

April 5, 2022

# Ainley Farm Environmental Impact Study

Addendum # 2

Prepared for

Black, Shoemaker, Robinson, Donaldson



north-south  
ENVIRONMENTAL

## **Project Study Team**

North-South Environmental Inc.

Sarah Mainguy - Project Manager, Report Editor

Grace Pitman - Report Author

Pauline Catling - Fieldwork, ISA Certified Arborist (ON-2721A)

Devin Bettencourt - Fieldwork, ISA Certified Arborist (ON-2831A)

Benjamin Meinen - GIS / Mapping

## Table of Contents

|  |    |
|--|----|
| 1. Introduction .....  | 1  |
| 1.1. Identification of Additional Tree Removal.....              | 1  |
| 2. Wetland and Woodland Boundary Staking.....                    | 1  |
| 3. Tree Inventory and Tree Preservation Plan.....                | 3  |
| 4. Wildlife and Habitat Inventories.....                         | 6  |
| 4.1. Bat Habitat .....   | 6  |
| 4.2. Bat Exit Surveys.....                                       | 7  |
| 4.3. Consultation with MECP .....                                | 7  |
| 4.4. Locations of Amphibian and Breeding Bird Point Counts ..... | 11 |
| 5. Significance and Impact to Features .....                     | 11 |
| 5.1. Assessment of Significance.....                             | 11 |
| 6. Subdivision Plan Revision and Trail Alignment.....            | 11 |
| 7. Impact to Wetland from Discharge of Stormwater.....           | 11 |
| 8. Grading Plan.....   | 12 |
| 9. Cumulative Impact Assessment .....                            | 15 |

## List of Tables

|  |    |
|--|----|
| Table 1. Summary of Compensation Requirements for Trees Proposed for Removal ..... | 6  |
| Table 2. Bat Survey Results.....   | 10 |

## List of Figures

|  |    |
|--|----|
| Figure 1. Ecological Land Classification, Woodland Dripline (surveyed November 13, 2021), and Amphibian Monitoring Stations.....                                       | 2  |
| Figure 2. Subdivision design, proposed trail (following current informal trail alignment), areas of proposed tree removal and areas of proposed tree compensation..... | 5  |
| Figure 3A. Trees with Bat Habitat - South Side of Study Area. ....   | 8  |
| Figure 3b. Trees with Bat Habitat - North Side of Study Area .....   | 9  |
| Figure 4. Proposed Development.....  | 13 |

Figure 5. Grading Plan ..... 14

## List of Appendices

APPENDIX 1 | Comments & Response Matrix ..... I  
APPENDIX 2 | Tree Protection and Compensation Plan ..... III  
APPENDIX 3 | Bat Habitat Snag Survey Results ..... V  
APPENDIX 4 | Correspondence with MECP Regarding Species at Risk Bats ..... VIII  
APPENDIX 5 | Technical Memo from GM BluePlan Re. Impacts to Wetland ..... XIV

## 1. Introduction

An Environmental Impact Study (EIS) for proposed development on Ainley Farm property was prepared by North-South Environmental Inc. (NSE) in 2017, followed by an Addendum in 2019 after receiving comments provided by the Grand River Conservation Authority (GRCA). Additional comments on the EIS and Addendum were provided by Natural Resource Solutions Inc (NRSI) through the peer review process for the Town of Centre Wellington. For each comment relating to natural heritage, a detailed response is provided in this second Addendum. **Appendix 1** summarizes which section addresses each of the comments.

### 1.1. Identification of Additional Tree Removal

This Addendum also addresses the impacts of additional tree removal along the south edge of the property, required for installation of the sanitary sewer that will connect to the sanitary pipe along Keating Drive. As noted in previous reports (the EIS and Addendum), the sewer will be installed along a drainage ditch between the woodland and the houses along Thomas Boulevard, with as few trees being removed as possible. This corridor has been established as the only feasible route for the sanitary sewer.

## 2. Wetland and Woodland Boundary Staking

The boundary of wetlands was staked with supervision of GRCA on September 24<sup>th</sup>, 2018. The results were reported in the previous Addendum in June, 2019. A third wetland (SWT 3-5) identified in the EIS was confirmed to have succeeded to a Red Raspberry (*Rubus idaeus* ssp. *strigosus*) thicket during wetland and woodland boundary confirmation with GRCA (as noted in previous EIS Addendum).

The woodland dripline boundary was revised and staked with members of NRSI and the Town present on November 13, 2021. The staked boundary is shown in **Figure 1**.

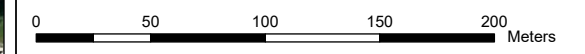
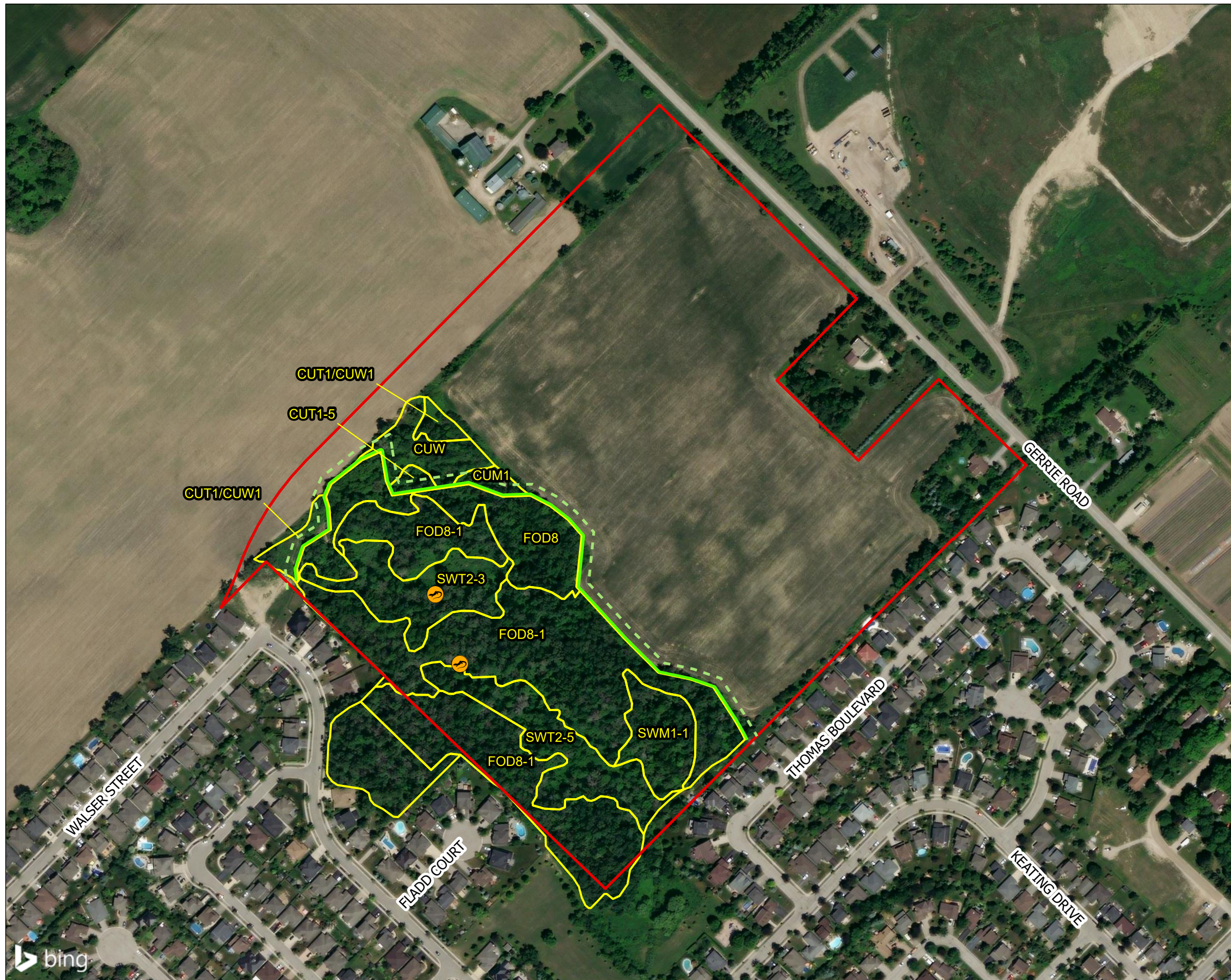
**Figure 1 | Ainley Subdivision**  
Ecological Land Classification

**Legend**

- Subject Property
- Woodland Dripline (surveyed November 13, 2021)
- Woodland Dripline Buffer (10 m)
- Amphibian Monitoring Station
- Ecological Land Classification (ELC)

**Vegetation Communities**

- CUM1** - Mineral Cultural Meadow
- CUT1** - Mineral Cultural Thicket
- CUT1-5** - Raspberry Cultural Thicket
- CUW** - Cultural Woodland
- CUW1** - Mineral Cultural Woodland
- FOD8** - Fresh-Moist Poplar-Sassafras Deciduous Forest
- FOD8-1** - Fresh-Moist Poplar Deciduous Forest
- SWM1-1** - White Cedar-Hardwood Mineral Mixed Swamp
- SWT2-3** - Red-osier Mineral Thicket Swamp
- SWT2-5** - Willow Organic Thicket Swamp



|                          |                     |        |
|--------------------------|---------------------|--------|
| Project Number<br>15-799 | Date:<br>2023-04-06 | N<br>▲ |
|--------------------------|---------------------|--------|

Map Produced by North South Environmental (NSE) Inc. This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE. Data Provided by: North South Environmental Inc. Imagery: Bing



### 3. Tree Inventory and Tree Preservation Plan

An updated inventory of trees that will potentially be removed was completed on November 30<sup>th</sup>, 2021, May 6<sup>th</sup> 2022, and May 13<sup>th</sup> 2022 by Pauline Catling, Senior Ecologist; ISA Certified Arborist (ON-2721A) and Devin Bettencourt, Junior Ecologist; ISA Certified Arborist (ON-2831A). A Tree Inventory Report and Tree Preservation Plan (TPP) was developed to identify which trees require removal and determine compensation. The TPP is appended to this report (**Appendix 2**).

The County of Wellington Conservation and Sustainable Use of Woodlands Tree By-law (5115-09) does not state specific details on tree compensation. Recommendations for tree compensation have been determined by Madison Postma, Registered Professional Forester from Natural Resource Solutions Inc. (NRSI) and approved by Mariana Iglesias, Senior Planner and Mat Alain, Urban Forestry Project Manager from the Township of Wellington.

Tree compensation for the removal of 35 municipally owned trees located in the southern portion of the study area (park north of Keating Dr.) and hedgerow / individual trees within the Subject Property will be compensated according to the standards listed within the Public Forest Policy (Centre Wellington, 2018) (2 trees for every tree removed equal to or larger than 10 cm DBH). Therefore, 70 trees will need to be planted as compensation, with a caliper size of 50 mm to 70 mm. Locations of these trees are planned for areas throughout the subdivision where opportunities are identified.

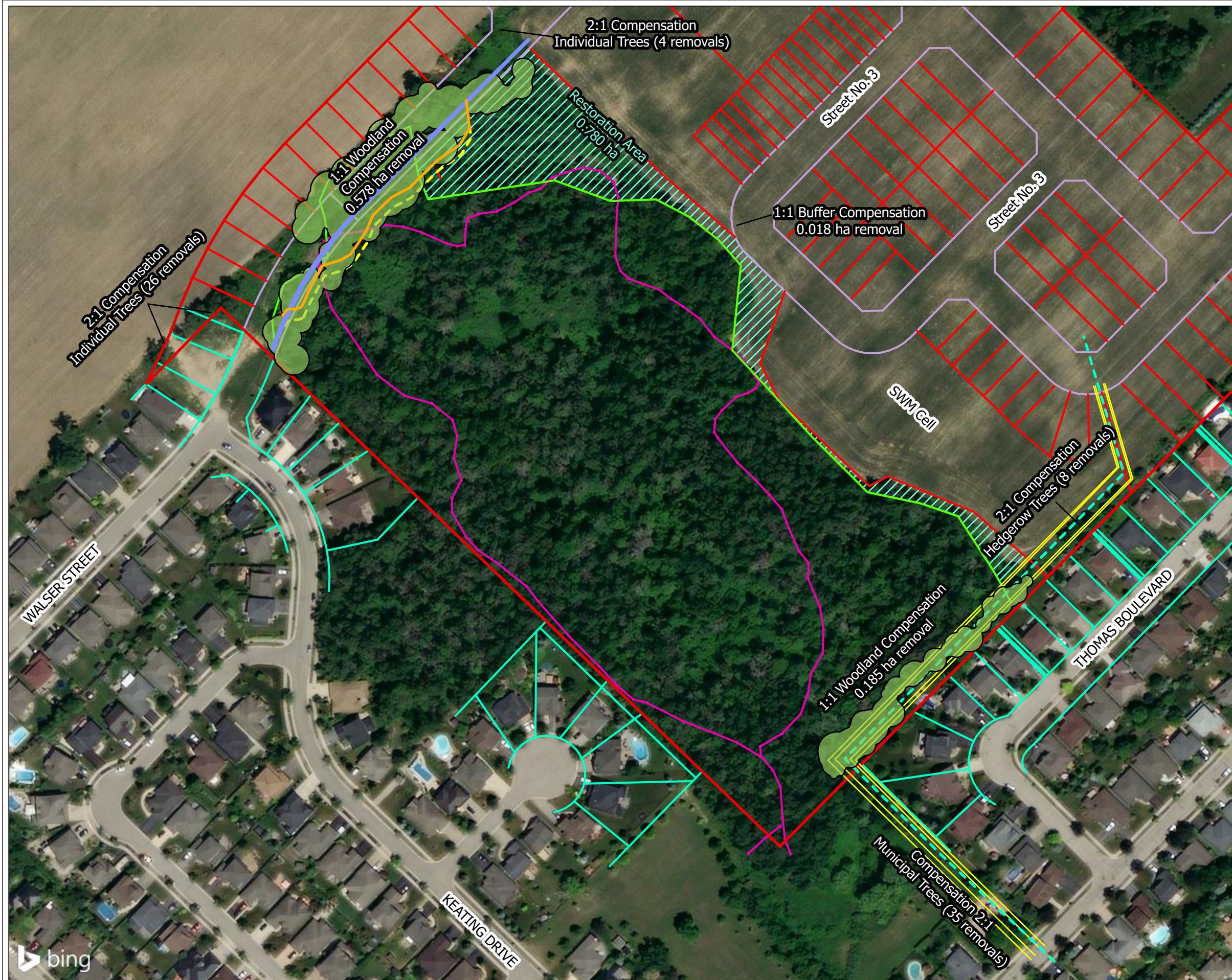
Tree compensation for the removal of 38 hedgerow/individual trees located within the Subject Property will be compensated according to the standards listed within the Public Forest Policy (Centre Wellington, 2018) (2 trees for every tree removed equal to or larger than 10 cm DBH). Therefore, 76 trees will need to be planted as compensation, with a caliper size of 50 mm to 70 mm. Locations of these trees are planned for areas throughout the subdivision where opportunities are identified.

