</i>	13,14,2 2.5	Good	Good	Good		x			Neighbour
DQ	Black Walnut	<i>Juglans nigra</i>	27	Good	Good	Good		x			Neighbour
DR	Black Walnut	<i>Juglans nigra</i>	14.5,10	Good	Good	Good		x			Neighbour
DS	Black Walnut	<i>Juglans nigra</i>	12.5	Good	Good	Good		x			Neighbour
DV	Red Oak	<i>Quercus rubra</i>	50	Good	Good	Good		x			Neighbour
DW	Black Locust	<i>Robinia pseudoacacia</i>	41	Good	Good	Good			x	Conflicts with road entry	City

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	Comments	Retain	Remove	Rationale	Ownership
DX	Black Locust	<i>Robinia pseudoacacia</i>	38	Good	Good	Good			x	Conflicts with road entry	City
DY	Black Locust	<i>Robinia pseudoacacia</i>	40,33	Good	Good	Good			x	Conflicts with road entry	City
DZ	Black Locust	<i>Robinia pseudoacacia</i>	25	Good	Good	Good			x	Conflicts with road entry	City
EB	Manitoba Maple	<i>Acer negundo</i>	12	Good	Good	Good			x	Conflicts with road entry	City
EC	Black Walnut	<i>Juglans nigra</i>	60	Good	Good	Good			x	Conflicts with road entry	City
ED	Black Locust	<i>Robinia pseudoacacia</i>	22	Good	Good	Good			x	Conflicts with road entry	City
EE	Black Locust	<i>Robinia pseudoacacia</i>	25	Fair	Good	Good	cutting plus 5 sprouts less than 10cm		x	Conflicts with road entry	City
EF	Black Locust	<i>Robinia pseudoacacia</i>	35.5	Good	Good	Good			x	Conflicts with road entry	City
EG	Black Walnut	<i>Juglans nigra</i>	60	Good	Good	Good		x			City
EH	Black Walnut	<i>Juglans nigra</i>	78	Good	Good	Good		x			City
EI	Black Locust	<i>Robinia pseudoacacia</i>	88	Fair	Good	Good	leaning	x			City
EJ	Black Locust	<i>Robinia pseudoacacia</i>	15	Good	Good	Good		x			City
EK	Sugar Maple	<i>Acer saccharum</i>	40	Good	Good	Good		x			Neighbour
EL	White Spruce	<i>Picea glauca</i>	50	Good	Good	Good		x			Neighbour
EM	White Spruce	<i>Picea glauca</i>	60	Good	Good	Good		x			Neighbour
EN	White Spruce	<i>Picea glauca</i>	60	Good	Good	Good		x			Neighbour
EQ	Silver Maple	<i>Acer saccharinum</i>	67	Good	Good	Good		x			Neighbour
ER	Austrian Pine	<i>Pinus nigra</i>	33	Good	Good	Fair		x			Neighbour
ES	Norway Spruce	<i>Picea glauca</i>	40	Good	Good	Good		x			Neighbour
ET	Norway Maple	<i>Acer platanoides</i>	45	Good	Good	Good		x			Neighbour
EU	Norway Maple	<i>Acer platanoides</i>	85	Good	Good	Good	beside house	x			Neighbour
EV	Unknown	<i>Unknown</i>	20	Good	Good	Good	on front lawn	x			City
EW	Blue Spruce	<i>Picea pungens</i>	11	Good	Good	Good		x			Neighbour
EY	Sugar Maple	<i>Acer saccharum</i>	19	Good	Good	Good		x			Neighbour
EZ	Sugar Maple	<i>Acer saccharum</i>	65	Good	Good	Good		x			Neighbour

Legend

- DBH** Diameter at Breast Height (cm)
- TPZ** Tree Protection Zone
- GOOD** Dead branches less than 10%; good compartmentalization on any wounds, no structural defects
- FAIR** 10-30% dead branches, size or occurrence of wounds present some concerns, minor structural defects.
- POOR** More than 30% dead branches, weak compartmentalization, early leaf drop, presence of insects or disease, major structural defect
- DEAD** Tree shows no signs of life
- Rating** (L) = light; (M) = moderate; (H) = heavy



Appendix B

Implementation of the Tree Protection Plan

City of Hamilton Guidelines

As per Section 2.3.3: Step 3: Implementation of the TPP under the City of Hamilton Tree Protection Guidelines-City Wide:

“Once the TPP has been approved by the City, implementation according to the measures outlined in the TPP may begin. This includes having a recognized tree management professional on site at certain times during construction, monitoring protective fencing, and using reports and securities to ensure the work is completed as agreed to. These implementation measures are outlined below.

Tree Protection Measures - Verification Letter

Tree protection measures prevent injuries from construction activity by keeping equipment and materials away from the tree. The tree management professional must provide a Verification of Tree Protection Letter to the Director of Planning to confirm that all tree protection measures have been installed, as shown in the TPP approved by the City of Hamilton.

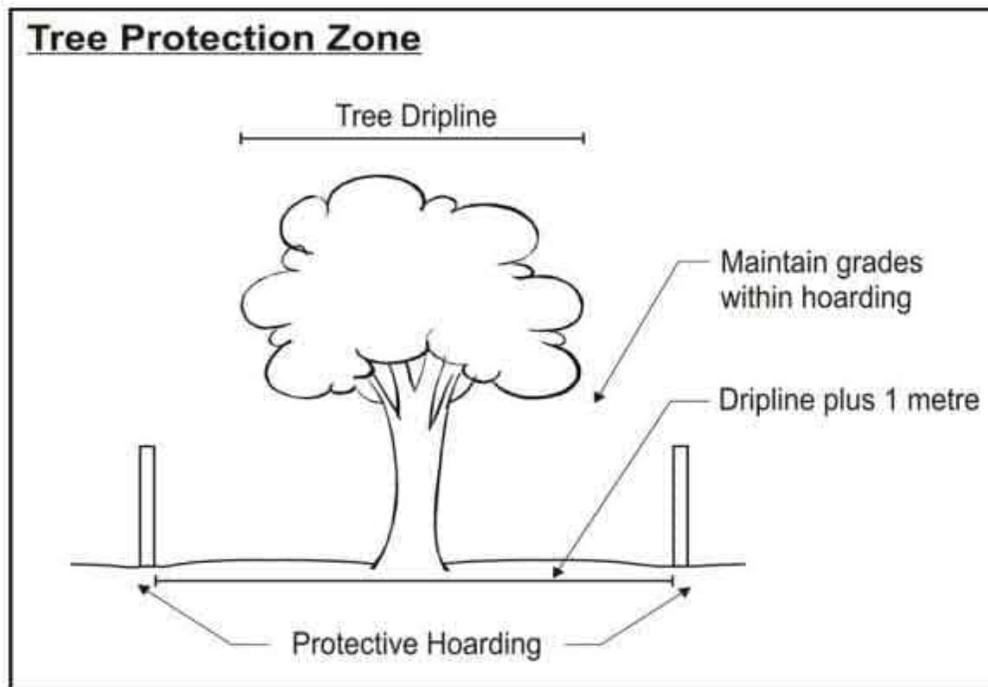
The Verification of Tree Protection Letter must be provided to the City before any rough grading on the site can occur, servicing can commence, or building permit can be issued. The grading consultant must confirm that the TPP conforms to the Lot Grading Control Plan before these Plans are approved by the Planning Division.

Where existing tree cutting by-laws are in effect, the City Forest Conservation By-law Officer may also check the site during the construction period.

Tree Protection Fencing

The applicant is responsible for ensuring that tree protection fencing (hoarding) is maintained throughout all phases of construction in the location and condition approved. Hoarding will provide protection to the individual trees, clumps of trees, and woodland edges to be retained. It should be placed a minimum of one metre from the drip line of the tree/woodland around the perimeter of individual/grouped trees/woodland (refer to Figure 1). Paige wire farm fencing shall be the standard form; snow fencing is not acceptable. A sign must be posted on the fence to indicate that it delineates a tree protection zone.

Figure 1: Diagram showing the proper way of measuring protection zone



To avoid damage to trees and soil compaction, access routes should be established away from tree protection zones. Areas protected by temporary fencing will remain undisturbed and will not be used for temporary storage, placement, or excavation of fill, topsoil, construction materials or equipment, or debris. Construction contaminants (fuels, oils) must be kept clear of tree protection zones. The existing grades within the tree protection areas must not be disturbed.

Wherever possible, avoid cutting surface roots of trees to be retained. In excavation, if root cuts are necessary, they should be done quickly, making smooth, flush cuts supervised by a tree management professional. Then the roots should be backfilled and watered before they have a chance to dry out.

For the best results, developers must ensure their builders and subcontractors are educated about the TPP and its requirements before starting their work. All subcontractors must be supplied with a copy of the approved TPP.

Post-Grading Tree Maintenance Report

After grading has been completed, the City requires that a Post-Grading Tree Maintenance Report be prepared and submitted to the Director of Planning. The Post-Grading Tree Maintenance Report should:

- Assess damage to trees that were to be retained but have inadvertently been damaged or removed by site grading and clearing;
- Identify a dollar value for damaged trees and propose a compensation plan for replacing them; and,
- Recommend preservation methods such as crown and root fertilization, watering and pruning to improve the health of remaining trees.

Release of the tree protection security deposit may be delayed until this report has been received and the requirements have been satisfied.

Security Deposits

A security deposit in the form of cash or acceptable letter of credit will be required for the TPP on lots or blocks that involve tree protection as part of an approved TPP. The dollar value of trees to be retained through the TPP will be determined through consultation with City staff. Factors to be considered in valuing the trees are: species, condition/quality of trees, and quantity of trees. Seventy-five percent of the deposit will be released once the consultant who prepared the TPP certifies that it has been implemented as shown. If trees have been removed or irreparably damaged during construction, the owner/developer must replace them, to the satisfaction of the City, or the deposit fee (or a portion of it) will not be refunded. Twenty-five percent of the fee will be held for a two year maintenance period. The amount returned at the end of the maintenance period may be reduced based on the survival of the trees.