It should be noted that a total of 7.223 ha of woodland area is being preserved on the Subject Property. The number of trees within the preserved woodland area is estimated to be 3100 trees  $\geq$  10 cm DBH (calculations are shown in the Tree Protection Plan). This estimate is likely conservative. The areas of woodland proposed to be removed for the Walser Street Extension (0.578 ha) and the sanitary sewer on the south side of the woodland (0.185 ha) total 0.763 ha. An additional area of 0.008 ha of woodland buffer is proposed to be removed for Street 3, bringing the total to 0.771 ha. The area of woodland proposed for removal will be compensated at a 1:1 ratio in order to maintain tree canopy cover. A total of 0.780 ha (slightly larger than the area lost) is identified for compensation purposes adjacent to the woodland as it was assumed that the density of planted trees within the compensation areas may have to be adjusted in minor locations because of requirements for stormwater treatment facilities, presence of existing tree roots, etc. Restoration areas are shown in

**Figure 2.**

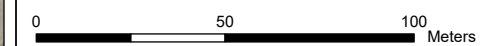
NRSI requested that tree planting occur at density of 1200 trees per hectare of any size. The proposed development plan will result in the removal of 0.771 ha of woodland trees. Based on the area proposed for removal, 925 trees of any size (e.g., whips, 50-100 cm height) will be planted for compensation. This is based on the calculation of  $(0.771)(1200) = 925$  trees. If tree planting of larger caliper species is proposed within the development envelope, the density/numbers of trees per hectare will be adjusted consistent with the Forestry Act (e.g., 750 over 5 cm diameter per hectare). Planted trees shall come with a 2-year warranty period and monitoring will be conducted during this period to determine numbers of replacement trees.

**Figure 2 | Ainley Subdivision**  
Tree Removal Compensation Ratios



**Legend**

- Subject Property
- Compensation Area**
- Woodland Removal / Injury
- Recommended Restoration Areas
- Recommended Screening Vegetation
- Proposed Development**
- Existing Lot Lines
- Proposed Lots
- Proposed Streets
- Proposed Pathway
- Top of Slope
- Woodland Dripline (surveyed November 13, 2021)
- Proposed Sanitation Line
- Limit of Disturbance for Road Construction
- Easement



Project Number  
15-799

Date:  
2023-04-06



Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.  
Imagery: Bing



**Table 1** below provides a summary of compensation requirements for trees proposed for removal.

**Table 1. Summary of Compensation Requirements for Trees Proposed for Removal**

| Tree Location              | Compensation Requirement                                | Live Tree Removals <sup>3</sup> | Total area planned for removal <sup>3</sup> | Number of Required Replacement Trees                    |
|----------------------------|---|---------------------------------|---|---|
| Woodland Trees             | 1200 trees/ha removed                                   | 200                             | 0.763 ha                                    | 925 (any size) <sup>1</sup> including removal of buffer |
| Hedgerows/Individual Trees | 2 trees for every 1 trees removed with a DBH $\geq$ 10) | 38                              | N/A   | 76 (caliper size of 50mm to 70mm) <sup>2</sup>          |
| Municipality Owned Trees   | 2 trees for every 1 trees removed with a DBH $\geq$ 10) | 35                              | N/A   | 70 (caliper size of 50mm to 70mm) <sup>2</sup>          |

<sup>1</sup>As per the recommendations of NRSI and the Township of Wellington (1200 trees/ha)

<sup>2</sup>Based on compensation requirements provided in the Public Forest Policy (Centre Wellington, 2018)

<sup>3</sup>Dead trees are not included, as they do not require compensation

## 4. Wildlife and Habitat Inventories

### 4.1. Bat Habitat

From the background review the Subject Property is located within 2 km of a documented colony of Little Brown Myotis (*Myotis lucifugus*), an Endangered Species at Risk.

A snag survey was conducted in conjunction with the update to the tree inventory on May 6 and 13 (prior to leaf-out), 2022. Results are shown in **Appendix 3**. Trees that provided potential bat habitat according to Bats & Treed Habitats - Maternity Roost Surveys Protocol provided by MECP, include the following criteria (in order of importance):

- Tallest snag/cavity tree
- Cavities or crevices most often originating as cracks, scars, knot holes or woodpecker cavities
- Has the largest diameter at breast height (DBH) (>25 cm diameter DBH)
- Is within the highest density of snags/cavity trees (e.g., cluster of snags)
- Has a large amount of loose, peeling bark
- Cavity or crevice is high in snag/cavity tree (>10m)
- Has leaf clusters
- Tree species that provide good cavity habitat (e.g., white pine, maple, aspen, ash, oak)
- Canopy is more open
- Exhibits early stages of decay (decay Class 1-3).

Surveys for leaf clusters that could potentially provide habitat for Tri-colored Bat (*Perimyotis subflavus*) were conducted prior to exit surveys. Preferred mature trees that tend to produce leaf clusters (oak and maple) are rare along the woodland edges, and leaf clusters were not observed.

Fifty-eight (58) trees in the area of potential tree removal (north and south edges of the woodlot) were found to support bat habitat, as shown in **Figures 3A, B**. Thirty (30) of the Fifty-two trees were dead and dying ash (*Fraxinus* sp.). Of the habitat assessed, many of the trees provided multiple forms of habitat, with most provided habitat consisting of loose bark, a common characteristic of ash trees that were dead and dying due to Emerald Ash Borer. Twelve (12) trees supported cavities, forty (40) had flakey bark, twenty-four (26) had cracks, and thirty-nine (39) had another snag tree within 10 m. No knot holes were recorded.

## 4.2. Bat Exit Surveys

Bat exit surveys were conducted according to MNRF protocols on June 3<sup>rd</sup>, June 7<sup>th</sup> and June 23<sup>rd</sup>, 2022, focusing on sampling locations at the edge of the woodlot where potential exit holes could be easily seen. Two of the surveys were conducted from one-half hour before sunset to one hour after sunset (from approximately 8:30 until 10:00 pm). The surveys were generally conducted in fair weather with winds between 0 and 3 on the Beaufort Scale. The first survey on June 3<sup>rd</sup> had to be aborted approximately 40 minutes before the end of the prescribed time because wind rose suddenly above 19 km/h (recommended as the maximum wind speed for bat surveys according to MNRF). Acoustic surveys were conducted with a hand-held bat detector (Wildlife Acoustics Inc. echo-meter touch and echo-meter touch pro) at four locations encompassing seven of the “best” trees, as shown in **Figures 3A, B**. The files recorded were identified through the echo-touch software and recorded in the field, and then the recordings were analyzed with the use of Wildlife Acoustic Inc. Kaleidoscope Pro software. All recordings of SAR bats were also screened by an observer trained to recognize the call signatures of Ontario bats.

Results are provided in **Table 2**. No bats were seen exiting from the trees under observation. However, five species of bats were identified flying overhead, with a total of 81 calls recorded. Of the five species, one, Little Brown Myotis, is a Species at Risk with a status of Endangered. This species was recorded by all observers on a single night, and was most likely foraging over the woodlot. However, it is possible that one or more species may have formed maternity roosts in the woodlot.

## 4.3. Consultation with MECP

The Ministry of Environment, Conservation and Parks were consulted regarding the removal of SAR bat habitat along the edges of the woodlot. The response is provided in **Appendix 4**.

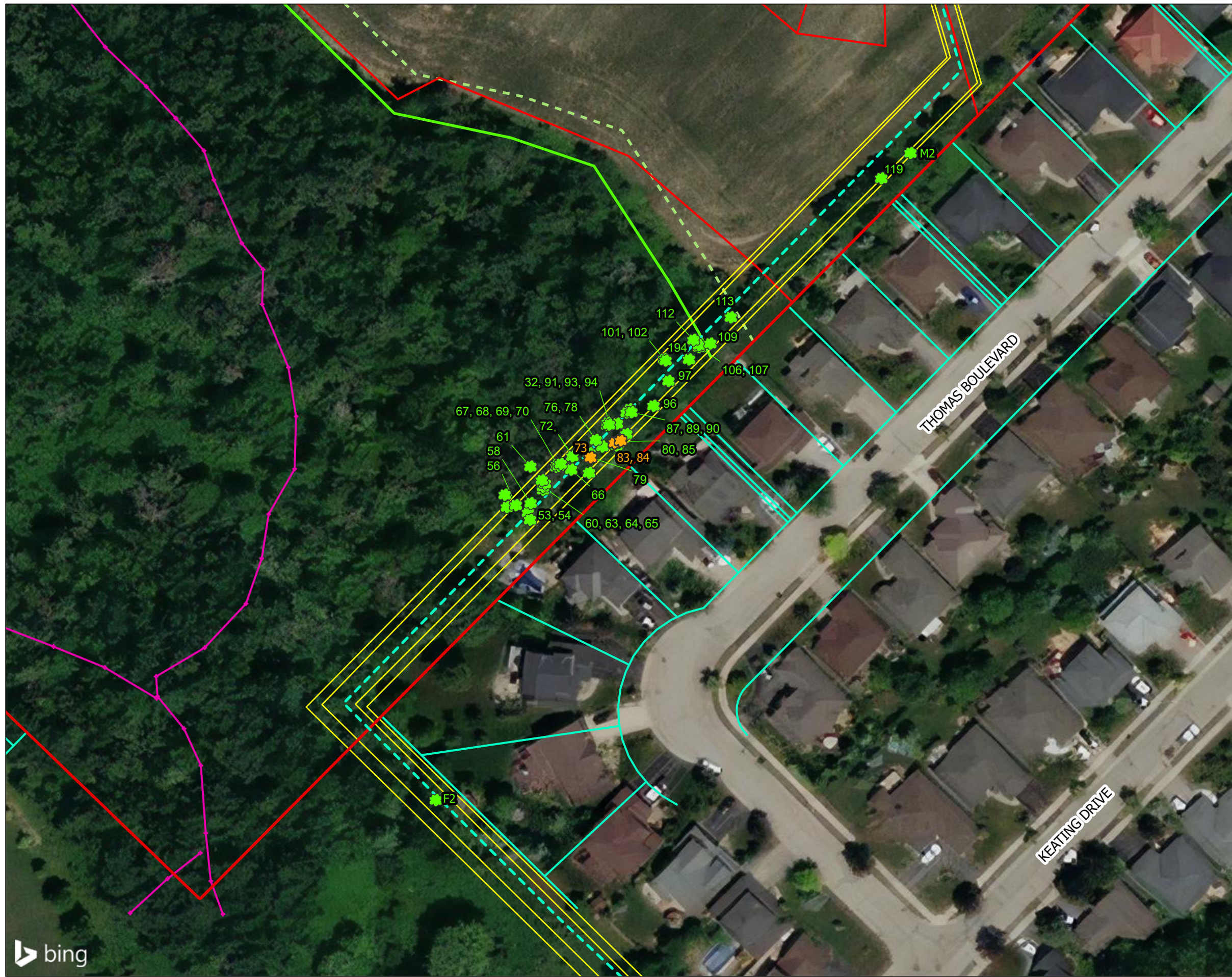
**Figure 3a | Ainley Subdivision**  
Bat Habitat

**Legend**

- ▭ Subject Property
- Woodland Dripline (surveyed November 13, 2021)
- - - Woodland Dripline Buffer (10 m)
- ✿ Snag Survey - Bat Habitat
- ✿ Trees monitored for Bat Habitat

**Proposed Development**

- Existing Lot Lines
- Proposed Lots
- Proposed Streets
- Proposed Pathway
- Top of Slope
- - - Proposed Sanitation Line
- Easement



|                          |                     |        |
|--------------------------|---------------------|--------|
| Project Number<br>15-799 | Date:<br>2023-04-06 | N<br>↑ |
|--------------------------|---------------------|--------|

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.  
Imagery: Bing



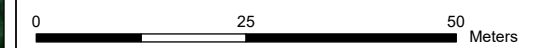
**Figure 3b | Ainley Subdivision**  
Bat Habitat

**Legend**

- ▭ Subject Property
- Woodland Dripline (surveyed November 13, 2021)
- - - Woodland Dripline Buffer (10 m)
- ✿ Snag Survey - Bat Habitat
- ✿ Trees monitored for Bat Habitat