Appendix I

SAR Screening Sources (GeoProcess, 2025)

Screening Resource	Description
<p>Natural Heritage Information Center (NHIC)</p>	<p>The Natural Heritage Information Center (NHIC), operated by the Ontario Ministry of Natural Resources and Forestry, collects, reviews, manages and distributes information on Ontario’s biodiversity. Data distributed by the NHIC is used in conservation and natural resource management decision making and was a primary resource for this report. Through the NHIC Make-a-Map tool, data on species, plant communities, wildlife concentration areas and natural areas is made accessible to the public and professionals using generalized 1-kilometer grid units to protect sensitive information. The mapping interface provides current and historical occurrences of SAR within the specified grid unit. The database also identifies environmental designations which provide insight into habitat potential, including wetland, areas of natural and scientific interests and woodlands.</p>
<p>Breeding Bird Atlas</p>	<p>The atlas divides the province into 10×10 km squares, and then birders find as many breeding species as possible in each square. Atlassers who know birds well by song complete 5-minute “Point Counts”, 25 of which are required to provide an index of the abundance of each species in a square. Data from every square are mapped to show the distribution of each species. Point count data from each square show how the relative abundance of each species varies across the province.</p>
<p>eBird</p>	<p>eBird data document bird distribution, abundance, habitat use, and trends through checklist data collected within a simple, scientific framework. Birders enter when, where, and how they went birding, and then fill out a checklist of all the birds seen and heard during the outing. eBird’s free mobile app allows offline data collection anywhere in the world, and the website provides many ways to explore and summarize your data and other observations from the global eBird community. eBird hotspots that are within 1 km of the Study area are selected for species review.</p>
<p>Ontario Moth Atlas</p>	<p>The Ontario Moth Atlas is a project of the Toronto Entomologists' Association. The atlas currently covers about 250 species from 7 of the best-known families. The atlas presently includes 62,000 records. The last update of the atlas was in April 2020. The atlas is updated at least every 3 months. Most atlas data come from iNaturalist records. However, there is some data from Chris Schmidt of Agriculture Canada, the BOLD (Barcode of Life Datasystems) project of the University of Guelph, and from other records submitted directly to the TEA. The atlas uses the same 10×10 km squares at the Breeding Bird Atlas.</p>
<p>Ontario Butterfly Atlas</p>	<p>The Ontario Butterfly Atlas is a project of the Toronto Entomologists' Association (TEA). The TEA has been accumulating records and publishing annual seasonal summaries (Ontario Lepidoptera) for 50 years, with the first edition appearing in 1969. Atlas data comes from eButterfly records, iNaturalist records, BAMONA records, and records submitted directly to the TEA. The atlas uses the same 10×10 km squares at the Breeding Bird Atlas.</p>
<p>i-Naturalist</p>	<p>i-Naturalist is a nature app that helps public identify plants and animals. Using algorithms as well as scientists and taxonomic experts’ multiple</p>

Screening Resource	Description
	<p>observations can be identified at a research scale. This data generated by the iNat community can be used in science and conservation. The program actively distributes the data in venues where scientists and land managers can find it. I-Naturalist has a project group for (NHIC) Rare species of Ontario. GeoProcess only records observations within 1 km of the Study area.</p>
<p>Fisheries and Ocean Aquatic Species at Risk Maps</p>	<p>The DFO has compiled critical habitat and distribution data for aquatic species listed under the Species at Risk Act (SARA). The interactive map is intended to provide an overview of the distribution of aquatic species at risk and the presence of their critical habitat within Canadian waters. The official source of information is the Species at Risk Public Registry. Using this map, a 1 km radius circle is outlined around aquatic features located within the Study area.</p>



Appendix J

Significant Wildlife Habitat Assessment (GeoProcess, 2025)

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
Seasonal Concentration Areas of Animals						
Waterfowl Stopover and Staging Areas (Terrestrial)	American Black Duck Northern Pintail Gadwall Blue-winged Teal Green-winged Teal American Wigeon Northern Shoveler Tundra Swan	CUM CUT1 Plus, evidence of annual spring flooding within these ecosites *Fields with seasonal flooding and waste grains in certain areas are specific to Tundra Swan	<ul style="list-style-type: none"> Fields with sheet water during Spring (mid-March to May). Agricultural fields with waste grain are not SWH unless they have spring sheet water available. 	No	<ul style="list-style-type: none"> No candidate habitat- CUM and CUT1 communities on Property too small to accommodate large groups of waterfowl. None of the listed bird species observed during field surveys. No candidate habitat for waterfowl stopover and staging areas (terrestrial). 	<ul style="list-style-type: none"> Any mixed species aggregations of 100+ individuals. The flooded field plus 100-300m radius, dependant on localized site and adjacent land use. Annual use of habitat is documented from information sources or field studies. Specific evaluation methods required.
Waterfowl Stopover and Staging Areas (Aquatic)	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked Duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	<ul style="list-style-type: none"> Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. 	No	<ul style="list-style-type: none"> No large groups of listed waterfowl species were observed using the meadow marsh or swamp communities during spring field studies. No candidate habitat for waterfowl stopover and staging areas (aquatic). 	<ul style="list-style-type: none"> Aggregations of 100+ of species listed for 7 days, results in >700 waterfowl use days. Areas with annual staging for ruddy ducks, canvasbacks and redheads. The combined area of the ELC ecosites and a 100m radius area. Wetland area and shorelines associated with sites identified within the SWHTG, Appendix K, are significant wildlife habitat. Annual use of habitat is documented from information sources or field studies. Specific evaluation methods required.

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
Shorebird Migratory Stopover Area	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	<ul style="list-style-type: none"> • Shorelines of lakes, rivers, and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. • Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores in May to mid-June and early July to October. • No sewage treatment ponds. 	No	<ul style="list-style-type: none"> • No shoreline habitat within the Study Area. • No candidate habitat for shorebird migratory stopover areas. 	<ul style="list-style-type: none"> • Presence of 3 or more of listed species and >1000 shorebird use days during spring or fall migration period. • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area. • Annual use of habitat is documented from information sources or field studies • Specific evaluation methods required.
Raptor Wintering Area	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl Special Concern: Short-eared Owl, Bald Eagle	<p>Combo of one of each Community Series from: Forest (FOD FOM FOC) and Upland (CUM CUT CUS CUW)</p> <p>Bald Eagle: Forest on shoreline area adjacent to large rivers and lakes FOD FOM FOC SWM SWC</p>	<p>A combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. • Need to be >20ha with a combo of forest and upland.</p> <ul style="list-style-type: none"> • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands. • Field area of the habitat is to be wind swept with limited snow depth or accumulation. • Eagle sites have open water and large trees and snags available for roosting. 	No	<ul style="list-style-type: none"> • Agricultural fields onsite not idle or fallow and meadow communities too small to qualify as candidate habitat for wintering raptors. • No candidate habitat for raptor wintering areas. 	<ul style="list-style-type: none"> • One or more Short-eared Owls, OR one of more Bald Eagles, OR at least 10 individuals and two of the listed hawk/owl species. • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • For an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area. • Specific evaluation methods required.

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
Bat Hibernacula	Big Brown Bat Tri-coloured Bat	CCR1 CCR2 CCA1 CCA2 *Buildings are not to be considered SWH	May be found in caves, mine shafts, underground foundations, and Karsts. • Active mine sites are not considered SWH.	No	<ul style="list-style-type: none"> No crevices, caves or abandoned mines were observed to accommodate hibernating bats. No candidate habitat for bat hibernacula. 	<ul style="list-style-type: none"> All sites with confirmed hibernating bats are SWH. Area includes 200m radius around the entrance of the hibernaculum for most development types and 1000m for wind farms. Studies are to be conducted during the peak swarming period (Aug.-Sept.). Specific survey methods required.
Bat Maternity Colonies	Big Brown Bat Silver-haired Bat	All Ecosites in: FOD FOM SWD SWM	<ul style="list-style-type: none"> Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered SWH). Not found in caves or mines in ON. Located in mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees. Prefer snags in early stages of decay (class 1-3 or class 1 or class 2). Silver-haired Bats prefer older mixed or deciduous forests with at least 21 snags/ha. 	Yes	<ul style="list-style-type: none"> The FODM2-1 and FODM1-1 communities have the potential to provide bat maternity colony habitat. Given that the FODM2-1 and FODM1-1 will be retained, no confirmation of use surveys were conducted for these communities, and they were assumed to be significant. GRA re-assessed the WODM4-4 community for bat maternity colony roosts following the updated protocol by MNRF (2017). This survey revealed twenty (20) candidate bat roost trees, as shown in Section 4.5.8. 	<ul style="list-style-type: none"> Maternity Colonies with confirmed use by >10 Big Brown Bats, >5 Adult Female Silver-haired Bats. The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects"
Turtle Wintering Areas	Midland Painted Turtle Special Concern: Northern Map Turtle, Snapping Turtle	Snapping and Midland Painted: SW MA OA SA and FEO/BOO Series. Northern Map: Open water areas such as deeper rivers or streams and lakes.	<ul style="list-style-type: none"> Wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. 	No	<ul style="list-style-type: none"> There are no ponds suitable for turtle wintering areas located in the Study Area. 	<ul style="list-style-type: none"> Presence of 5 over-wintering Midland Painted Turtles is significant. One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. Search for congregations in Basking Areas in spring and fall.