**Proposed Development**

- Existing Lot Lines
- Proposed Lots
- Proposed Streets
- Proposed Pathway
- - - Top of Slope

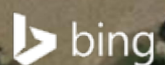
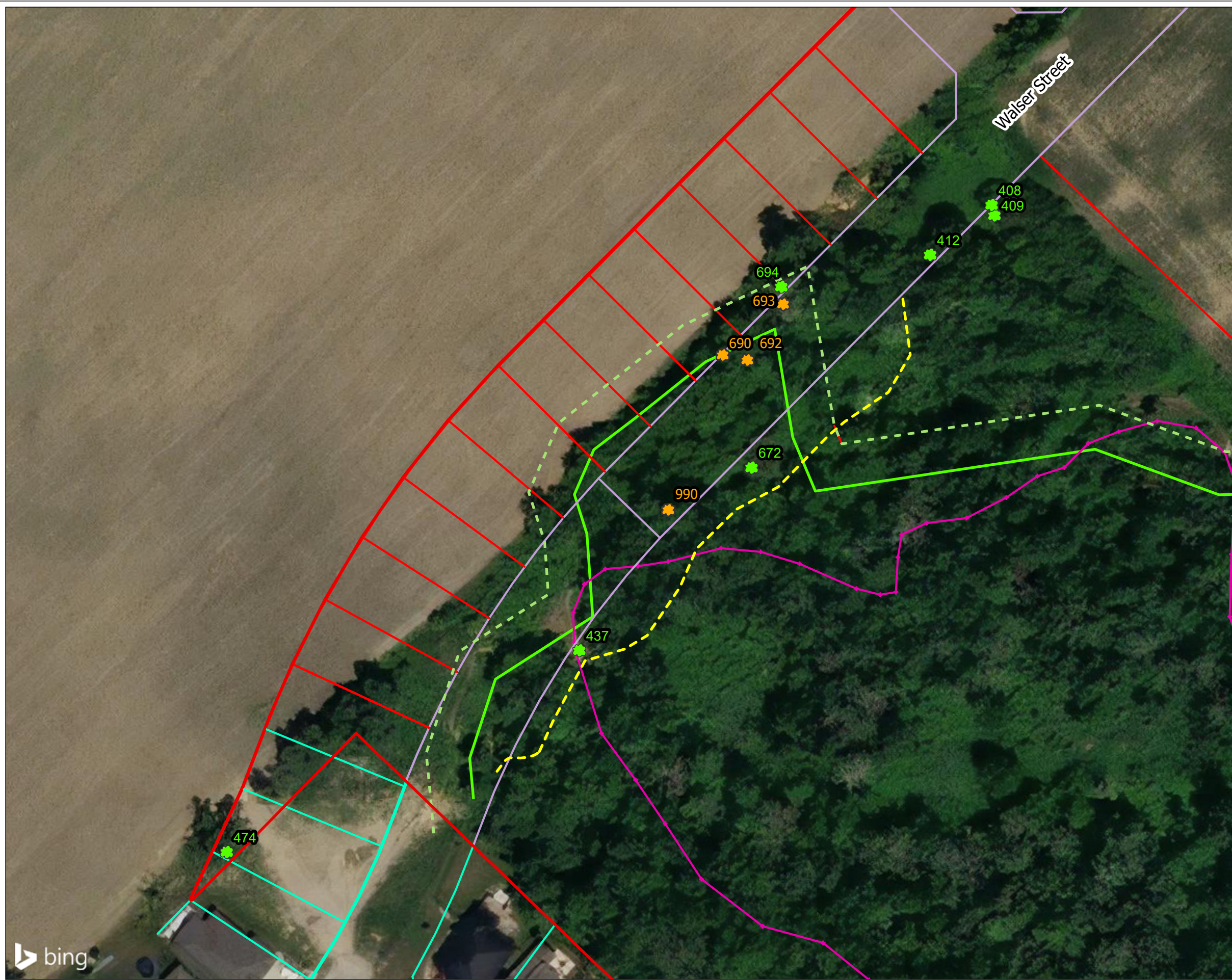


Project Number  
15-799

Date:  
2023-04-06



Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.  
Imagery: Bing



**Table 2. Bat Survey Results**

| Date   | Tree Numbers  | Species <sup>1</sup> |           |          |          |          |           |          |          |          |
|--|---------------|----------------------|-----------|----------|----------|----------|-----------|----------|----------|----------|
|  |               | No ID                | EPTFUS    | LASBOR   | LASCIN   | LASNOC   | MYOLUC    | PERSUB   | MYOSEP   | MYOLEI   |
| June 3, 2022<br>(North side of woodlot only - survey aborted due to rising wind) | 990           |                      | 1         |          |          | 1        |           |          |          |          |
|  | 690, 692, 693 | 2                    |           |          |          |          |           |          |          |          |
| June 7, 2022   | 83, 84        | 1                    | 7         |          |          |          |           |          |          |          |
|  | 73            | 2                    | 2         |          |          |          |           |          |          |          |
|  | 990           |                      |           |          |          |          |           |          |          |          |
|  | 690, 692, 693 |                      | 2         | 1        | 3        | 1        |           |          |          |          |
| June 23, 2022  | 83, 84        |                      | 10        |          |          |          | 3         |          |          |          |
|  | 73            | 5                    | 2         |          |          |          | 10        |          |          |          |
|  | 990           |                      |           |          |          |          | 1         |          |          |          |
|  | 690, 692, 693 | 2                    | 16        |          | 3        | 2        | 4         |          |          |          |
| <b>Total</b>   |               | <b>12</b>            | <b>40</b> | <b>1</b> | <b>6</b> | <b>4</b> | <b>18</b> | <b>0</b> | <b>0</b> | <b>0</b> |

<sup>1</sup>Species List:

Non-SAR Bat Species: EPTFUS = Big Brown Bat, LASBOR = Eastern Red Bat, LASCIN = Hoary Bat, LASNOC = Silver-haired Bat;

Species at Risk (SAR) Bat Species: MYOLUC = Little Brown Myotis, PERSUB = Tri-colored Bat, MYOSEP = Northern Long-eared Myotis, MYOLEI = Eastern Small-footed Myotis

#### 4.4. Locations of Amphibian and Breeding Bird Point Counts

The locations of the amphibian survey locations are shown in **Figure 1**. Amphibian survey locations were selected based on the fact that the two locations were the only areas of pooled water at the time of the initial surveys in 2006, and these locations were surveyed again in 2015. However, the entire woodlot was searched for areas of pooling water again in 2015.

Breeding bird surveys were conducted as area searches, during which the entire woodlot was searched. Locations of all species observed were marked on a map. The woodland edge was also searched and birds noted in the adjacent agricultural fields were also recorded on mapping.

### 5. Significance and Impact to Features

#### 5.1. Assessment of Significance

The Woodland is considered Significant Woodland based on meeting the requirements of the size criteria, under the County's Urban Greenlands System. Additionally, this woodland meets the criteria for Significant Wildlife Habitat, with the presence of Eastern Wood-pewee (*Contopus virens*), a species of Special Concern.

### 6. Subdivision Plan Revision and Trail Alignment

The subdivision plan has been revised in light of the revised dripline to conserve the 10 m buffer to the woodland and 30 m buffer to the wetland as much as possible, as shown on **Figure 4**. The corner of Street 3 cuts slightly into the woodland buffer, removing a small portion of the buffer.

Compensation planting is proposed for this removal, as shown in **Section 8**. The stormwater facility, which will include LID measures such as infiltration galleries, will also encroach on the woodland buffer. However, its buffer function will be maintained by its stormwater treatment function, and by plantings of non-woody plants where opportunities exist. Woody plants cannot be planted widely within this block as these will impair its function to treat stormwater.

A trail is proposed to follow the existing informal trail alignment (**Figure 2**). It is recommended that the trail be retained as informal, but surfaced with fine granular material. Signage should be used to warn people that dumping, off-trail encroachment and movement of soils and vegetation have high impacts and are not permitted.

### 7. Impact to Wetland from Discharge of Stormwater

A memo from GM BluePlan is appended to this Addendum (Technical memo from Sarah Primmer to Sarah Mainguy, 15 February, 2023, **Appendix 5**). Their analysis concludes that based on a review of the topographic survey information, the wetland areas do not have significant ponding areas, but

rather generally flow from northeast to southwest towards the drainage channel. The additional volumes of stormwater that discharge to the wetland under post-development conditions will not significantly impact the depth of the ponding in the wetland.

The overall effect of the proposed development results in increased runoff volume from the site and decreased recharge volume. The impact has been mitigated through the inclusion of infiltration galleries within the banks of the stormwater pond, as well as within the park block. These galleries combine to provide 6,502m<sup>3</sup> of infiltration on an annual basis, and assist with reducing peak flows and volumes to the wetland during storm events.

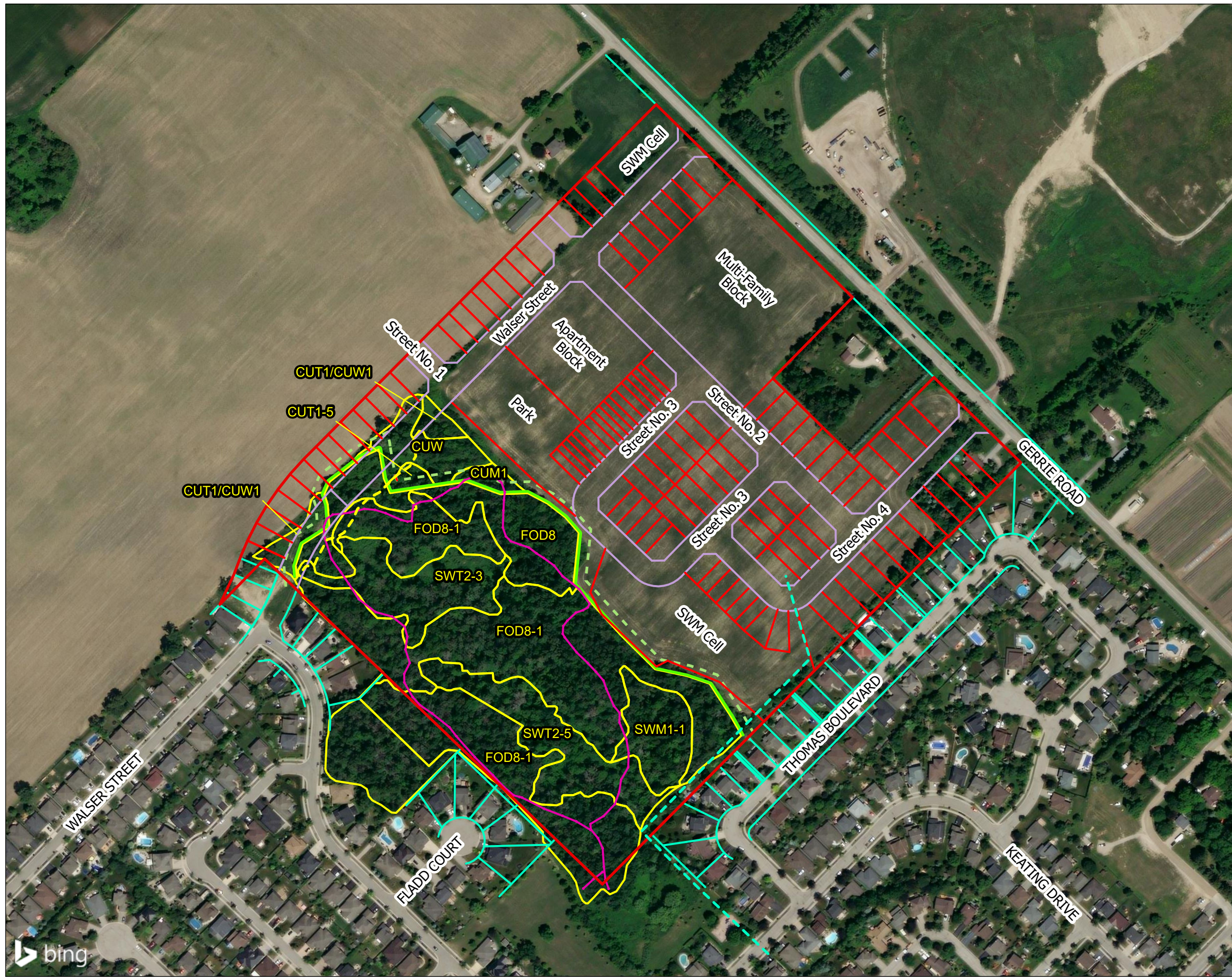
There is an increase in runoff volume to the wetland under post-development conditions during the design storm events, however a significant amount of infiltration has reduced the impact. It should be noted that the additional volume that discharges to the wetland is routed through the wetland, as discussed above, rather than ponding in the wetland. As such, the additional volume does not result in increased inundation of the wetland.

On an annual basis, the total estimated recharge from the subdivision only decreases by 5.5%, as discussed in the Stormwater Management Report.

## 8. Grading Plan

The revised draft grading plan is provided in **Figure 5**.