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
Reptile Hibernaculum	Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Special Concern: Milksnake Eastern Ribbonsnake	Any ecosite other than very wet. Talus, Rock Barren, Crevice, Cave, Alvar may be directly related. Observations of congregations in spring or fall is good indicator.	<ul style="list-style-type: none"> Sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line, such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. 	No	<ul style="list-style-type: none"> No potential snake hibernacula features were observed. No candidate habitat for snake hibernacula. 	<ul style="list-style-type: none"> Presence of snake hibernacula used by a minimum of 5 individuals of a snake sp. <u>or</u> individuals of 2 or more snake spp. Congregations of a minimum of 5 individuals of a snake sp. <u>Or</u> individuals of 2 or more snake spp. near potential hibernacula (e.g. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct). If there are Special Concern Species present, then site is SWH. The feature in which the hibernacula is located plus a 30m radius area is the SWH. Hibernacula are used annually, often by the same individuals (strong site fidelity) and other life processes often take place near by.
Colonially-Nesting Bird Breeding Habitat (Bank and Cliff)	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles, cliff faces, bridge abutments, silos, barns. CUM1 CUS1 BLS1 CLO1 CLT1 CUT1 BLO1 BLT1 CLS1	<ul style="list-style-type: none"> Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. Does not include man-made structures or licenced Mineral Aggregate Operation. 	No	<ul style="list-style-type: none"> No bank or cliff swallow nesting habitat was observed. No candidate habitat for colonial-nesting birds. 	<ul style="list-style-type: none"> Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. Field surveys to observe and count swallow nests are to be completed during the breeding season. Specific evaluation methods required.
Colonially-Nesting Bird Breeding Habitat (Tree/Shrub)	Great Blue Heron Black-crowned Night Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	<ul style="list-style-type: none"> Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. Most nests in trees are 11-15m from ground, near the top of the tree. 	No	<ul style="list-style-type: none"> No groups of large stick nests were observed during field investigations. No candidate habitat for tree/shrub colonial nesting birds. 	<ul style="list-style-type: none"> Presence of 2 or more active nests of Great Blue Heron or other listed species. The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH. Confirmation of active heronries are to be achieved through site visits

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
						conducted during the nesting season (April-Aug) or by evidence such as the presence of fresh guano, dead young and/or eggshells.
Colonially-Nesting Bird Breeding Habitat (Ground)	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1-6 MAS1-3 CUM CUT CUS	Nesting colonies on islands or peninsulas associated with open water or in marshy areas. Brewers Blackbird colonies found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands.	No	<ul style="list-style-type: none"> No rocky islands or peninsulas are present within the Study Area. No Brewer's blackbirds encountered (in southern Ontario, Brewer's Blackbird known occurrences are primarily restricted to the Bruce Peninsula; none are known to occur in London Area) No candidate habitat for ground colonial nesting birds was identified. 	<ul style="list-style-type: none"> Presence of >25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. Presence of 5 or more pairs for Brewer's Blackbird. Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH. Studies would be done during May/June when actively nesting. Specific evaluation methods required
Migratory Butterfly Stopover Areas	Painted Lady Red Admiral Special Concern: Monarch	Combo of one of each: Field (CUM CUT CUS) and Forest (FOC FOD FOM CUP)	<ul style="list-style-type: none"> Minimum 10ha in size with combo of field and forest located within 5km of Lake Erie or Lake Ontario. Should not be disturbed. Field/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. Should provide protection from the elements, often spits of land or areas with the shortest distance to cross the Great Lakes. 	No	<ul style="list-style-type: none"> The Study Area is not within 5km of the Lake Ontario shoreline. No candidate habitat for migratory butterfly stopover areas. 	<ul style="list-style-type: none"> Presence of Monarch Use Days (MUD) during Fall migration (Aug/Oct) Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
Landbird Migratory Stopover Areas	All migratory songbirds	All Ecosites within: FOC FOM FOD SWC SWM SWD	<ul style="list-style-type: none"> • Woodlots >5ha in size and within 5km of Lake Erie and Lake Ontario. • If woodlands are rare in area, smaller size can be considered. • If multiple woodlands located along shoreline, those 2km from shoreline are more significant. • Sites have a variety of habitats; forest, grassland and wetland complexes. • The largest sites are more significant. • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Erie and Lake Ontario are Candidate SWH. 	No	<ul style="list-style-type: none"> • The Study Area is not within 5km of the Lake Ontario shoreline. • No candidate habitat for migratory landbird stopover areas. 	<ul style="list-style-type: none"> • Use of the habitat by >200 birds/day and with >35 spp. with at least 10 bird spp. recorded on at least 5 different survey dates. • Studies should be completed during spring (Mar-May) and fall (Aug-Oct) migration using standardized assessment techniques. • Specific evaluation methods required.
Deer Winter Congregation Areas	White-tailed deer	All forested ecosites within: FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may be used.	<ul style="list-style-type: none"> • Woodlots >100 ha in size or if large woodlots are rare in a planning area woodlots >50ha. • Large woodlots >100ha and up to 1500ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. • Woodlots with high densities of deer due to artificial feeding are not significant. 	No	<ul style="list-style-type: none"> • No large woodlots >100ha were encountered. • No candidate habitat for deer winter congregation areas. 	<ul style="list-style-type: none"> • Will be mapped by MNRF. • All woodlots exceeding the criteria are significant unless determined to be not by the MNRF. • Studies to be completed during winter when >20cm of snow is on the ground, using aerial survey or pellet count.
Rare Vegetation Communities						
Cliffs and Talus Slopes	N/A	Any Ecosite within: TAO TAS TAT CLO CLS CLT	<ul style="list-style-type: none"> • A Cliff is vertical to near vertical bedrock >3m in height. • A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris. Most cliff and talus slopes occur along the Niagara Escarpment. 	No	<ul style="list-style-type: none"> • No cliffs or talus slopes were identified. • No candidate habitat for cliffs or talus slopes. 	<ul style="list-style-type: none"> • Confirm any ELC Vegetation Type for Cliffs or Talus Slopes
Sand Barren	N/A	SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow	<ul style="list-style-type: none"> • A sand barren area >0.5ha in size. • Sand Barrens typically are exposed sand, generally sparsely vegetated 	No	<ul style="list-style-type: none"> • No sand barrens were identified. • No candidate habitat for sand barrens. 	<ul style="list-style-type: none"> • Confirm any ELC Vegetation Type for Sand Barrens. • Site must not be dominated by exotic

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
		(SBO1), thicketlike (SBS1), or more closed and treed (SBT1). Tree cover always < 60%	and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. <ul style="list-style-type: none"> Vegetation can vary from patchy and barren to tree covered, but less than 60%. 			or introduced species (<50% vegetative cover are exotic sp.).
Alvar	N/A	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 <i>Five Alvar Indicator Species:</i> 1) Carex crawei 2) Panicum philadelphicum 3) Eleocharis compressa 4) Scutellaria parvula 5) Trichostema brachiatum	<ul style="list-style-type: none"> An Alvar site >0.5ha in size, only known sites are found in the western islands of Lake Erie. An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising several characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover. 	No	<ul style="list-style-type: none"> No alvars were identified. No candidate habitat for alvars. 	<ul style="list-style-type: none"> Studies that identify four of the five Alvar Indicator Species at a Candidate Alvar site is Significant. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses.
Old Growth Forest	N/A	FOD FOC FOM SWD SWC SWM	<ul style="list-style-type: none"> Woodland area is >0.5ha Characterized by heavy mortality or turnover of overstorey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris. 	No	<ul style="list-style-type: none"> No old growth forests were identified. No candidate habitat for old growth forests. 	<ul style="list-style-type: none"> If dominant trees species of the area are >140 years old, then the area containing these trees is SWH. The forested area containing the old growth characteristics will have experienced no recognizable forestry activities. The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH.

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
						<ul style="list-style-type: none"> Determine ELC vegetation types for the forest area containing the old growth characteristics.
Savannah	N/A	TPS1 TPS2 TPW1 TPW2 CUS2	<ul style="list-style-type: none"> A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. No minimum size to site. Site must be restored or a natural site. *Remnant sites such as railway right of ways are not considered to be SWH. • Remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario). 	No	<ul style="list-style-type: none"> No savannahs were identified. No candidate habitat for savannahs. 	<ul style="list-style-type: none"> Field studies confirm one or more of the Savannah indicator species found in Appendix N, Ecoregion 7E of the SWHTG, OMNR (2000). Entire area of the ELC Ecosite is SWH. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic species).
Tallgrass Prairie	N/A	TPO1 TPO2	<ul style="list-style-type: none"> A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has <25% tree cover. No minimum size to site. Site must be restored or a natural site. *Remnant sites such as railway right of ways are not considered to be SWH. 	No	<ul style="list-style-type: none"> No tallgrass prairies were identified. No candidate habitat for tall grass prairies. 	<ul style="list-style-type: none"> Field studies confirm one or more of the Prairie indicator species in Appendix N, Ecoregion 7E of the SWHTG, OMNR (2000). Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.)
Other Rare Vegetation Communities	N/A	Provincially Rare S1, S2 and S3 ELC Vegetation Types.	May include beaches, fens, forest, marsh, barrens, dunes, and swamps. See OMNRF/NHIC for up-to-date list of rare vegetation communities.	No	<ul style="list-style-type: none"> No rare vegetation communities were identified. No candidate habitat for rare vegetation communities. 	<ul style="list-style-type: none"> Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG, OMNR (2000). Area of the ELC Vegetation Type polygon is the SWH.
Specialized Habitat for Wildlife						
Waterfowl Nesting Area	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3	<ul style="list-style-type: none"> A waterfowl nesting area extends 120m from a wetland (>0.5ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5ha) wetlands within 120m of each 	No	<ul style="list-style-type: none"> There were no aggregations of nesting waterfowl observed in the meadow marsh community during spring field investigations. No candidate habitat for waterfowl nesting areas. 	<ul style="list-style-type: none"> Presence of 3 or more nesting pairs for listed species excluding Mallards OR presence of 10 or more nesting pairs for listed species including Mallards. Any active nesting site of an American Black Duck is considered significant.

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
	Wood Duck Hooded Merganser Mallard	MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 Note: includes adjacency to PSWs	individual wetland where waterfowl nesting is known to occur. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. • Upland areas should be at least 120m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests.			<ul style="list-style-type: none"> • Nesting studies should be completed during the spring breeding season (April-June). • Specific evaluation methods required. • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120m from the wetland and will provide enough habitat for waterfowl to successfully nest.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Osprey Special Concern: Bald Eagle	ELC Forest Community Series: FOD FOM FOC SWD SWM and SWC directly adjacent to riparian areas (rivers, lakes, ponds and wetlands)	<ul style="list-style-type: none"> • Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Nests located on man-made objects are not to be included as SWH. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. 	No	<ul style="list-style-type: none"> • No large stick nests were identified. • No candidate habitat for Osprey or Bald Eagle habitat. 	<ul style="list-style-type: none"> • One or more active Osprey or Bald Eagle nests in an area. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300m radius around the nest or the contiguous woodland stand is the SWH with additional requirements. • For a Bald Eagle the active nest and a 400-800m radius around the nest is the SWH with additional requirements. • To be significant a site must be used annually. • When found inactive, the site must be known to be inactive for >3 years or suspected of not being used for >5 years before being considered not significant. • Observational studies to determine nest site use, perching sites and foraging areas need to be done from early March to mid August. • Specific evaluation methods required.
Woodland Raptor Nesting Habitat	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk	May be found in all forested ELC Ecosites. May also be found in: SWC SWM SWD	<ul style="list-style-type: none"> • All natural or conifer plantation woodland/forest stands >30ha with >4ha of interior habitat. • Interior habitat determined with a 	No	<ul style="list-style-type: none"> • No forest interior habitat was encountered in the Study Area. • No candidate habitat for woodland raptor nesting. 	<ul style="list-style-type: none"> • Presence of 1 or more active nests from species list is considered significant. • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
	Barred Owl Broad-winged Hawk	CUP3	<p>200m buffer.</p> <ul style="list-style-type: none"> Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. In disturbed sites, nests may be used again, or a new nest will be near old nest. 			<p>nest or 28ha area of habitat is the SWH (the 28ha habitat area would be applied where optimal habitat is irregularly shaped around the nest).</p> <ul style="list-style-type: none"> Barred Owl – A 200m radius around the nest is the SWH. Broad-winged Hawk and Coopers Hawk – A 100m radius around the nest is the SWH. Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. Conduct field investigations from early March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area.
Turtle Nesting Areas	Midland Painted Turtle Special Concern: Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	<ul style="list-style-type: none"> Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. For an area to function as a turtle nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. 	No	<ul style="list-style-type: none"> There were no natural areas of exposed mineral soil in the Study Area. No candidate habitat for turtle nesting areas. 	<ul style="list-style-type: none"> Presence of 5 or more nesting Midland Painted Turtles. One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method.