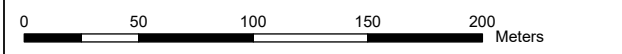
**Figure 4 | Ainley Subdivision**  
Proposed Development



**Legend**

- Subject Property
- Woodland Dripline (surveyed November 13, 2021)
- Woodland Dripline Buffer (10 m)
- Ecological Land Classification (ELC)
- Proposed Development**
- Existing Lot Lines
- Proposed Lots
- Proposed Streets
- Proposed Pathway
- Top of Slope
- Proposed Sanitation Line

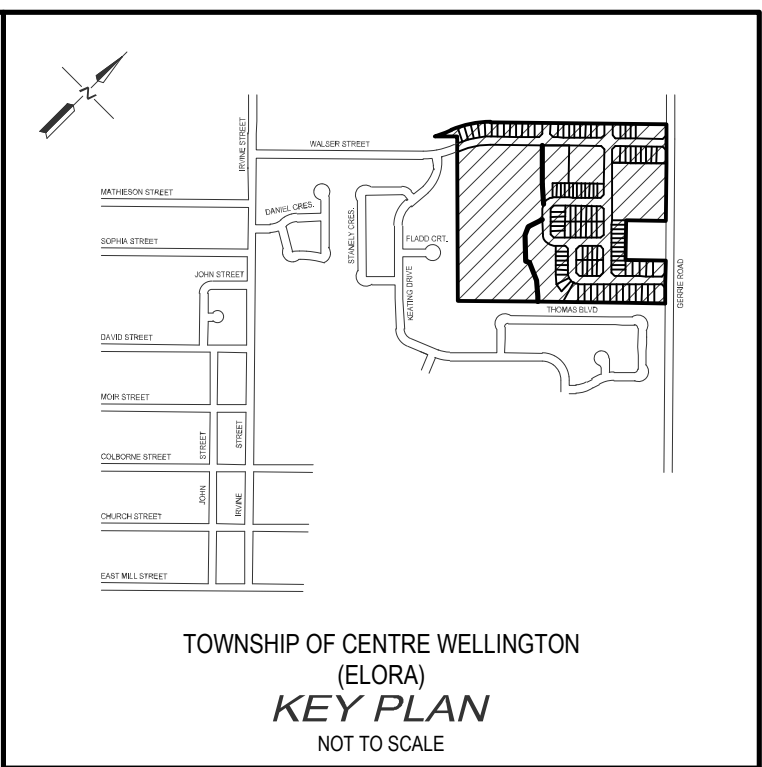
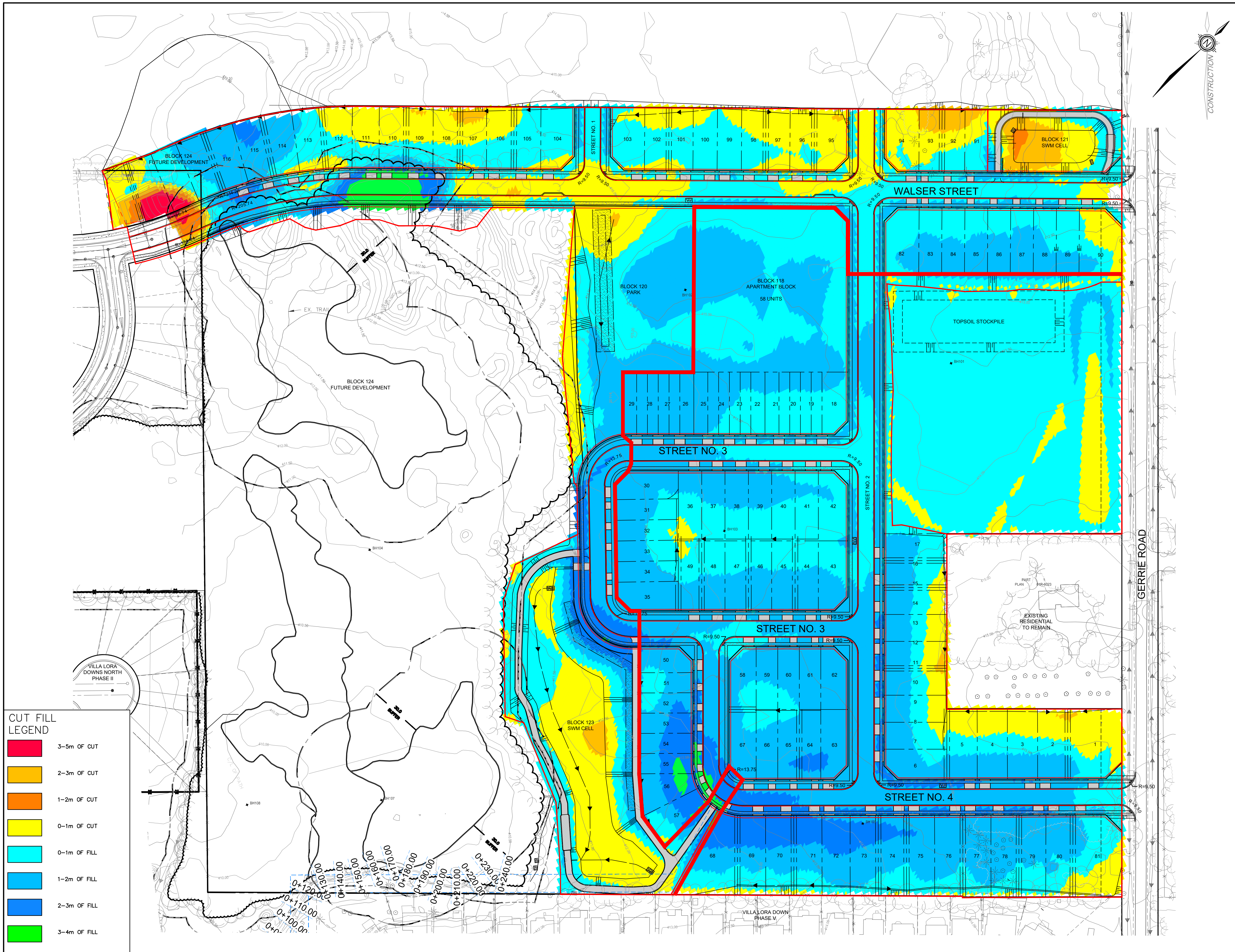
- Vegetation Communities**
- CUM1** - Mineral Cultural Meadow
  - CUT1** - Mineral Cultural Thicket
  - CUT1-5** - Raspberry Cultural Thicket
  - CUW** - Cultural Woodland
  - CUW1** - Mineral Cultural Woodland
  - FOD8** - Fresh-Moist Poplar-Sassafras Deciduous Forest
  - FOD8-1** - Fresh-Moist Poplar Deciduous Forest
  - SWM1-1** - White Cedar-Hardwood Mineral Mixed Swamp
  - SWT2-3** - Red-osier Mineral Thicket Swamp
  - SWT2-5** - Willow Organic Thicket Swamp



|                          |                     |        |
|--------------------------|---------------------|--------|
| Project Number<br>15-799 | Date:<br>2023-04-06 | N<br>▲ |
|--------------------------|---------------------|--------|

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.  
Imagery: Bing





- NOTES :**
1. TOPOGRAPHICAL SURVEY PROVIDED BY NORTHWAY PHOTOMAP INC. COMPLETED ON JUNE 2, 2005.
  2. ADDITIONAL TOPOGRAPHICAL SURVEY BY GAMBISY AND MANNERWORTH LIMITED COMPLETED ON JULY 29, 2013.
  3. DRAFT PLAN OF SUBDIVISION FROM BSR&D DATED FEBRUARY 3, 2022.
  4. BOREHOLE INFORMATION FROM GEOTECHNICAL INVESTIGATION PROVIDED BY CMT ENGINEERING INC. DATED MARCH 29, 2006.
  5. GRCA REGULATION LIMIT FROM AREAL MAP PROVIDED BY GRCA DATED JULY 31, 2018.
  6. WETLAND LIMIT BOUNDARIES FROM PRELIMINARY ENVIRONMENTAL IMPACT STUDY REPORT PROVIDED BY NORTH-SOUTH ENVIRONMENTAL INC. DATED JUNE 2006.
  7. HIGH WATER LEVEL ("HWL") INFORMATION FROM PRELIMINARY ENVIRONMENTAL IMPACT STUDY REPORT PROVIDED BY NORTH-SOUTH ENVIRONMENTAL INC. DATED JUNE 2006.

**BENCH MARKS :**

TOP NUT OF HYDRANT BETWEEN HOUSE NO'S 92 & 94 ON KEATING DRIVE = ELEV. 410.878

NAIL IN EAST FACE OF HYDRO LIGHT POLE ON NORTHWEST CORNER OF IRVINE STREET AND MATHESON STREET = ELEV. 407.714

TOP NORTHEAST CORNER OF HYDRO TRANSFORMER AT NORTHWEST CORNER OF SWIM POND AND IRVINE STREET = ELEV. 408.488

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.

| NO. | DATE       | REVISION DESCRIPTION           | CHKD   |
|-----|------------|--------------------------------|--------|
| 3.  | 03/14/2023 | ISSUED FOR DRAFT PLAN APPROVAL | P.G.   |
| 2.  | 06/03/2022 | ISSUED FOR DRAFT PLAN APPROVAL | G.E.A. |
| 1.  | 07/04/2019 | ISSUED FOR DRAFT PLAN APPROVAL | P.G.   |

**BluePlan**  
ENGINEERING

GUELPH | OWEN SOUND | LISTOWEL | KITCHENER | LONDON | HAMILTON | GTA  
330 TRILLIUM DRIVE, UNIT D, KITCHENER, ON N2E 3J2  
TEL 519-745-1440 www.blueplan.ca

**AINLEY FARM SUBDIVISION**  
JAMES KEATING  
CONSTRUCTION LIMITED  
TOWNSHIP OF CENTRE  
WELLINGTON (ELORA)

**CUT-FILL PLAN**

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| DRAWN BY:    | APPROVED BY: | PROJECT NO.: | DRAWING NO.: |
| C.M.         | -            | 411009       | -            |
| DESIGNED BY: | DATE:        | SCALE:       |              |
| S.P.         | JANUARY 2019 | 1:1000       |              |

## 9. Cumulative Impact Assessment

Cumulative impact assessment is the assessment of 1) multiple impacts that have the potential to interact, with overall impacts that are greater than the sum of their parts, and 2) the combined effect of single and multiple impacts over time. The following provides an analysis of cumulative impacts, and provides recommendations for mitigation to avoid further degradation of the woodland in the future.

There have been impacts on the woodland in the past from residential development adjacent to the woodland, and these are recommended to be addressed as much as possible. The woodland is currently surrounded to the south and west by residential housing, with very little buffer. In some cases, particularly along the south edge, property owners have encroached on the edge of the woodland, creating lawns and structures within the edge. User-created trails have been established within the woodland, and in some areas are used by BMX bikes in addition to pedestrians, with tree cutting and disturbance of soils by creation of jumps.

Impacts on the groundwater may have been responsible for reduction in water to the wetlands, as impacts due to reduced water levels were noted in the first EIS. These impacts could be increased by tree cutting along the northern edge, as this is likely to dry soils because of increased winds and ambient light. While the amount of water to the woodland will be increased due to the stormwater design, measures have been taken to reduce the potential for interruption of groundwater inputs through construction of infiltration galleries.

Impacts of encroachment will likely be reduced along the northern and eastern edges in the current development, as the lots will not back onto the feature - the road edges and stormwater facilities will be adjacent to the woodland edge. However, impacts of people within the woodland will likely be exacerbated by the increasing numbers of people, cars and houses in the surrounding area. Dumping as well as increased bike traffic may affect the woodland. Off-leash dogs will increase trampling and increase nutrient inputs because of deposition of feces. Outdoor cats will hunt adjacent to residences.

The northwest and northeast sides of the woodland are bordered by large tracts of agricultural land which lack hedgerows and other connecting corridors to other natural heritage features. The isolation of features is a characteristic of this area, as the entire area is intensively farmed. This isolation will compound with other impacts over time to result in a gradual reduction of species diversity and degradation of the feature.

The following are recommendations to avoid the proliferation of cumulative impacts in the woodland.

- The woodland should be fenced on sides adjacent to existing residential development.
- A brochure should be prepared that advises surrounding residents about what is entailed in the stewardship of the woodland, requesting that there be no dumping, off-trail walking, encroachment, creation of bike trails, or damage to vegetation.
- Dogs should not be permitted off-leash in the woodland. Cats should be kept indoors.
- Clay collars should be used for the sewer line and other infrastructure to reduce the potential for groundwater to be channeled away from the woodland.
- Impacts to bat habitat should be mitigated or compensated according to requirements of the Ministry of Environment, Conservation and Parks (MECP). Removal of bat habitat should be avoided during the bat activity season from April 1<sup>st</sup> to September 31<sup>st</sup>. Trees that have a high potential to provide bat habitat, such as Large-leaved Poplar (*Populus grandidentata*) should be planted in order to provide bat nursery habitat in the long term. Bat houses should be installed along the edge of the woodland using the “rocket box” design.
- Areas adjacent to the stormwater facilities should be re-planted with native trees to provide compensation and to reduce impacts on the woodland. Dense screening of cedars should be used to reduce penetration of light and drying winds into the woodland. The planting plans have been recommended in the EIS for the Walser Street Extension and the subdivision development, and these should be implemented as soon as possible after construction of the road and the stormwater facilities.
- Dense screening of cedars has been recommended for the Walser Street extension, as these are already a component of the woodland.
- The woodland trail should be constructed before the building lots are occupied.
- As noted in previous reports, snow dumping should be restricted to areas of the subdivision where there is a reduced change that salt will enter the stormwater facility, and migrate from there into the woodland.