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
Seeps and Springs	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	<ul style="list-style-type: none"> Where ground water comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs. 	<ul style="list-style-type: none"> Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. 	No	<ul style="list-style-type: none"> There were no seeps/springs observed in any of the forest communities in the Study Area. No candidate wildlife habitat for seeps and springs. 	<ul style="list-style-type: none"> Presence of a site with 2 or more seeps/springs should be considered SWH. The area of a ELC forest ecosite or an eco-element within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat.
Amphibian Breeding Habitat (Woodland)	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	<p>All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD</p> <ul style="list-style-type: none"> Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians. 	<ul style="list-style-type: none"> Presence of a wetland, pond or woodland pool (including vernal pools) >500m² (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. 	No	<ul style="list-style-type: none"> Spring Peepers and Gray Tree Frogs were observed calling with a Call Level Code of 3 within and directly outside of amphibian survey station A, east of FODM1-1 community. No woodlands containing ponds or pools of water observed within the Study Area. No candidate wildlife habitat for amphibian breeding habitat (woodlands). 	<ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. A combo of observational and call count surveys required during the spring (March-June). The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat.
Amphibian Breeding Habitat (Wetlands)	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Northern Leopard Pickerel Frog Green Frog Mink Frog Bullfrog	<p>SW MA FE BO OA SA</p> <ul style="list-style-type: none"> Typically, these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands. 	<ul style="list-style-type: none"> Wetlands >500m² (about 25m diameter), supporting high species diversity are significant. Some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment 	No	<ul style="list-style-type: none"> Amphibian surveys showed no significant number of species breeding within wetland areas. 	<ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3 or Wetland with confirmed breeding Bullfrogs are significant. The ELC ecosite wetland area and the shoreline are the SWH. A combo of observational and call

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
			<p>from predators.</p> <ul style="list-style-type: none"> • Bullfrogs require permanent water bodies with abundant emergent vegetation. 			<p>count surveys will be required during the spring (March-June).</p> <ul style="list-style-type: none"> • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered.
Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)						
Woodland Area-Sensitive Bird Breeding Habitat	<p>Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Pileated Woodpecker Special Concern: Cerulean Warbler Canada warbler</p>	<p>FOC FOM FOD SWC SWM SWD</p>	<ul style="list-style-type: none"> • Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30ha. • Interior forest habitat is at least 200m from forest edge habitat. 	No	<ul style="list-style-type: none"> • No forest interior habitat was identified in the Study Area. • No candidate habitat for woodland area-sensitive breeding bird habitat. 	<ul style="list-style-type: none"> • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. *Any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. • Conduct field investigations in spring and early summer. • Specific evaluation methods required.
Marsh Bird Breeding Habitat	<p>American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Green Heron Trumpeter Swan Special Concern: Black Tern Yellow Rai</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites</p>	<ul style="list-style-type: none"> • Nesting occurs in wetlands. • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. • For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. 	No	<ul style="list-style-type: none"> • Meadow marsh communities (MAM) observed in the Study Area contained limited areas with shallow water and emergent vegetation. • No candidate habitat for marsh breeding birds. 	<ul style="list-style-type: none"> • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species. • Any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. • Area of the ELC ecosite is the SWH. • Breeding surveys should be done in May/June. • Specific evaluation methods required.

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
Open Country Bird Breeding Habitat	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow Special Concern: Short-eared Owl	CUM1 CUM2	<ul style="list-style-type: none"> Large grassland areas (includes natural and cultural fields and meadows) >30ha. Grasslands not Class 1 or 2 agricultural lands and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years). Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. 	No	<ul style="list-style-type: none"> No meadows >30ha was identified. No candidate habitat for open country breeding bird habitat. 	<ul style="list-style-type: none"> Presence of nesting or breeding of 2 or more of the listed species. A field with 1 or more breeding Short-eared Owls is to be considered SWH. The area of SWH is the contiguous ELC ecosite field areas. Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. Specific evaluation methods required.
Shrub/Early Successional Bird Breeding Habitat	<p><u>Indicator Spp:</u> Brown Thrasher Clay-coloured Sparrow</p> <p><u>Common Spp:</u> Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher</p> <p><u>Special Concern:</u> Yellow breasted Chat Golden-winged Warbler</p>	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 <ul style="list-style-type: none"> Patches of shrub ecosites can be complexed into a larger habitat for some bird species. 	<ul style="list-style-type: none"> Large field areas succeeding to shrub and thicket habitats >10ha in size. Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no rowcropping, haying or livestock pasturing in the last 5 years). Shrub thicket habitats (>10ha) are most likely to support and sustain a diversity of these species. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. 	No	<ul style="list-style-type: none"> No shrub/early successional communities >10 ha. No candidate habitat for shrub/early successional breeding bird habitat. 	<ul style="list-style-type: none"> Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as SWH. The area of the SWH is the contiguous ELC ecosite field/thicket area. Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. Specific evaluation methods required
Terrestrial Crayfish	Chimney or Digger Crayfish; (<i>Fallicambarus fodiens</i>) Devil Crayfish or Meadow Crayfish (<i>Cambarus diogenes</i>)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish.	<ul style="list-style-type: none"> Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. Usually, the soil is not too moist so that the tunnel is well formed. Can often be found far from water. 	No	<ul style="list-style-type: none"> No terrestrial crayfish chimneys were recorded during field investigations. 	<ul style="list-style-type: none"> Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites. Area of ELC ecosite or an eco-element area of meadow marsh or swamp within the larger ecosite area is the SWH.

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
						<ul style="list-style-type: none"> • Surveys should be done April to August in temporary or permanent water. • Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult.
NHIC species element occurrences and field observations of Special Concern and rare wildlife species	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10km grid.	Identified within a 1 or 10km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Yes	<ul style="list-style-type: none"> • Confirmed habitat for Eastern Wood-Pewee is present in the Study Area within the FODM2-1 community. • Potential habitat for Woodland Vole is present in the FODM2-1, FODM1-1 and WODM4-4 communities. • Several monarch observations have been made on the Property. • Presence of provincially rare plant species, Cup Plant (S2), in the WODb community. 	<ul style="list-style-type: none"> • Visual confirmation of foraging Barn Swallows during two breeding bird surveys. • Singing male Eastern Wood-pewee detected in suitable breeding habitat.
Animal Movement Corridors						
Amphibian Movement Corridors	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Northern Leopard Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. Corridors will be determined based on identifying the significant breeding habitat for these species.	Movement corridors between breeding habitat and summer habitat. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from this Schedule.	No	<ul style="list-style-type: none"> • No candidate amphibian movement corridors on site. 	<ul style="list-style-type: none"> • Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. • Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. • Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat.

Wildlife Habitat	Wildlife Species	Candidate SWH		Potential on Site	Rationale	Confirmed Defining Criteria
		ELC Ecosite Codes	Habitat Criteria			
Exceptions for EcoRegion 7E						
Bat Migratory Stopover Area	N/A	No specific ELC types.	Long distance migratory bats typically migrate during late summer and early fall from summer breeding habitats throughout Ontario to southern wintering areas. Their annual fall migration may concentrate these species of bats at stopover areas.	No	No habitat features on site.	Only confirmed site is Long Point. Confirmation criteria and habitat areas are still being determined.



Appendix K

Vascular Plant List (GeoProcess, 2025)

Scientific	Common Name	Polygon(s)	S-rank*	CoC**	CoW***	Hamilton Status****
<i>Acalypha rhomboidea</i>	Common Three-seeded Mercury	CVR	S5	0	3	C
<i>Acer negundo</i>	Manitoba Maple	WODa;CUM1-1;WODb;THDM2;SWT2-2a	S5	0	0	C
<i>Acer platanoides</i>	Norway Maple	CVR;WODb;WODM4-4b	SNA		5	IX
<i>Acer rubrum</i>	Red Maple	FODM2-1;FODM1-1	S5	4	0	C
<i>Acer saccharinum</i>	Silver Maple	WODa;SWDM4-1a	S5	5	-3	C
<i>Acer saccharum</i>	Sugar Maple	FODM2-1	S5	4	3	C
<i>Actaea pachypoda</i>	White Baneberry	FODM2-1	S5	6	5	C
<i>Agrimonia gryposepala</i>	Hooked Agrimony	CUM1-1;SWDM4-1a;FODM1-1	S5	2	3	C
<i>Agrostis gigantea</i>	Redtop	MAMM2-4	SNA		-3	IX
<i>Ailanthus altissima</i>	Tree-of-heaven	FODM2-1	SNA		5	IC
<i>Alliaria petiolata</i>	Garlic Mustard	CVR;WODb;FODM2-1	SNA		0	IC
<i>Ambrosia artemisiifolia</i>	Common Ragweed	CUM1-1;CVR	S5	0	3	C
<i>Ambrosia trifida</i>	Great Ragweed	WODc;THDM2	S5	0	0	U
<i>Amelanchier sp.</i>	Serviceberry species	WODb				
<i>Amphicarpaea bracteata</i>	American Hog-peanut	WODc	S5	4	0	C
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	FODM2-1	S5	4	3	C
<i>Arctium sp.</i>	Burdock species	CVR				
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	WODM4-4a;WODa;FODM2-1	S5	5	-3	C
<i>Artemisia vulgaris</i>	Common Wormwood	CUM1-1	SNA		5	IX
<i>Asclepias syriaca</i>	Common Milkweed	CUM1-1;THDM2;MAMM2-4;SWT2-2a	S5	0	5	C
<i>Athyrium filix-femina</i>	Common Lady Fern	WODM4-4a;SWDM4-1a;FODM2-1	S5	4	0	C
<i>Betula papyrifera</i>	Paper Birch	CVR	S5	2	3	C
<i>Betula populifolia</i>	Grey Birch	WODb	S4	5	0	
<i>Bromus inermis</i>	Smooth Brome	WODc	SNA		5	IC
<i>Carex retrorsa</i>	Retorse Sedge	SWDM4-1a	S5	5	-5	C
<i>Carex sp.</i>	Sedge species	THDM2-4;FODM2-1				
<i>Carex vulpinoidea</i>	Fox Sedge	MAMM2-4	S5	3	-5	C