## **APPENDIX 1** | Comments & Response Matrix

**Appendix 1.** Response Matrix for NRSI comments from Peer Review, dated October 29, 2021.

| NRSI Recommendations   | Response  |
|--|---|
| Appropriately survey and map the dripline of the Significant Woodland at a higher level of accuracy and conduct an updated tree inventory of the area proposed for removal, in relation to the preliminary grading plan to allow for a complete understanding of the extent of impact to woodland edge proposed;   | The woodland dripline boundary was revised and staked with members of NRSI and the Town present on November 13, 2021. The staked boundary is shown in <b>Figure 1</b> .   |
| Develop a Tree Preservation Plan (TPP) using the findings of the updated tree inventory and Significant Woodland dripline survey in order to identify trees will be impacted by the proposed development and require removal based on the required extent of construction. The TPP should also include recommendations towards the compensation of trees that require removal; | A tree inventory was carried out on November 30 <sup>th</sup> , 2021, May 6 <sup>th</sup> , 2022, and May 13 <sup>th</sup> , 2022, and a Tree Preservation Plan (TPP) was written and is appended to this Addendum (see <b>Appendix 2</b> ).  |
| Clarify how the proposed plan makes appropriate use of woodland edge areas in consideration of tree health in these areas;   | Most of the planting is focused on restoration of the woodland edge, as shown in <b>Figure 4</b> .  |
| Further explore the possibility for bat Species at Risk habitat to exist within the Significant Woodland. Provide mitigation measures to minimize potential impacts to bats and confirm the approach with the Ministry of Environment, Conservation and Parks;   | Results of bat habitat and bat acoustic surveys are shown in Section 4. Recommendations for restoration of bat habitat are provided. Consultation with MECP is provided in <b>Appendix 4</b> .  |
| Provide the location of amphibian and breeding bird survey stations or approximate transects to facilitate assessment of whether the number and location of point count stations were appropriate to adequately assess amphibian and bird habitat on and adjacent to the subject property;   | The amphibian survey locations are shown in <b>Figure 1</b> . Amphibian survey locations were selected based on the fact that the two locations were the only areas of pooled water at the time of the initial surveys in 2006, and these locations were surveyed again in 2015. Breeding bird surveys were conducted as area searches, during which the entire woodlot was searched. All species observed were marked on a map. The woodland edge was also searched and birds noted in the adjacent agricultural fields were also recorded on mapping. |
| Provide a statement regarding how the Significant Woodland will be protected from negative impacts related to development or site alterations that specifically relates to Section 5.5.4 of the County of Wellington’s Official Plan;  | As required by this policy, the woodland will be protected from development or site alterations which would negatively impact the woodlands or their ecological functions. In the arborist report, we have outlined good forestry practices to be encouraged and tree removal will be subject to the Wellington County Forest Conservation Bylaw.   |
| Re-evaluate the results of the “no negative impacts” test as outlined above, by identifying the residual impacts and associated compensation, and determining whether residual impacts may act cumulatively;   | Residual and cumulative impacts will be mitigated by providing screening to the woodland and curtailing activities that are currently affecting the woodland.   |
| Consider additional mitigation measures to reduce impacts associated with the quantity and quality of water expected to enter the Significant Woodland, which may include LID principles, bioswales and/or additional clarification of measures proposed;  | Additional LID measures are shown in the stormwater report under separate cover. The technical memo provided in b concludes that there will be no significant increased ponding of water within the wetland.  |
| Clarify which party is responsible for addressing recommendations relating to the Walser Street extension with the Township and/or County;   | The developer is responsible for addressing recommendations relating to the Walser Street extension with the Township and/or County   |
| Complete an updated EIS or addendum and propose recommendations based on the foregoing, including presenting any required changes to the draft grading plan, potential reduction of extent of removal of forested areas, and other mitigation or restoration measures to minimize negative impacts as warranted.   | Addendum has been completed with revised subdivision plan and recommendations showing restoration areas. The limit of grading is shown on <b>Figure 5</b> accompanying the addendum.  |

## **APPENDIX 2 |** Tree Protection and Compensation Plan

October, 2022

# Tree Inventory and Preservation Plan

Ainley Subdivision, Township of Centre  
Wellington, ON

**Prepared for**

Black, Shoemaker, Robinson Donaldson Limited



north-south  
ENVIRONMENTAL

## Project Study Team

### North-South Environmental Inc.

Sarah Mainguy - Project Manager, Report Editor

Sal Spitale - Principal / Senior Ecologist, Report Editor

Leanne Wallis (ISA Arborist ON-2484A) - Senior Ecologist, Report Editor

Pauline Catling (ISA Arborist ON-2721A), Senior Ecologist, Tree Inventory

Devin Bettencourt (ISA Arborist ON-2831A) - Junior Ecologist, Tree Inventory, Report Author

# Table of Contents

- 1. Introduction ..... 1
  - 1.1. Policy Context..... 3
    - 1.1.1. County of Wellington Official Plan ..... 3
    - 1.1.2. Grand River Conservation Authority Regulations (under Ontario Regulation 150/06)..... 3
    - 1.1.3. Township of Centre Wellington..... 5
    - 1.1.4. Canadian Food Inspection Agency Directive: D-03-08 (2021)..... 6
    - 1.1.6. Migratory Birds Convention Act (1994) ..... 6
    - 1.1.7. Endangered Species Act (2007)..... 7
    - 1.1.8. Ontario Forestry Act (1990)..... 7
  - 1.2. Proposed Development..... 8
- 2. Methods..... 8
- 3. Results and Discussion ..... 9
  - 3.1. Trees to be Removed/ Injured/ Retained..... 14
  - 3.2. Potential Impacts to Remaining Trees ..... 15
  - 3.3. Arborist Recommendations ..... 15
- 4. Tree Compensation..... 15
- 5. Tree Preservation..... 17
  - 5.1. Recommended Tree Protection and Mitigation Measures ..... 17
    - 5.1.1. Root Pruning in Excavation Area to be Supervised by Qualified Arborist..... 19
    - 5.1.2. Equipment Refueling to be Conducted away from Natural Vegetation..... 19
    - 5.1.3. Recommendation to Minimize Use of Deicing Salts during Site Occupation ..... 20
  - 5.2. Monitoring Requirements ..... 20
  - 5.3. Additional Mitigation Measures ..... 20
- 6. Conclusion/ Summary..... 21
- 7. References ..... 22

## List of Tables

|  |    |
|--|----|
| Table 1. Summary of Tree Vigor Class for Trees Surveyed .....                            | 10 |
| Table 2. Summary of Tree Size for Trees Surveyed .....                                   | 12 |
| Table 3. Summary of Compensation Requirements for Trees Proposed for Removal .....       | 16 |
| Table 4: Summary of Tree Species Proposed to be Planted within the Subject Property..... | 17 |
| Table 5. Trees potentially injured and their associated MTPZ and PRZ.....                | 18 |

## List of Figures

|  |   |
|--|---|
| Figure 1. The Subject Property and ELC at Lots 17 and 18, Concession 12, Township of Centre Wellington (Geographic Township of Nichol), County of Wellington ..... | 2 |
| Figure 2. GRCA (2022) mapping illustrating aerial mapping of wetland (purple) and regulated area (yellow).....   | 4 |

## List of Appendices

|   |        |
|---|--------|
| APPENDIX 1   Tree Vigor Criterion.....      | I      |
| APPENDIX 2   Tree Inventory Data .....      | IV     |
| APPENDIX 3   Tree Preservation Plan.....    | XXIII  |
| APPENDIX 4   Tree Compensation Mapping..... | XXVI   |
| APPENDIX 5   Agency Correspondence.....     | XXVIII |

# Tree Inventory and Tree Preservation Plan

## 1. Introduction

In 2015 North-South Environmental Inc. (NSE) was retained by Black, Shoemaker, Robinson Donaldson Limited (BSRD) to conduct an Environmental Impact Study (EIS) for a proposed development at the Ainley Farm property, legally described as Lots 17 and 18, Concession 12, Township of Centre Wellington, County of Wellington (herein referred to as the “Subject Property”). The property includes approximately 19 hectares (ha) of land, with frontage on Gerrie Road to the east and access to the future extension of Walser Drive to the west. The Subject Property is illustrated in **Figure 1**. In winter 2021, BSRD requested NSE complete a Tree Inventory and Preservation Plan, as well as an assessment of potential bat habitat in conjunction with the Environmental Impact Study (EIS) Addendum. This report should be read in conjunction with the EIS (2017), EIS Addendums (2020; 2022), and all other design plans for the project.

The need for a tree inventory and preservation plan is necessitated by the proposed development area of the site. Surveyed trees include those with potential to be impacted by the proposed development area (i.e., removal, potentially injured). This includes areas of the woodland edge, consisting of cultural woodland and thicket along the northwest and northeast side of the wooded area, and the area along the proposed sanitation line (running through the southern portion of Subject Property from the agricultural land, through the southeastern woodland edge, and extending southeast through municipal land) (see **Figure 1**). Trees surveyed fall under a combination of the County of Wellington Conservation and Sustainable Use of Woodlands Tree By-law (5115-09) and the Public Forest Policy (Centre Wellington 2018).

The development area has been designed to avoid wetlands and mature natural vegetation as much as possible. The development will mainly occupy areas that were previously used as agricultural land. The total woodland area found on the Subject Property is 7.986 ha, the total area planned for removal is 0.763 ha, with a total of 7.223 ha of woodland area being preserved on the Subject Property. The number of trees within the preserved woodland area is estimated to be 3100 trees  $\geq 10$  DBH<sup>1</sup>. This estimate is likely conservative.

This arborist report provides a policy assessment, tree inventory results, and a proposed tree protection and removal plan.

---

<sup>1</sup>Number of trees estimated to be preserved within the woodland area has been calculated by using the tree inventory completed by NSE within the southeast and northeast woodland areas planned for removal, to estimate the density of trees  $\geq 10$  diameter at breast height (DBH). The average of the tree densities from the two areas was used as a proxy for the overall woodland density. The estimated density is 430.6 trees / ha. The calculation for total estimated trees preserved involves taking the average density of trees / ha and multiplying by the woodland area preserved (i.e., 430.6 trees / ha x 7.223 ha). This calculation results in an estimated tree preservation of 3100 trees  $\geq 10$  DBH within the woodland area being preserved.



**Figure 1. The Subject Property and ELC at Lots 17 and 18, Concession 12, Township of Centre Wellington (Geographic Township of Nichol), County of Wellington**

## 1.1. Policy Context

### 1.1.1. County of Wellington Official Plan

#### 1.1.1.1. Policy Overview

A full summary of Natural Heritage Features identified on the Subject Property and potential impacts to features and ecological functions has been provided in the EIS (2017), EIS Addendum (2020), and EIS Addendum (2022). In addition, the EIS and addenda has also provided a full policy review of the County of Wellington Official Plan 2013 to ensure the proposed develop conforms with relevant natural heritage policies.

Schedule 1A of the County of Wellington Official Plan (2013) includes all provincially and locally significant wetlands as part of the Core Greenlands designation. All other wetlands not identified as part of the Core Greenlands will be protected and development that would negatively impact their ecological functions shall be avoided.

#### 1.1.1.1. Subject Property Assessment

The woodland (which contains wetland) on the Subject Property has been mapped as Core Greenland in the County of Wellington Official Plan Schedule 1A (County of Wellington Official Plan 2013).

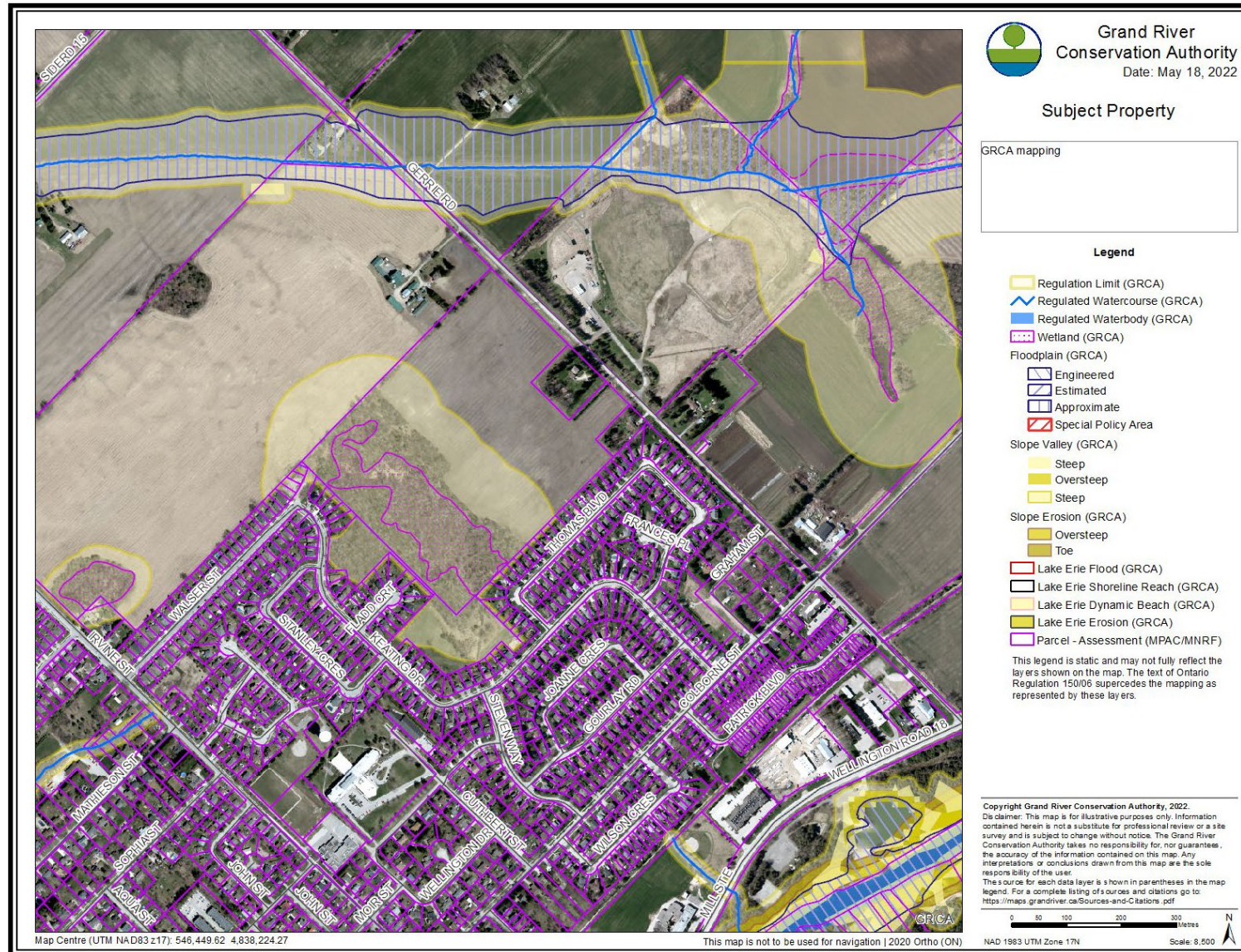
### 1.1.2. Grand River Conservation Authority Regulations (under Ontario Regulation 150/06)

#### 1.1.2.1. Policy Overview

Ontario Regulation (O.Reg.) 150/06 under the Conservation Authorities Act gives Grand River Conservation Authority (GRCA) the authority to regulate development, interference with wetlands and alterations to shorelines and watercourses. Generally, GRCA regulates floodplains, hazard lands, and wetlands.