Scientific	Common Name	Polygon(s)	S-rank*	CoC**	CoW***	Hamilton Status****
<i>Carya cordiformis</i>	Bitternut Hickory	FODM2-1;FODM1-1	S5	6	0	C
<i>Carya ovata</i>	Shagbark Hickory	WODM4-4b;FODM2-1;FODM1-1	S5	6	3	C
<i>Catalpa speciosa</i>	Northern Catalpa	WODa;CVR	SNA		3	IR
<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade	WODM4-4a;CVR;WODb;SWDM4-1a;WODM4-4b;WODc;FODM2-1;FODM1-1	S5	2	3	C
<i>Cirsium arvense</i>	Canada Thistle	CVR;MAMM2-4	SNA		3	IC
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	FODM2-1	S5	6	3	C
<i>Cornus racemosa</i>	Grey Dogwood	WODM4-4a;CUM1-1;WODb;THDM2-4;MAMM1-12;SWDM4-1b;MAMM2-4;SWD4;SWT2-2a;FODM1-1;SWDM4-1c;SWT2-2b	S5	2	0	C
<i>Cornus sericea</i>	Red-osier Dogwood	WODa;CVR;WODb;SWDM4-1a;THDM2-4;THDM2;MAMM1-12;MAMM2-4;SWD4;FODM1-1;SWDM4-1c;SWT2-2b	S5	2	-3	C
<i>Crataegus sp.</i>	Hawthorn species	FODM2-1				
<i>Cyperus esculentus</i>	Perennial Yellow Flatsedge	MAMM2-4	S5	1	-3	C
<i>Dactylis glomerata</i>	Orchard Grass	CUM1-1;CVR	SNA		3	IC
<i>Daucus carota</i>	Wild Carrot	CUM1-1;CVR;THDM2;MAMM2-4	SNA		5	IC
<i>Digitaria sp.</i>	Digitaria grass species	CVR				
<i>Dipsacus fullonum</i>	Common Teasel	MAMM2-4	SNA		3	IX
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	WODb;FODM2-1	S5	5	-3	C
<i>Echinocystis lobata</i>	Wild Cucumber	WODM4-4a;WODa;WODb;SWDM4-1a;FODM2-1	S5	3	-3	C
<i>Elaeagnus umbellata</i>	Autumn Olive	CUM1-1;CVR	SNA		3	IX
<i>Elymus repens</i>	Quackgrass	WODM4-4a;CVR	SNA		3	IC

Scientific	Common Name	Polygon(s)	S-rank*	CoC**	CoW***	Hamilton Status****
<i>Epilobium ciliatum</i>	Northern Willowherb	CUM1-1;WODb;SWDM4-1a;MAMM1-12	S5	3	-3	C
<i>Epilobium coloratum</i>	Purple-veined Willowherb	SWDM4-1a	S5	3	-5	C
<i>Epilobium parviflorum</i>	Small-flowered Hairy Willowherb	MAMM1-12	SNA		3	IX
<i>Equisetum arvense</i>	Field Horsetail	MAMM1-12;SWDM4-1b;FODM1-1;SWT2-2b	S5	0	0	C
<i>Erigeron annuus</i>	Annual Fleabane	CUM1-1;CVR;SWDM4-1a;WODM4-4b;WODc;FODM1-1;SWT2-2b	S5	0	3	C
<i>Erigeron canadensis</i>	Canada Horseweed	CVR	S5	0	3	C
<i>Eupatorium perfoliatum</i>	Common Boneset	SWT2-2b	S5	2	-3	C
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	CUM1-1;WODb;MAMM2-4;SWDM4-1c;SWT2-2b	S5	2	0	C
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed	WODa;SWDM4-1a;THDM2-4;MAMM1-12;MAMM2-4;MAMM1-2;SWDM4-1c	S5	3	-5	C
<i>Fragaria vesca</i>	Woodland Strawberry	WODa;WODb	S5	4	3	C
<i>Fragaria virginiana</i>	Wild Strawberry	CVR	S5	2	3	C
<i>Frangula alnus</i>	Glossy Buckthorn	SWDM4-1a	SNA		0	IX
<i>Fraxinus americana</i>	White Ash	FODM2-1	S4	4	3	C
<i>Fraxinus pennsylvanica</i>	Red Ash	WODM4-4b;FODM1-1	S4	3	-3	C
<i>Fraxinus sp.</i>	Ash species	WODa				
<i>Geranium robertianum</i>	Herb-Robert	FODM2-1	S5	2	3	C
<i>Geum canadense</i>	Canada Avens	WODM4-4a;FODM2-1	S5	3	0	C
<i>Geum laciniatum</i>	Rough Avens	WODM4-4a;WODa;CUM1-1;CVR;WODb;THDM2-4;WODc;SWDM4-1b;FODM1-1	S4	4	-3	C
<i>Geum sp.</i>	Avens species	WODb;SWDM4-1a;WODM4-4b				
<i>Glechoma hederacea</i>	Ground-ivy	WODa;CVR;THDM2-4	SNA		3	IC

Scientific	Common Name	Polygon(s)	S-rank*	CoC**	CoW***	Hamilton Status****
<i>Gleditsia triacanthos</i>	Honey Locust	CVR	S2?	8	0	IX
<i>Hemerocallis fulva</i>	Orange Daylily	WODb	SNA		5	IX
<i>Hesperis matronalis</i>	Dame's Rocket	WODM4-4a	SNA		3	IC
<i>Hieracium sp.</i>	Hawkweed species	WODa				
<i>Impatiens capensis</i>	Spotted Jewelweed	SWDM4-1a;THDM2-4;MAMM1-12;SWDM4-1b;MAMM1-2;SWT2-2a	S5	4	-3	C
<i>Juglans nigra</i>	Black Walnut	WODM4-4a;WODa;CUM1-1;CVR;WODb;SWDM4-1a;WODc;THDM2;MAMM1-12;SWDM4-1b;FODM1-1;SWDM4-1c	S4?	5	3	C
<i>Juncus sp.</i>	Rush species	MAMM2-4;SWT2-2b				
<i>Lactuca serriola</i>	Prickly Lettuce	CVR	SNA		3	IX
<i>Lamium galeobdolon</i>	Yellow Archangel	WODa	SNA			
<i>Lapsana communis</i>	Common Nipplewort	CVR;WODb	SNA		3	IX
<i>Lobelia inflata</i>	Indian-tobacco	WODc	S5	3	3	C
<i>Lobelia siphilitica</i>	Great Blue Lobelia	SWT2-2b	S5	6	-3	C
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	WODM4-4a;CVR;FODM2-1	SNA		3	IX
<i>Lonicera sp.</i>	Honeysuckle species	WODa;WODb;SWDM4-1a;THDM2-4;SWDM4-1b;FODM1-1;SWDM4-1c				
<i>Lycopus americanus</i>	American Water-horehound	MAMM2-4	S5	4	-5	C
<i>Lythrum salicaria</i>	Purple Loosestrife	SWDM4-1a;THDM2-4;MAMM1-12;SWDM4-1b;MAMM2-4;MAMM1-2;SWT2-2a;SWDM4-1c;SWT2-2b	SNA		-5	IC
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley	FODM2-1	S5	5	3	C
<i>Maianthemum racemosum</i>	Large False Solomon's Seal	FODM2-1	S5	4	3	C
<i>Malus pumila</i>	Common Apple	THDM2;FODM1-1	SNA		5	IX
<i>Matteuccia struthiopteris</i>	Ostrich Fern	WODb	S5	5	0	C
<i>Morus alba</i>	White Mulberry	WODa;WODc;CVR;THDM2	SNA		0	IC
<i>Myosotis sylvatica</i>	Woodland Forget-me-not	CVR	SNA		5	IX

Scientific	Common Name	Polygon(s)	S-rank*	CoC**	CoW***	Hamilton Status****
<i>Oenothera biennis</i>	Common Evening-primrose	CVR;FODM1-1	S5	0	3	C
<i>Oenothera sp.</i>	Primrose species	SWT2-2b				
<i>Onoclea sensibilis</i>	Sensitive Fern	WODM4-4a;CVR;SWDM4-1a;SWDM4-1b;MAMM2-4;FODM1-1;SWDM4-1c	S5	4	-3	C
<i>Ostrya virginiana</i>	Eastern Hop-hornbeam	FODM1-1	S5	4	3	C
<i>Oxalis sp.</i>	Wood-sorrel species	CVR				
<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel	WODb;THDM2-4	SNA		3	C
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	WODM4-4b;THDM2-4;WODc;THDM2;FODM2-1;FODM1-1;SWDM4-1a	S4?	6	3	C
<i>Parthenocissus vitacea</i>	Thicket Creeper	WODM4-4a;WODa;CVR	S5	4	3	C
<i>Pastinaca sativa</i>	Wild Parsnip	THDM2	SNA		5	IX
<i>Persicaria virginiana</i>	Virginia Smartweed	WODM4-4a;SWDM4-1a;WODM4-4b;FODM2-1;FODM1-1	S4	6	0	C
<i>Phalaris arundinacea var. arundinacea</i>	Reed Canarygrass	SWDM4-1a;SWDM4-1b;MAMM2-4;MAMM1-2;SWT2-2a;FODM1-1	S5	0	-3	C
<i>Phleum pratense</i>	Common Timothy	CVR	SNA		3	IC
<i>Phragmites australis ssp. Australis</i>	European Reed	MAMM1-12;SWDM4-1b;MAMM2-4	SNA		-3	IC
<i>Physostegia virginiana</i>	Virginia False Dragonhead	WODb	S4	8	-3	R
<i>Picea glauca</i>	White Spruce	CVR	S5	6	3	C
<i>Picea pungens</i>	Blue Spruce	CVR;WODb	SNA		3	IR
<i>Picris hieracioides</i>	Hawkweed Oxtongue	CUM1-1;SWT2-2a	SNA		5	IR
<i>Pinus strobus</i>	Eastern White Pine	FODM1-1	S5	4	3	C
<i>Pinus sylvestris</i>	Scots Pine	WODM4-4b	SNA		3	IX
<i>Plantago lanceolata</i>	English Plantain	CVR	SNA		3	IC
<i>Plantago major</i>	Common Plantain	CVR	SNA		3	IC
<i>Poa pratensis</i>	Kentucky Bluegrass	CVR	S5	0	3	

Scientific	Common Name	Polygon(s)	S-rank*	CoC**	CoW***	Hamilton Status****
<i>Poaceae sp.</i>	Grass species	CVR				
<i>Podophyllum peltatum</i>	May-apple	FODM2-1	S5	5	3	C
<i>Populus balsamifera</i>	Balsam Poplar	SWT2-2b	S5	4	-3	C
<i>Populus deltoides</i>	Eastern Cottonwood	SWDM4-1b;MAMM2-4;SWD4	S5	4	0	C
<i>Populus tremuloides</i>	Trembling Aspen	CUM1-1;CVR;WODb;FODM1-1	S5	2	0	C
<i>Potentilla norvegica</i>	Rough Cinquefoil	WODa	S5	0	0	X
<i>Potentilla sp.</i>	Cinquefoil species	FODM1-1				
<i>Prunus avium</i>	Sweet Cherry	WODc	SNA		5	IX
<i>Prunus persica</i>	Peach	CVR	SNA		5	
<i>Prunus serotina</i>	Black Cherry	WODM4-4a;WODM4-4b;FODM2-1	S5	3	3	C
<i>Prunus sp.</i>	Cherry species	FODM1-1				
<i>Quercus macrocarpa</i>	Bur Oak	WODb	S5	5	3	C
<i>Quercus rubra</i>	Northern Red Oak	FODM2-1;FODM1-1	S5	6	3	C
<i>Ranunculus abortivus</i>	Kidney-leaved Buttercup	WODa	S5	2	0	C
<i>Ranunculus acris</i>	Common Buttercup	SWDM4-1a	SNA		0	IC
<i>Ranunculus recurvatus</i>	Hooked Buttercup	SWDM4-1a	S5	4	-3	C
<i>Rhamnus cathartica</i>	European Buckthorn	CVR;WODb;SWDM4-1a;THDM2-4;THDM2;FODM2-1;MAMM1-12;SWDM4-1b;MAMM2-4;SWD4;FODM1-1;SWDM4-1c;SWT2-2b	SNA		0	IC
<i>Rhus typhina</i>	Staghorn Sumac	WODa;CUM1-1;CVR;THDM2;FODM1-1	S5	1	3	C
<i>Ribes americanum</i>	American Black Currant	WODa;SWDM4-1a	S5	4	-3	C
<i>Ribes sp.</i>	Currant species	FODM2-1				
<i>Robinia hispida</i>	Bristly Locust	CVR	SNA		5	
<i>Robinia pseudoacacia</i>	Black Locust	CUM1-1;WODb;WODc;THDM2	SNA		3	IC

Scientific	Common Name	Polygon(s)	S-rank*	CoC**	CoW***	Hamilton Status****
<i>Rosa multiflora</i>	Multiflora Rose	WODM4-4a;WODa;CVR;WODb;SWDM4-1a;WODM4-4b;THDM2-4;WODc;FODM2-1;MAMM1-12;MAMM2-4;SWT2-2a;FODM1-1;SWDM4-1c;SWT2-2b	SNA		3	IC
<i>Rubus allegheniensis</i>	Allegheny Blackberry	WODb;FODM2-1;FODM1-1	S5	2	3	C
<i>Rubus idaeus</i>	Red Raspberry	WODb;FODM2-1;SWDM4-1b;SWT2-2a;FODM1-1	S5	2	3	
<i>Rubus occidentalis</i>	Black Raspberry	WODM4-4a;WODa;CVR;WODb;SWDM4-1a;WODM4-4b;WODc	S5	2	5	C
<i>Rudbeckia triloba</i>	Brown-eyed Susan	THDM2	SNA		3	IX
<i>Rumex crispus</i>	Curled Dock	MAMM2-4	SNA		0	IX
<i>Rumex obtusifolius</i>	Bitter Dock	CUM1-1	SNA		-3	IX
<i>Rumex sp.</i>	Dock species	CUM1-1				
<i>Salix alba</i>	White Willow	CVR;WODb;SWDM4-1a	SNA		-3	IX
<i>Salix babylonica</i>	Weeping Willow	SWD4;SWDM4-1c				
<i>Salix bebbiana</i>	Bebb's Willow	FODM1-1	S5	4	-3	C
<i>Salix eriocephala</i>	Cottony Willow	WODa;MAMM1-12;SWD4;SWT2-2a;FODM1-1;SWDM4-1c;SWT2-2b	S5	4	-3	C
<i>Salix euxina</i>	Crack Willow	SWDM4-1a;THDM2-4	SNA		0	IX
<i>Salix interior</i>	Sandbar Willow	SWT2-2b	S5	1	-3	C
<i>Salix x fragilis</i>	(<i>Salix alba</i> X <i>Salix euxina</i>)	SWDM4-1b;SWT2-2a;SWDM4-1c	SNA			hyb
<i>Scirpus atrovirens</i>	Dark-green Bulrush	MAMM2-4	S5	3	-5	C
<i>Scirpus cyperinus</i>	Common Woolly Bulrush	MAMM2-4	S5	4	-5	C
<i>Setaria viridis</i>	Green Foxtail	CVR	SNA		5	IX
<i>Silphium perfoliatum</i>	Cup Plant	WODb	S2	9	-3	
<i>Solanum dulcamara</i>	Bittersweet Nightshade	CVR;SWDM4-1a	SNA		0	IC

Scientific	Common Name	Polygon(s)	S-rank*	CoC**	CoW***	Hamilton Status****
<i>Solidago altissima</i>	Tall Goldenrod	WODc;THDM2;SWDM4-1b;MAMM2-4;FODM1-1	S5	1	3	C
<i>Solidago canadensis</i>	Canada Goldenrod	WODM4-4a;CUM1-1;CVR	S5	1	3	
<i>Solidago sp.</i>	Goldenrod species	WODa;WODb;SWDM4-1a;WODM4-4b;FODM2-1				
<i>Sonchus arvensis</i>	Field Sow-thistle	CUM1-1	SNA		3	IX
<i>Symphotrichum ericoides</i>	White Heath Aster	CUM1-1	S5	4	3	C
<i>Symphotrichum firmum</i>	Glossy-leaved Aster	SWDM4-1a;MAMM2-4	S4?	4	-3	
<i>Symphotrichum lanceolatum</i>	Panicled Aster	WODa;CUM1-1;CVR;WODb;SWDM4-1a;THDM2-4;MAMM1-12;SWDM4-1b;MAMM2-4;MAMM1-2;SWD4;SWT2-2a;FODM1-1;SWDM4-1c;SWT2-2b	S5	3	-3	C
<i>Symphotrichum lateriflorum</i>	Calico Aster	WODb;FODM2-1	S5	3	0	C
<i>Symphotrichum novae-angliae</i>	New England Aster	WODa;CUM1-1;MAMM2-4;SWT2-2b	S5	2	-3	C
<i>Symphotrichum ontarionis</i>	Ontario Aster	SWDM4-1a	S5	6	0	R
<i>Symphotrichum pilosum</i>	Old Field Aster	CUM1-1;CVR;FODM1-1	S5		3	
<i>Symphotrichum sp.</i>	Aster species	FODM1-1				
<i>Taraxacum officinale</i>	Common Dandelion	WODa	SNA		3	IC
<i>Taxus cuspidata</i>	Japanese Yew	CVR				
<i>Thuja occidentalis</i>	Eastern White Cedar	WODa;CVR;WODb	S5	4	-3	C
<i>Tilia americana</i>	Basswood	FODM2-1;FODM1-1	S5	4	3	C
<i>Toxicodendron radicans</i>	Poison Ivy	FODM2-1	S5	2	0	C
<i>Trifolium hybridum</i>	Alsike Clover	CUM1-1	SNA		3	IC
<i>Trifolium pratense</i>	Red Clover	CVR	SNA		3	IC
<i>Typha latifolia</i>	Broad-leaved Cattail	MAMM1-2	S5	1	-5	C
<i>Typha x glauca</i>	(<i>Typha angustifolia</i> X <i>Typha latifolia</i>)	MAMM1-12	SNA		-5	hyb
<i>Ulmus americana</i>	White Elm	FODM2-1	S5	3	-3	C
<i>Ulmus sp.</i>	Elm species	FODM1-1				

Scientific	Common Name	Polygon(s)	S-rank*	CoC**	CoW***	Hamilton Status****
<i>Urtica gracilis</i>	Slender Stinging Nettle	WODb;FODM2-1	S5			C
<i>Verbena hastata</i>	Blue Vervain	MAMM2-4	S5	4	-3	C
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell	WODa;WODb	SU		0	IX
<i>Viburnum opulus</i>	Cranberry Viburnum	WODa;SWDM4-1a;SWDM4-1a;THDM2-4;FODM2-1;SWDM4-1c	S5	5	-3	IX
<i>Viola sp.</i>	Violet species	CVR;FODM2-1				
<i>Vitis riparia</i>	Riverbank Grape	CVR;WODb;SWDM4-1a;WODM4-4b;THDM2-4;WODc;THDM2;FODM2-1;MAMM2-4;SWD4;SWT2-2a;FODM1-1;SWDM4-1c;SWT2-2b	S5	0	0	C

* Srank refers to the subnational rank that indicates the rarity and risk of a species within a region, ranging from S1, which indicates a critically imperiled species, to S5, which indicates a regionally secure species.