#### 1.1.2.2. Subject Property Assessment

GRCA (2018) Regulation Mapping (**Figure 2**) illustrates a non-provincially significant wetland within the wooded area on the western portion of the Subject Property. The extent of the “Regulated Area” on the Subject Property is mapped as 120 m from the boundary of the wetland mapped by GRCA.



**Figure 2. GRCA (2022) mapping illustrating aerial mapping of wetland (purple) and regulated area (yellow)**

### 1.1.3. Township of Centre Wellington

The Township of Centre Wellington has a by-law that regulates trees within woodlands of at least 1 hectare in size. With respect to development proposals, tree removals can be addressed under the by-law (i.e., for removals that will occur before draft plan approval), or through the site plan approval process. Further, the Township has a policy document that provides guidance on how the Township intends to manage municipally owned trees. The Township does not have a private tree by-law that regulates individual trees on private property, or woodlands less than one hectare in size.

#### 1.1.3.1. *Conservation and Sustainable Use of Woodlands By-law (5115-09) (2009)*

##### *Policy Overview*

The Conservation and Sustainable Use of Woodlands By-law (5115-09) (2009) regulates the destruction or injury of trees in woodlands. In the by-law “woodlands” is defined as “land, one hectare (2.47 acres) or more in area measured to the drip line, and includes any unforested corridors within the area that are equal to or less than 30 m (98.4 feet) in width, with at least:

- 1,000 trees, of any size, per hectare (405 trees, of any size, per acre);
- 750 trees, measuring over 5 cm in DBH, per hectare (304 trees, measuring over 2 inches in DBH, per acre);
- 500 trees, measuring over 12 cm in DBH, per hectare (202 trees, measuring over 4.7 inches in DBH, per acre); or
- 250 trees, measuring over 20 cm in DBH, per hectare (101 trees, measuring over 7.9 inches in DBH, per acre).”

The by-law excludes cultivated fruit orchards, nut orchards or plantations established for the purpose of producing Christmas trees.

##### *Subject Property Assessment*

The treed area, shown on **Figure 1** within the woodland dripline limit, meets size criteria to be considered a woodland. Further, while tree density surveys were not completed, the treed area is also believed to meet density requirements to be considered a woodland.

#### 1.1.3.2. *Public Forest Policy (2018)*

##### *Policy Overview*

The Public Forest Policy (Centre Wellington 2018) applies to municipally owned trees.

The Public Forest Policy includes details on approved tree species (Appendix 1), tree planting details (Appendix 2), tree preservation details (Appendix 3), minimum caliper size of planted trees (Appendix 4), and tree planting setbacks (Appendix 5).

Per Section C.2.2, trees shall be replaced at a ratio of 2:1. Per Section C.4., no more than 10 percent of any one species of tree shall be planted at any planting site, no more than 6 trees of any one species shall be planted in a row on either side of the street (refer to section C.4).

#### *Subject Property Assessment*

Municipal street trees were surveyed as part of this arborist report. Further, as per direction from the Town and its peer reviewer, Natural Resource Solutions Inc. (NRSI), we have applied the Public Forest Policy compensation ratio for individual tree removals and tree removals within hedgerows (please see Agency Correspondence in **Appendix 5**).

### **1.1.4. Canadian Food Inspection Agency Directive: D-03-08 (2021)**

#### *1.1.4.1. Policy Overview*

The Canadian Food Inspection Agency (CFIA) regulates the movement of all Ash (*Fraxinus spp.*) material, including logs, bark, branches, fresh leaves, woodchips, and nursery stock to control the spread of a non-native beetle, the Emerald Ash Borer, whose larvae burrow into Ash. To slow the spread of Emerald Ash Borer to new areas, Ash material may not be transported outside of a regulated area into a non-regulated area. People who move regulated materials from regulated areas within the permission of the CFIA could face fines and/or prosecution. A map of the Emerald Ash Borer Regulated Areas in Canada can be found at: [Areas regulated for the emerald ash borer - Canadian Food Inspection Agency \(canada.ca\)](https://www.inspection.gc.ca/areas-regulees-pour-le-cerambryx-vert/eng)

#### *1.1.5. Subject Property Assessment*

Ash trees are present on the Subject Property. Ash material may not be transported outside of a regulated area into a non-regulated area.

### **1.1.6. Migratory Birds Convention Act (1994)**

#### *1.1.6.1. Policy Overview*

The *Migratory Birds Convention Act* (MBCA) and its *Regulations* protect listed migratory birds in Canada through the conservation of populations, individuals, and their nests. Article I of the MBCA identifies migratory species that are protected under this act. It is a contravention of this act to harass, harm, or kill protected migratory birds, remove, or disrupt their nests, and/or eggs.

#### *1.1.6.2. Subject Property Assessment*

The Subject Property contains habitat for migratory birds. Migratory birds could be impacted during works (tree / shrub removals). In addition to destruction of habitat, noise, vibrations and light from construction activities could disturb birds outside of the development footprint and deter them from their nests.

Any tree and vegetation removals should be conducted outside of the active bird nesting season (generally outside of April 1 – August 31). Where this is not possible, a qualified avian biologist should search the area within 48 hours of these activities as a due diligence measure to demonstrate compliance with the MBCA. Despite nest searches being conducted, some nests may go undetected. Therefore, if migratory birds, their nests or eggs are encountered during tree/vegetation removal activities, the works shall cease, and the consulting ecologist or Environment Canada be contacted for advice. A protective buffer will be placed around the nest and works will be prohibited within the buffer until the young have fledged.

### 1.1.7. Endangered Species Act (2007)

#### 1.1.7.1. Policy Overview

The *Endangered Species Act* (ESA) provides regulatory protection for Species at Risk and their habitat in Ontario. Species listed as Endangered and Threatened, and habitat for those species, is protected from development under the ESA. Habitat for Special Concern species is not protected under the ESA but is considered Significant Wildlife Habitat (SWH) and is protected under Section 2.1 of the 2020 *Provincial Policy Statement* (PPS).

#### 1.1.7.2. Subject Property Assessment

None of the trees species inventoried are considered Species at Risk.

### 1.1.8. Ontario Forestry Act (1990)

#### 1.1.8.1. Policy Overview

The *Forestry Act* provides criteria for identifying treed areas that qualify as woodlands based on an assessment of tree diameter and density. It also provides a directive on boundary tree identification and regulates the injury or destruction of boundary trees. A boundary tree is defined in Section 10 (2) as a “tree whose trunk is growing on the boundary between adjoining lands” and “is the common property of the owners of the adjoining lands”. Section 10 (3) states that “every person who injures or destroys a tree growing on the boundary between adjoining lands without the consent of the landowners is guilty of an offence under this Act.” The *Forestry Act* does not provide a definition of ‘tree trunk’ which has since been addressed via case law (*Hartley v Cunningham et al*, 2013 ONSC 2929). Per case law, a tree trunk is defined as the “entire trunk from its point of growth away from its roots up to its top where it branches out to limbs and foliage” (*ibid*). Therefore, boundary trees are trees where any part of the trunk (i.e., not restricted to the base of the trunk) straddles a property line.

#### 1.1.8.2. Subject Property Assessment

Presumed boundary trees are present on the Subject Property and have been noted in the Tree Inventory Table (**Appendix 2**). Verification of tree ownership and consent to injure or remove boundary trees is the responsibility of the proponent.

## 1.2. Proposed Development

The proposed development on the Subject Property is illustrated in **Figure 1**.

The proposed residential development includes 113 single detached lots, 4 future single detached lots, a townhouse block, an apartment block, 2 stormwater management facilities, a park, and a large open space block. The development area has been designed to avoid wetlands and mature natural vegetation as much as possible. The development will mainly occupy areas that were previously used as agricultural land. Areas of woodland edge, consisting of cultural woodland and thicket along the northwest and northeast side of the wooded area, will be removed for the Walser Street extension and stormwater treatment (**Figure 1**). There will be some removal of vegetation, including trees, for placement of a sanitary sewer line along the southeast edge of the woodland. See the EIS Addendum (2022) for the grading plan.

In order to connect the Ainley Farm property to the existing subdivision to the southwest, the access road to the site will encroach into successional areas along the northwest side of the natural vegetation block as well as a small area of wetland. Development of storm water facilities along the northeast side of the natural vegetation block will also require removal of a portion of the successional vegetation along the northeastern boundary.

Where a buffer has been identified between the woodland and the proposed development, it ranges from 0 m (adjacent to the storm water management block) to 10 m. Since the wetland is contained within the woodland, the distance between the wetland the proposed development ranges from 10 m at two points where the wetland extends eastward, to approximately 80 m. As noted in the previous paragraph, on the northwest side of the development, it will not be possible to maintain a buffer due to the development of the Walser St. Extension.

Sanitary sewer service will be provided to the site via the installation of a new 200 mm diameter sanitary sewer on a 6 m wide easement from Keating Drive, running along the south boundary of the vegetation block. This area was previously occupied by a municipal drain, which was modified at the time of the development to the south. Water service for the site will be provided by the installation of a new 200 mm diameter watermain on Walser Street, connecting to the existing watermain on Walser Street. The implementation of services will require removal of very few trees.

## 2. Methods

The tree inventory was completed on November 30<sup>th</sup> 2021, May 6<sup>th</sup> 2022, and May 13<sup>th</sup> 2022 by Pauline Catling, Senior Ecologist; ISA Certified Arborist (ON-2721A) and Devin Bettencourt, Junior Ecologist; ISA Certified Arborist (ON-2831A). Tree diameter (DBH) was measured at approximately 1.4 m above grade. DBH for split stemmed trees was calculated by adding the DBH of each stem. All standing trees

equal to or greater than 10 cm diameter at breast height (DBH) that could be impacted by the proposed development were inventoried. GPS location was recorded using a handheld GPS unit.

Trunk integrity, crown structure, and crown vigour were evaluated, and the canopy height and width were estimated. Trees were tagged with aluminum tree tags for easy recognition. Trees on adjacent property or Township property were not tagged, and DBH was estimated. Trees bordering between the Subject Property and adjacent properties were also not tagged without adjacent landowner permission and DBH was estimated. Following the examination of these parameters, the tree vigour class was determined to categorize the condition of the tree. These classes range from excellent (1) to dead (6). These criteria are provided in **Appendix 1**.

### 3. Results and Discussion

A total of 343 trees were inventoried, of which 278 occurred on the Subject Property, 6 occurred along the border between adjacent properties and the Subject Property (i.e., 'boundary trees'), 40 occurred on Township property, and 19 occurred on adjacent properties (see the Tree Inventory table provided in **Appendix 2**). Tree locations and tag numbers are marked on the Tree Preservation Plan (**Appendix 3**). Adjacent landowners and the Township must be consulted and provide permission before injury/removal of off-site or boundary trees. Township of Centre Wellington will need to be consulted and provide permission to determine the process for requesting removal / injury of Township owned trees as part of the site plan application.

A total of 282 trees were native (83%), most common of which was Trembling Aspen (*Populus tremuloides*). 58 trees were non-native including: Domestic Apple (*Malus pumila*), Manitoba Maple (*Acer negundo*), Horse Chestnut (*Aesculus hippocastanum*), Amur Maple (*Acer ginnala*), Columnar English Oak (*Quercus robur 'Fastigiata'*), Norway Maple (*Acer platanoides*), and Sweet Cherry (*Prunus avium*). Manitoba Maple (*Acer negundo*), while native to Ontario is generally not considered indigenous to the Wellington area. The highly invasive European Buckthorn (*Rhamnus cathartica*), a shrub, was not included in the inventory but is present in high numbers within the area.

Trees ranged from excellent to dead in condition. The majority of trees surveyed were in excellent condition (**Table 1**). A total of 122 trees were in excellent condition, of which 111 were native species. 100 trees were in good condition, of which 70 were native species. All other trees ranged from fair to dead in condition. Tree size ranged from 10 to 160 cm (**Table 2**), the largest being a split stemmed Manitoba Maple (*Acer negundo*). No Heritage Trees or Species at Risk were present within the survey area.