** CoC refers to the coefficient of conservatism, which indicates species sensitivity to disturbance on a scale of 0 to 10, with the most conservative or sensitive plants receiving a score of 10 and the least receiving a score of 0.

*** CoW refers to the coefficient of wetness, which indicates a species' tolerance for soil moisture on a scale of 5 to -5, with -5 being species with a high tolerance for soil moisture, and 5 being species with a low tolerance.

**** The letter codes given for species status in Hamilton are: I – introduced, C – common, U – uncommon, R – rare, H – historic records only (generally >30 years), X – present; status unknown or not specified in source lists, ? – unconfirmed report, hyb – hybrid species. Species with no code given were not given a status.



Appendix L

Butternut Assessment (GeoProcess, 2025)

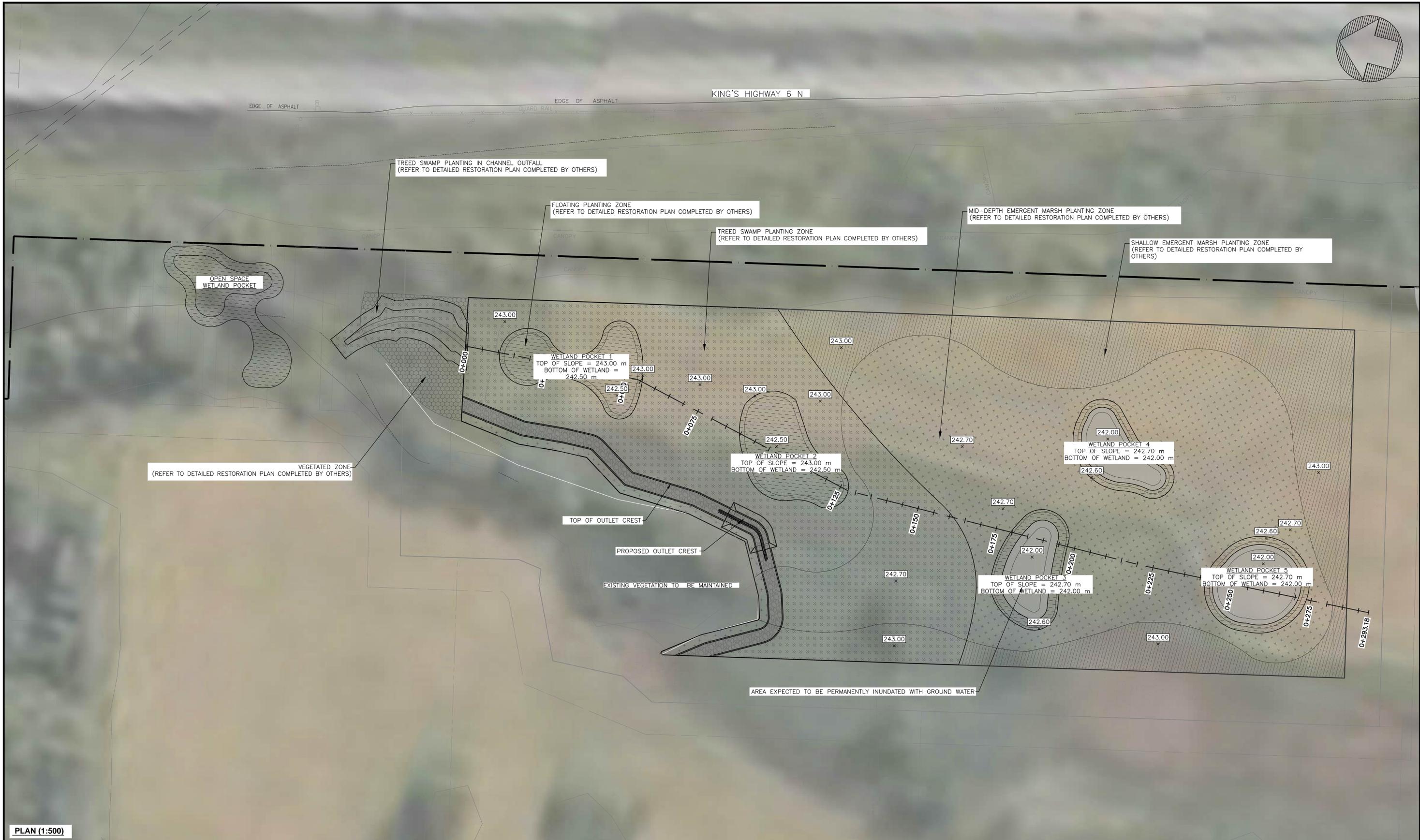
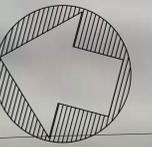


Photo 1: Base of the trunk, Photo 2: Twigs, showing the pith of the stem, and nuts, Photo 3: Tree canopy, Photo 4: The trunk and bark.



Appendix M

Proposed Wetland Plan Drawing No. 1



PLAN (1:500)



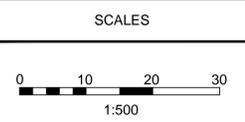
Knowledge
Research
Consulting
PO Box 65506
Dundas PO
Dundas, ON
L9H 6V6
(416) 452-5037
www.geoprocessresearch.com

LEGEND

	PERMANENTLY INUNDATED AREA
	PROPOSED PLANTING ZONE : TREE SWAMP
	PROPOSED PLANTING ZONE: SHALLOW EMERGENT MARSH
	PROPOSED PLANTING ZONE: MID-DEPTH EMERGENT MARSH
	PROPOSED PLANTING ZONE: FLOATING

PROPOSED ELEVATIONS
 243.00

SURFACE DATA:
 Existing Topographical
 information supplied
 by A.T. McLaren Limited
 on November 8, 2021
 Vertical Datum: CGVD28/78
 Horizontal Datum: NAD83 (CSRS)
 All dimensions in metres unless
 specified otherwise. Contours
 have 0.2 m intervals



No.	REVISIONS	DATE	INITIAL
01	FOR DISCUSSION ONLY	09/26/2025	KG
02	RE-ISSUED FOR DISCUSSION ONLY	10/29/2025	KG

Wetland Realignment Design 140 Garner Road East, Ancaster Proposed Plan		Scale: as shown	Drawn By: SG	Drawing No. 01
		Date Issued: 10/29/2025	Checked By: KG	



Appendix N

Hydrometric Flow Monitoring (GeoProcess, 2025)

RESULTS MEMO

February 13, 2026



Ontari Holdings Ltd.

Re: Hydrometric Program Results Memo, 140 Garner Road East, Ancaster, Ontario

Kristina,

This memo summarizes the methodology and results of hydrometric monitoring and measurement activities completed between 2023 and 2024 by GeoProcess Research Associates (GeoProcess). Hydrometric monitoring was implemented to improve understanding of the hydraulic function of the wetland and inform the decision-making process related to the development application submitted for the Subject Property. Data collected was also utilized to validate the hydraulic model being developed by R.J. Burnside and help to establish the wetting and drying cycle of the wetland.

1. Methodology

The following provides the methodologies used to conduct the hydrometric field program. All work was undertaken to the highest possible standard of quality, per the *Water Survey of Canada* or *USGS* (where applicable) guidelines, where possible.

1.1. Station and Benchmark Installation

GeoProcess established a single hydrometric station in October 2023 on the Tributary of Ancaster Creek approximately 80 metres (m) downstream of the wetland outlet on the eastern extent of the Subject Property. Given the unconfined floodplain and upstream wetland condition, stream banks were not well defined throughout the Study Area. The station was established where banks regained definition, and the channel bed resembled a pool feature that would maintain water depths during drier periods when flows were intermittent. Approximately 0.5 m downstream of the station, the watercourse enters a culvert at a vehicle crossing, which provides a suitable section control for reliable water level measurements (Figure 1).



Figure 1. Station establishment on October 12th, 2023. Note the streambed was dry at the time of installation.

A steel logger housing was affixed to a 1 m steel iron bar (SIB) securely driven into the streambed. The top of the SIB is a reliable measuring point for in-situ water level measurements. GeoProcess installed one benchmark (steel T-bar with plastic safety end cap) on the left bank of the watercourse to establish a reference datum and tie it into the water level measuring point. The benchmark system was surveyed using a differential level (± 0.003 mm accuracy) for station integration into the datum. The system was subsequently surveyed using a Real-Time Kinematic (RTK) GPS (± 0.005 to ± 0.010 mm accuracy) for incorporation into a geodetic vertical datum (NAVD88 or equivalent). The benchmark will be checked annually to confirm system stability and apply any required stage calibrations.

1.2. Water Level

An Onset HOBO® submersible data logger was installed within the logger housing to collect water pressure and temperature at a 15-minute sampling interval. Barometric pressure and air temperature were acquired from an Environment Canada weather station (Climate ID: 6153193) located approximately 5 kilometres (km) southeast of the Subject Property for water level calculations. Rainfall data was also acquired from the Environment Canada station for comparative analysis. Data was downloaded concurrently with field visits for flow measurements and station maintenance. Discrete water level measurements were collected at the established measuring point while onsite for data calibration. Water levels were calibrated and compared to hourly and/or daily rainfall to monitor water level responses and validate flow conditions.

1.3. Discharge Measurements

Discharge measurements were conducted at various flow conditions required to establish a rating curve. A measurement cross-section was monumented downstream of the hydrometric station and section control in a location where laminar flow was observed (Figure 2). Measurements were taken at the same location during subsequent visits to ensure consistency. Flow measurements were collected using a SonTek FlowTracker handheld Acoustic Doppler Velocimeter (ADV). Aquarius® software was then utilized to store and analyze all water level and streamflow data to develop a rating curve and inform hydraulic modelling.



Figure 2. Upstream view of the watercourse at the established flow measurement cross-section located downstream of the station and logger.

2. Results

2.1. Field Visits

GeoProcess conducted multiple field visits to maintain the hydrometric station and measure discharge at various flow conditions. A summary of completed fieldwork is provided below in Table 1.