**Table 1. Summary of Tree Vigor Class for Trees Surveyed**

| Common Name                   | Latin Name                        | Condition* |    |    |   |   |    | Total |
|-------------------------------|-----------------------------------|------------|----|----|---|---|----|-------|
|                               |                                   | 1          | 2  | 3  | 4 | 5 | 6  |       |
| <i>Acer ginnala</i>           | Amur Maple                        |            | 1  |    |   |   |    | 1     |
| <i>Acer negundo</i>           | Manitoba Maple                    | 5          | 24 | 10 | 3 |   |    | 42    |
| <i>Acer platanoides</i>       | Norway Maple                      | 1          |    |    |   |   |    | 1     |
| <i>Acer saccharinum</i>       | Silver Maple                      |            |    | 1  |   |   |    | 1     |
| <i>Acer saccharum</i>         | Sugar Maple                       | 7          | 3  | 1  | 1 |   |    | 12    |
| <i>Aesculus hippocastanum</i> | Horse Chestnut                    |            | 1  |    |   |   |    | 1     |
| <i>Betula alleghaniensis</i>  | Yellow Birch                      | 3          | 1  |    | 1 |   |    | 5     |
| <i>Betula papyrifera</i>      | Paper Birch                       |            | 1  |    |   |   |    | 1     |
| <i>Crataegus sp.</i>          | Hawthorn sp.                      | 4          | 6  | 2  |   | 1 |    | 13    |
| <i>Fraxinus americana</i>     | White Ash (incl. cf. Ash sp.)     |            | 7  | 13 |   | 2 | 3  | 25    |
| <i>Fraxinus pennsylvanica</i> | Green Ash (incl. cf. Green Ash)   |            | 5  | 1  | 2 |   | 34 | 42    |
| <i>Fraxinus sp.</i>           | Ash sp. (incl. cf. Ash sp.)       | 1          | 1  | 1  | 1 |   | 9  | 13    |
| <i>Juglans nigra</i>          | Black Walnut                      | 1          | 1  |    |   |   | 1  | 3     |
| <i>Malus pumila</i>           | Domestic Apple                    | 1          | 3  | 1  | 1 | 2 | 1  | 9     |
| <i>Malus sp.</i>              | Apple sp.                         |            |    | 1  |   |   |    | 1     |
| <i>Ostrya virginiana</i>      | Ironwood                          |            | 1  |    |   |   |    | 1     |
| <i>Picea glauca</i>           | White Spruce                      | 1          |    |    |   |   |    | 1     |
| <i>Picea pungens</i>          | Blue Spruce                       | 4          |    |    |   |   |    | 4     |
| <i>Picea sp.</i>              | Spruce sp.                        | 1          |    |    |   |   |    | 1     |
| <i>Pinus strobus</i>          | Eastern White Pine                |            | 1  |    |   |   |    | 1     |
| <i>Populus balsamifera</i>    | Balsam Poplar                     | 2          | 1  |    |   |   |    | 3     |
| <i>Populus sp.</i>            | Poplar sp. (incl. cf. Poplar sp.) | 3          | 1  |    |   |   |    | 4     |
| <i>Populus tremuloides</i>    | Trembling Aspen                   | 34         | 17 | 5  | 1 | 2 |    | 59    |
| <i>Prunus avium</i>           | Sweet Cherry                      | 1          |    |    |   |   |    | 1     |

| Common Name                       | Latin Name                        | Condition* |            |           |           |           |           | Total      |
|-----------------------------------|-----------------------------------|------------|------------|-----------|-----------|-----------|-----------|------------|
|                                   |                                   | 1          | 2          | 3         | 4         | 5         | 6         |            |
| <i>Prunus serotina</i>            | Black Cherry                      | 4          | 3          | 1         |           | 1         | 1         | 10         |
| <i>Quercus robur 'Fastigiata'</i> | Columnar English Oak              | 2          |            |           |           |           |           | 2          |
| <i>Quercus rubra</i>              | Red Oak                           | 2          |            |           | 1         | 1         |           | 4          |
| <i>Quercus sp.</i>                | Oak sp.                           | 2          |            |           |           |           |           | 2          |
| <i>Salix sp.</i>                  | Willow sp. (incl. cf. Willow sp.) | 4          | 3          | 2         | 1         |           |           | 10         |
| <i>Sorbus sp.</i>                 | Mountain Ash                      |            | 1          | 4         |           |           |           | 5          |
| <i>Thuja occidentalis</i>         | Eastern White Cedar               | 33         | 9          | 6         |           | 1         |           | 49         |
| <i>Tilia americana</i>            | American Basswood                 |            | 3          | 1         |           |           |           | 4          |
| <i>Tilia sp.</i>                  | Basswood sp.                      | 3          | 1          |           |           |           |           | 4          |
| <i>Ulmus americana</i>            | American Elm                      | 2          | 5          |           |           |           |           | 7          |
| <i>Ulmus sp.</i>                  | Elm sp.                           | 1          |            |           |           |           |           | 1          |
| <b>Total</b>                      |                                   | <b>122</b> | <b>100</b> | <b>50</b> | <b>12</b> | <b>10</b> | <b>48</b> | <b>343</b> |

\* 1 = excellent condition, 2 = good condition, 3 = fair condition, 4 = poor condition, 5 = very poor condition, 6 = dead.

**Table 2. Summary of Tree Size for Trees Surveyed**

| Latin Name                    | Common Name                     | DBH (cm) |       |       |       |       |       |       |       |        |         |         | Total |
|-------------------------------|---------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|--------|---------|---------|-------|
|                               |                                 | 10-20    | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 | 100-110 | 160-170 |       |
| <i>Acer ginnala</i>           | Amur Maple                      |          |       |       |       |       | 1     |       |       |        |         |         | 1     |
| <i>Acer negundo</i>           | Manitoba Maple                  | 14       | 12    | 6     | 2     | 1     | 3     | 1     | 1     |        | 1       | 1       | 42    |
| <i>Acer platanoides</i>       | Norway Maple                    |          | 1     |       |       |       |       |       |       |        |         |         | 1     |
| <i>Acer saccharinum</i>       | Silver Maple                    |          |       |       |       | 1     |       |       |       |        |         |         | 1     |
| <i>Acer saccharum</i>         | Sugar Maple                     | 5        |       | 3     | 3     |       | 1     |       |       |        |         |         | 12    |
| <i>Aesculus hippocastanum</i> | Horse Chestnut                  |          | 1     |       |       |       |       |       |       |        |         |         | 1     |
| <i>Betula alleghaniensis</i>  | Yellow Birch                    | 2        | 2     |       |       |       |       |       |       | 1      |         |         | 5     |
| <i>Betula papyrifera</i>      | Paper Birch                     |          |       | 1     |       |       |       |       |       |        |         |         | 1     |
| <i>Crataegus sp.</i>          | Hawthorn sp.                    | 5        | 3     | 3     |       | 1     |       | 1     |       |        |         |         | 13    |
| <i>Fraxinus americana</i>     | White Ash                       | 12       | 6     | 4     | 3     |       |       |       |       |        |         |         | 25    |
| <i>Fraxinus pennsylvanica</i> | Green Ash (incl. cf. Green Ash) | 23       | 14    | 4     |       | 1     |       |       |       |        |         |         | 42    |
| <i>Fraxinus sp.</i>           | Ash sp. (incl. cf. Ash sp.)     | 7        | 5     | 1     |       |       |       |       |       |        |         |         | 13    |
| <i>Juglans nigra</i>          | Black Walnut                    | 3        |       |       |       |       |       |       |       |        |         |         | 2     |
| <i>Malus pumila</i>           | Domestic Apple                  |          | 1     | 1     | 6     | 1     |       |       |       |        |         |         | 9     |
| <i>Malus sp.</i>              | Apple sp.                       | 1        |       |       |       |       |       |       |       |        |         |         | 1     |
| <i>Ostrya virginiana</i>      | Ironwood                        |          | 1     |       |       |       |       |       |       |        |         |         | 1     |
| <i>Picea glauca</i>           | White Spruce                    | 1        |       |       |       |       |       |       |       |        |         |         | 1     |
| <i>Picea pungens</i>          | Blue Spruce                     |          | 3     | 1     |       |       |       |       |       |        |         |         | 4     |
| <i>Picea sp.</i>              | Spruce sp.                      | 1        |       |       |       |       |       |       |       |        |         |         | 1     |
| <i>Pinus strobus</i>          | Eastern White Pine              |          |       | 1     |       |       |       |       |       |        |         |         | 1     |
| <i>Populus balsamifera</i>    | Balsam Poplar                   | 2        | 1     |       |       |       |       |       |       |        |         |         | 2     |

| Latin Name                        | Common Name                       | DBH (cm)   |            |           |           |           |          |          |          |          |          |          | Total      |
|-----------------------------------|-----------------------------------|------------|------------|-----------|-----------|-----------|----------|----------|----------|----------|----------|----------|------------|
|                                   |                                   | 10-20      | 20-30      | 30-40     | 40-50     | 50-60     | 60-70    | 70-80    | 80-90    | 90-100   | 100-110  | 160-170  |            |
| <i>Populus sp.</i>                | Poplar sp. (incl. cf. Poplar sp.) | 3          |            |           | 1         |           |          |          |          |          |          |          | 4          |
| <i>Populus tremuloides</i>        | Trembling Aspen                   | 28         | 25         | 5         | 1         |           |          |          |          |          |          |          | 59         |
| <i>Prunus avium</i>               | Sweet Cherry                      |            |            | 1         |           |           |          |          |          |          |          |          | 1          |
| <i>Prunus serotina</i>            | Black Cherry                      | 1          | 1          | 2         | 3         | 1         | 2        |          |          |          |          |          | 10         |
| <i>Quercus robur 'Fastigiata'</i> | Columnar English Oak              | 2          |            |           |           |           |          |          |          |          |          |          | 2          |
| <i>Quercus rubra</i>              | Red Oak                           |            | 2          |           |           |           |          | 1        |          |          | 1        |          | 3          |
| <i>Quercus sp.</i>                | Oak sp.                           |            | 1          |           | 1         |           |          |          |          |          |          |          | 3          |
| <i>Salix sp.</i>                  | Willow sp. (incl. cf. Willow sp.) | 3          | 5          | 1         |           | 1         |          |          |          |          |          |          | 10         |
| <i>Sorbus sp.</i>                 | Mountain Ash                      | 4          |            |           |           | 1         |          |          |          |          |          |          | 5          |
| <i>Thuja occidentalis</i>         | Eastern White Cedar               | 25         | 11         | 5         | 3         | 2         |          | 1        | 1        |          | 1        |          | 49         |
| <i>Tilia americana</i>            | American Basswood                 | 1          |            | 1         |           | 1         | 1        |          |          |          |          |          | 4          |
| <i>Tilia sp.</i>                  | Basswood sp.                      | 1          | 2          |           | 1         |           |          |          |          |          |          |          | 4          |
| <i>Ulmus americana</i>            | American Elm                      | 2          | 4          | 1         |           |           |          |          |          |          |          |          | 6          |
| <i>Ulmus sp.</i>                  | Elm sp.                           |            |            | 1         |           |           |          |          |          |          |          |          | 1          |
| <b>Total</b>                      |                                   | <b>146</b> | <b>101</b> | <b>42</b> | <b>24</b> | <b>11</b> | <b>8</b> | <b>4</b> | <b>2</b> | <b>1</b> | <b>3</b> | <b>1</b> | <b>343</b> |

### 3.1. Trees to be Removed/ Injured/ Retained

With the proposed plan, 320 trees will be removed and 21 have the potential to be injured (**Table 5**). Trees to be removed for the proposed development are trees that fall directly in the development footprint or trees that will be severely impacted by grading, excavation and/or construction activities. Of the 320 trees to be removed, 278 are located within the Subject Property, 6 trees along the boundary of the Subject Property and adjacent properties, and 36 trees within Township property that will require permission for removal. Guidelines for removal are as follows:

- Trees approved for removal must be clearly marked on-site, preferably with orange or yellow spray paint at breast height (1.4 m) and at the base of the stem (stump height) as per the Ontario Tree Marking Guide;
- Tree removal cannot proceed until written approval of the TIPP has been granted by The Township;
- Approved tree removals shall be carried out prior to site works and in such a manner as to minimize site disturbance and damage to trees to be retained;
- Approved tree protection fencing must be installed and inspected prior to tree removals unless otherwise approved by the Township;
- The Canadian Food Inspection Agency (CFIA) restricts the movement of any part of trees infested with or host to a regulated pest or disease. For more information about transporting regulated material, contact your local CFIA office;
- Timing of removals should avoid the migratory bird window of April 1<sup>st</sup> to August 30<sup>th</sup>

Trees identified as retained but that may be injured as a result of construction activity may have impacts to the root system, however tree stability and health should not be compromised with appropriate mitigation (e.g., root pruning, mulching of exposed roots, watering and fertilizing if more extensive root damage occurs). The potential to impact retained trees was determined by the amount and type of work to be completed within the Minimum Tree Protection Zone (MTPZ) in combination with factors related to age, species, and an assessment of the current health. It was determined that based on the proposed plan, 21 trees (17 trees on adjacent properties and 4 on Township property) will be injured. Trees identified as “retained” include trees either far enough away from proposed work so that they should not experience any injury or trees that are already dead. These trees would have no work proposed within their MTPZ.

No trees are recommended for relocation. It was determined that trees surveyed on site were not suitable for relocation because of their non-native status or large size. Larger trees are harder to relocate, and older trees are less likely to survive relocation or damage.