Table 1. Completed Fieldwork and Flow Conditions

Date/Time	Rainfall in Previous 24-Hours (mm)	Staff	Activity	Mean Gauge Height (MASL)	Discharge (m ³ /s)
2023-10-12 13:00 EST	0.0	T. Arsenault, A. Jinadu	Station Establishment	Channel Dry	
2023-10-26 14:30 EST	9.8	T. Arsenault, B. Bespolko	Station Maintenance	Channel Dry	
2023-11-09 11:40 EST	0.0	T. Arsenault, B. Bespolko	Flow Measurement	242.344	0.002
2024-01-03 16:30 EST	0.0	T. Arsenault, B. Bespolko	Flow Measurement	242.339	0.001
2024-01-10 09:00 EST	30.4	B. Bespolko	Flow Measurement	242.424	0.022
2024-01-26 11:50 EST	20.7	T. Arsenault, B. Bespolko	Station Maintenance	Channel Partially Frozen	
2024-03-27 08:00 EST	4.8	T. Arsenault, B. Bespolko	Flow Measurement	242.349	0.003
2024-03-27 11:00 EST	4.8	T. Arsenault, B. Bespolko	Flow Measurement	242.351	0.003
2024-07-15 15:30 EST	11.0	B. Bespolko	Flow Measurement	242.364	0.010

Six discharge measurements were collected during the monitoring period at a range of water depths and flows. During all field visits, observations of the control were taken to ensure it was clear of debris and vegetation that could potentially influence results. Measured discharge ranged from 0.001 to 0.022 m³/s, and mean gauge heights (stage) during these events ranged from 242.339 to 242.424 metres above sea level (MASL). At the time of installation, the watercourse was dry and was observed to dry periodically during prolonged periods with minimal rainfall and during the warmer summer months. This observation confirms the intermittent flow regime of the Tributary of Ancaster Creek and informs the wetting and drying cycle of the upstream wetland. At the gauge station, the channel bed and banks are heavily vegetated with grasses and rooted emergent aquatic vegetation. During moderate-to-high flow conditions, the watercourse flows beyond the defined low banks and extends into the floodplain, creating difficulty in accurately assessing discharge at high water levels.

2.2. Water Level

Continuous water level measurements were collected at a 15-minute sampling interval between October 2023 to present. It should be noted the data reflected in Figure 3 and Figure 4 below is inclusive of the most recent July download. The channel was observed to be dry when the site was established on October 12th, 2023, through to November 9th, 2023, where water depth rapidly increased following significant precipitation and was subsequently maintained. Through the monitoring period, water depth fluctuated in response to precipitation before drawing back down to an average water surface elevation of approximately 242.331 MASL. Throughout the entirety of the monitoring period, water levels ranged between 242.155 and 242.685 MASL. During the warmer early summer months in 2024, the watercourse was observed to dry periodically (depths below 242.155 MASL).

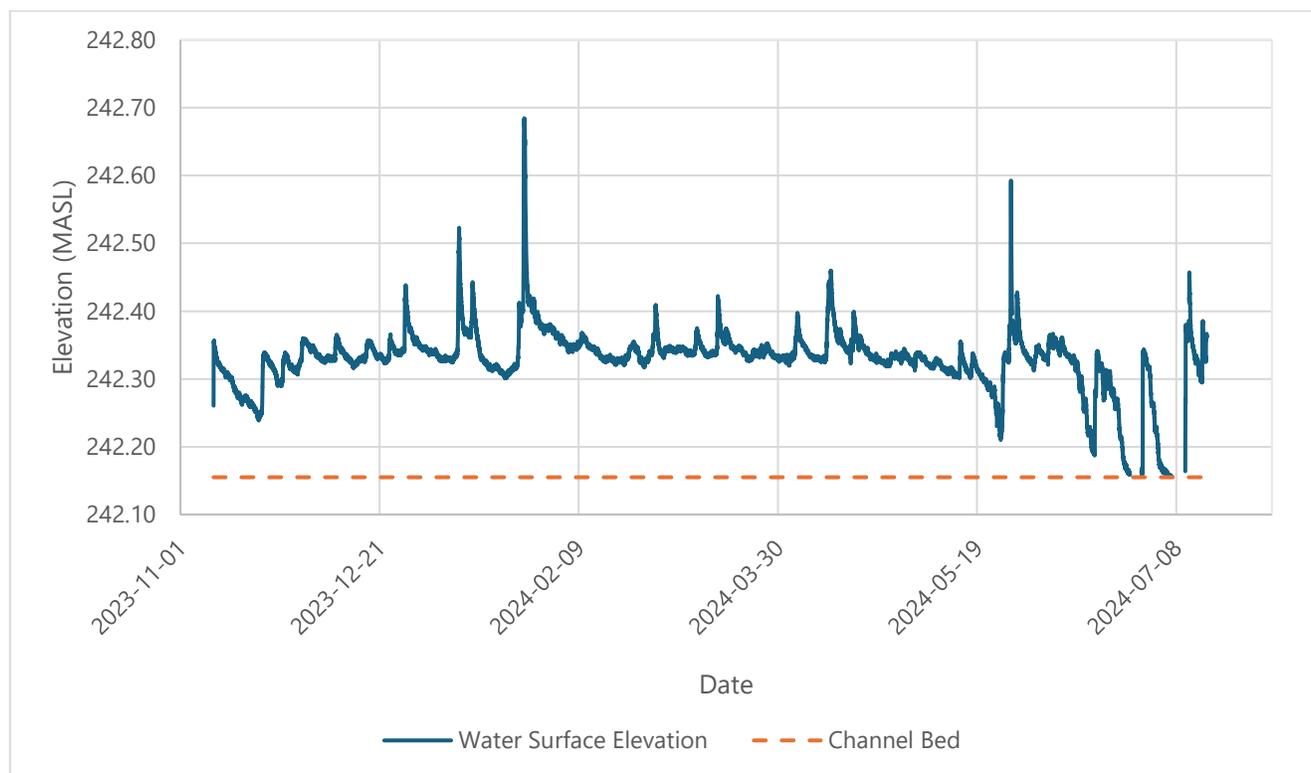


Figure 3. Water level between November 2023 and July 2024.

3. Analysis

A stage-discharge relationship was defined by relating measured discharge to the field-verified stage generated through continuous water level measurements, and a rating curve was developed using the Rating Review Tool in Aquarius®. Using the developed rating curve and continuous water level record, continuous discharge was modelled as shown in Figure 4 below. Through the monitoring period, discharge ranged from 0.000 to 0.172 m³/s. Modelled discharge was not estimated through periods of ice cover as no under-ice measurements were collected to define the relationship. Additional gaps in the discharge data below are reflective of no-flow conditions when water levels recede and of dry conditions.

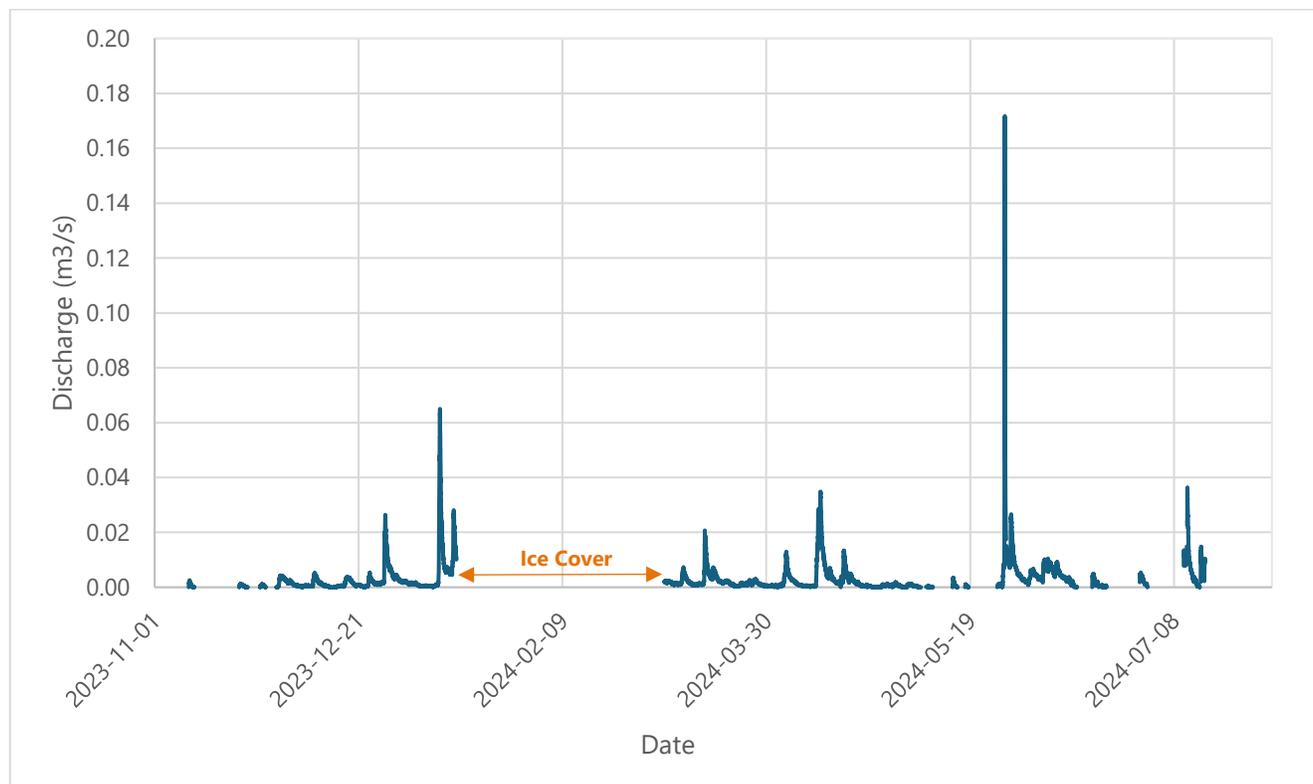


Figure 4. Discharge between November 2023 and July 2024.

4. Closing

Monitoring of the Tributary of Ancaster Creek downstream of the wetland outlet commenced in October 2023 and is ongoing. To date, six flow measurements have been collected during a range of conditions and continuous records of stage and discharge have been generated. Minor changes to the control have been observed throughout the monitoring period that have resulted in shifts to the stage-discharge relationship. Additional measurements are required to further refine and maintain the rating curve as watercourse conditions evolve because of vegetation growth, debris accumulation, scour, and/or deposition.

If you have any questions, please don't hesitate to contact the undersigned.

Regards,

GEOPROCESS RESEARCH ASSOCIATES INC



Breanne Bespolko, B.Sc.
Hydrometric and Water Resource Specialist



Reviewer
Ken Glasbergen, MSc., ERPG
Senior Ecologist, Principal