### 3.2. Potential Impacts to Remaining Trees

The majority of the surveyed trees are to be removed. The removal of trees and construction activities has the potential to impact adjacent retained trees via soil compaction, excavation, or increasing erosion potential in the surrounding area. Potential impacts to these trees are expected to be minor and are not expected to cause fatal injury. Impacts to injured trees may be direct or indirect and may include:

- Injury to roots or reduction in available water due to soil compaction within the root zone
- Acute or chronic effects of pollutants such as fuels, oils, salts, etc.
- Reduction or increase in soil moisture water due to alteration of the adjacent lands

### 3.3. Arborist Recommendations

1. Compensation planting for trees to be removed as outlined in **Section 4**.
2. Tree protection measures for retained trees as outlined in **Section 5**.
3. Mitigation measures for trees to be injured as outlined in **Section 5**.
4. Adjacent property owners sharing boundary trees proposed for removal or trees to be injured will need to provide authorization made aware of the proposed development and potential effects on their trees.

## 4. Tree Compensation

The County of Wellington Conservation and Sustainable Use of Woodlands Tree By-law (5115-09) does not state specific details on tree compensation. Recommendations for tree compensation has been determined by Madison Postma, Registered Professional Forester from Natural Resource Solutions Inc. (NRSI) and approved by Mariana Iglesias, Senior Planner and Mat Alain, Urban Forestry Project Manager from the Township of Wellington (**Appendix 5**). A map illustrating the breakdown of tree compensation ratios by area is provided in **Appendix 4**.

Tree compensation for the removal of 35 municipally owned trees located in the southern portion of the study area (park north of Keating Dr.) and hedgerow / individual trees within the Subject Property will be compensated according to the standards listed within the Public Forest Policy (Centre Wellington 2018) (2:1 ratio, meaning 2 trees for every tree removed equal to or larger than 10 cm DBH). Therefore, 70 trees will need to be planted as compensation, with a caliper size of 50 mm to 70 mm.

Tree compensation for the removal of 38 hedgerow/individual trees located within the Subject Property will be compensated according to the standards listed within the Public Forest Policy (Centre Wellington 2018) (2:1 ratio, meaning 2 trees for every tree removed equal to or larger than 10 cm

DBH). Therefore, 76 trees will need to be planted as compensation, with a caliper size of 50 mm to 70 mm.

The area of woodland proposed for removal will be compensated at a 1:1 ratio in order to maintain tree canopy cover. NRSI requested that tree planting occur at density of 1200 trees per hectare of any size. If tree planting of larger caliper species is proposed within the development envelope, the density/numbers of trees per hectare will be adjusted consistent with the Forestry Act (e.g., 750 over 5 cm diameter per hectare). The proposed development plan will result in the removal of 0.763 ha woodland trees. Based on the area proposed for removal, 916 trees of any size (e.g., whips, 50-100 cm height) will be planted for compensation. This is based on the calculation of  $(0.763)(1200) = 916$  trees. Planted trees shall come with a 2-year warranty period and monitoring be conducted during this period to determine numbers of replacement trees.

To summarize, a total of 916 replacement trees of any size will be required for removal within the woodland, a total of 76 trees of caliper size 50 mm to 70 mm will be required for removal within the hedgerows / individual trees, and a total 70 trees of caliper size 50 mm to 70 mm will be required for removal of municipality owned trees. **Table 3** below provides a summary of compensation requirements for trees proposed for removal for each area.

**Table 3. Summary of Compensation Requirements for Trees Proposed for Removal**

| Tree Removal Location      | Compensation Requirement                           | Live Tree Removals <sup>3</sup> | Total area planned for removal <sup>3</sup> | Required Replacement Trees                            |
|----------------------------|--|---------------------------------|---|---|
| Woodland Trees             | 1200 trees/ha removed                              | 200                             | 0.763 ha                                    | <b>916</b> (any size) <sup>1</sup>                    |
| Hedgerows/Individual Trees | 2 trees for every 1 trees removed with a DBH ≥ 10) | 38                              | N/A   | <b>76</b> (caliper size of 50mm to 70mm) <sup>2</sup> |
| Municipality Owned Trees   | 2 trees for every 1 trees removed with a DBH ≥ 10) | 35                              | N/A   | <b>70</b> (caliper size of 50mm to 70mm) <sup>2</sup> |

<sup>1</sup>As per the recommendations of NRSI and the Township of Wellington (1200 trees/ha)

<sup>2</sup>Based on compensation requirements provided in the Public Forest Policy (Centre Wellington 2018)

<sup>3</sup>Dead trees are not included, as they do not require compensation

For trees removed within the Subject Property, it is believed the Subject Property is large enough in size to accommodate the replacement of trees directly on site. A map illustrating the available restoration area, equal to 1.055 ha, is provided within **Appendix 4**. Therefore, financial compensation is not considered a necessary means of fulfilling the required compensation recommendations. Compensation should be confirmed with the Township of Wellington. For trees removed outside of the Subject Property and owned by the municipality, discussion with the Township of Wellington is required to confirm the location of replacement trees.

Compensation plantings should be assessed for quality by a Certified Arborist prior to planting as well as after planting to assess ongoing health. Compensation plantings should be cared for with appropriate pruning, watering, and mulching. All pruning must be conducted by or supervised by an Arborist.

Trees planted for compensation within the Subject Property shall include species indigenous to south central Ontario area and suited to the local hydrological and soil conditions. **Table 4** provides a summary of trees species proposed as replacement trees within the Subject Property. Other native tree species may also be considered as approved by a consulting ecologist.

**Table 4: Summary of Tree Species Proposed to be Planted within the Subject Property**

| Scientific Name            | Common Name          |
|----------------------------|----------------------|
| <i>Acer saccharum</i>      | Sugar Maple          |
| <i>Betula papyrifera</i>   | Paper Birch          |
| <i>Juglans nigra</i>       | Black Walnut         |
| <i>Ostrya virginiana</i>   | Eastern Hop-hornbeam |
| <i>Picea glauca</i>        | White Spruce         |
| <i>Pinus strobus</i>       | Eastern White Pine   |
| <i>Populus balsamifera</i> | Balsam Poplar        |
| <i>Populus tremuloides</i> | Trembling Aspen      |
| <i>Prunus serotina</i>     | Black Cherry         |
| <i>Quercus rubra</i>       | Red Oak              |
| <i>Thuja occidentalis</i>  | Eastern White Cedar  |
| <i>Tilia americana</i>     | American Basswood    |

\*Other native tree species may also be considered

For municipally owned trees, conditions within the Public Forest Policy apply. For a list of suitable tree species for Centre Wellington refer to Appendix 1, for tree planting details refer to Appendix 2, and for tree planting specifications refer to Appendix 4 within the Public Forest Policy (Centre Wellington 2018).

## 5. Tree Preservation

### 5.1. Recommended Tree Protection and Mitigation Measures

According to the proposed plan, no trees within the development footprint on the Subject Property will be retained. 21 trees on Township and adjacent lands will be retained but may be injured by the proposed works.

In order to prevent fatal injury to the trees recommended for protection, Minimum Tree Protection Zone (MTPZ) shall be established according to the requirements in Appendix 3 of the Public Forest Policy (Centre Wellington 2018), which defines minimum MTPZ distance based on tree DBH. MTPZ

has been listed in **Table 5** (see also **Appendix 2**). MTPZ shall be established and delineated with protection fencing to prevent entry by the contractors during construction. The MTPZ detailed below should be measured from the tree trunk.

**Table 5. Trees potentially injured and their associated MTPZ and PRZ.**

| Species   | DBH (cm) | Height (m) | Canopy Radius (m) | Condition <sup>1</sup> | Location   |           | MTPZ (m) |
|---|----------|------------|-------------------|------------------------|------------|-----------|----------|
|   |          |            |                   |                        | X Coord    | Y Coord   |          |
| Sugar Maple<br><i>Acer saccharum</i>                        | 45       | 19         | 10                | 2                      | -80.423142 | 43.692828 | 3        |
| Sugar Maple<br><i>Acer saccharum</i>                        | 39       | 19         | 10                | 1                      | -80.423371 | 43.693005 | 2.4      |
| Yellow Birch<br><i>Betula alleghaniensis</i>                | 17       | 7          | 4                 | 1                      | -80.423623 | 43.694022 | 1.8      |
| Paper Birch<br><i>Betula papyrifera</i>                     | 33.5     | 12         | 7                 | 2                      | -80.423322 | 43.692968 | 2.4      |
| Ash sp.<br><i>Fraxinus sp.</i>                              | 10       | 14         | 4                 | 1                      | -80.423415 | 43.694174 | 1.2      |
| Blue Spruce<br><i>Picea pungens</i>                         | 30       | 12         | 4                 | 1                      | -80.423594 | 43.693366 | 2.4      |
| Poplar sp.<br><i>Populus sp.</i>                            | 10       | 15         | 2.5               | 1                      | -80.423826 | 43.693874 | 1.2      |
| Poplar sp.<br><i>Populus sp.</i>                            | 40       | 25         | 7                 | 1                      | -80.423951 | 43.693786 | 2.4      |
| cf. Poplar sp.<br><i>cf. Populus sp.</i>                    | 15       | 16         | 3.5               | 1                      | -80.423794 | 43.693901 | 1.8      |
| Sweet Cherry<br><i>Prunus avium</i>                         | 30       | 8          | 4                 | 1                      | -80.422238 | 43.695006 | 2.4      |
| Columnar English Oak<br><i>Quercus robur</i><br>'Fastigiata | 15       | 11         | 2                 | 1                      | -80.423570 | 43.693354 | 1.8      |
| Columnar English Oak<br><i>Quercus robur</i><br>'Fastigiata | 15       | 11         | 2                 | 1                      | -80.423556 | 43.693345 | 1.8      |
| Red Oak<br><i>Quercus rubra</i>                             | 24       | 13         | 5.5               | 1                      | -80.423399 | 43.692957 | 2.4      |
| Willow sp.<br><i>Salix sp.</i>                              | 11       | 6          | 6                 | 2                      | -80.423989 | 43.693758 | 1.8      |

| Species  | DBH (cm) | Height (m) | Canopy Radius (m) | Condition <sup>1</sup> | Location   |           | MTPZ (m) |
|--|----------|------------|-------------------|------------------------|------------|-----------|----------|
|  |          |            |                   |                        | X Coord    | Y Coord   |          |
| Willow sp.<br><i>Salix sp.</i>                   | 16       | 14         | 5                 | 1                      | -80.423785 | 43.693910 | 1.8      |
| Willow sp.<br><i>Salix sp.</i>                   | 27       | 13         | 4                 | 2                      | -80.423831 | 43.693874 | 2.4      |
| Willow sp.<br><i>Salix sp.</i>                   | 28       | 11         | 7                 | 1                      | -80.423575 | 43.694056 | 2.4      |
| Willow sp.<br><i>Salix sp.</i>                   | 29       | 11         | 6                 | 3                      | -80.423869 | 43.693846 | 2.4      |
| Eastern White Cedar<br><i>Thuja occidentalis</i> | 18       | 7          | 5                 | 1                      | -80.423783 | 43.693908 | 1.8      |
| Eastern White Cedar<br><i>Thuja occidentalis</i> | 27       | 12         | 4                 | 1                      | -80.423820 | 43.693880 | 2.4      |
| American Elm<br><i>Ulmus americana</i>           | 18       | 14         | 3.5               | 1                      | -80.423818 | 43.693882 | 1.8      |

<sup>1</sup>1 = excellent condition, 2 = good condition, 3 = fair condition, 4 = poor condition, 5 = very poor condition, 6 = dead.

Tree protection fencing shall be installed to the specifications detailed in Appendix 3 of the Public Forest Policy (Centre Wellington 2018). Entry into tree protection zones by the contractor shall be prohibited. If entry into tree protection zones is required to accommodate construction, a Certified Arborist shall be consulted to ensure construction activities do not cause injury to the trees. Tree protection fencing shall be installed prior to commencing construction and maintained throughout the duration of the proposed works.

### 5.1.1. Root Pruning in Excavation Area to be Supervised by Qualified Arborist

If excavation within the root zones of trees to be protected is required, root pruning shall be undertaken or supervised by a qualified arborist and follow the guidelines in Appendix 3 of the Public Forest Policy (Centre Wellington 2018).

### 5.1.2. Equipment Refueling to be Conducted away from Natural Vegetation

During construction, refueling of equipment shall be conducted a minimum of 30 m away from the Core Area.

### 5.1.3. Recommendation to Minimize Use of Deicing Salts during Site Occupation

It is recommended that long-term occupants of the Subject Property minimize salt application on the driveways and paths in order to prevent potential chronic effects of salts on trees and other vegetation.

## 5.2. Monitoring Requirements

It is recommended that a Certified Arborist be on site to supervise critical stages, including:

- Tree marking and removal;
- Installation of tree protection hoarding and other tree protection measures;
- Excavation or grading within the MTPZ, and root pruning, if required;
- Occurrences of physical tree injury;
- Site preparation for planting; and
- Tree planting and maintenance.

Reporting requirements may be required by the Township of Wellington at any critical stage of development. Tree protection fencing should be inspected bi-monthly or on a timeline agreed upon with the Township of Centre Wellington. Erosion and sediment control inspections should ensure that no work occurs outside of the designated work area in order to ensure no harm comes to additional trees outside of the Subject Property and proposed sanitation line area. Post-construction monitoring should be completed by an Arborist to assess health of compensation plantings and nearby trees.

## 5.3. Additional Mitigation Measures

- Vegetation removal should occur outside of the breeding bird season for Nesting Zone C2 (April 1- August 31) (Government of Canada 2017).
- Erosion and sediment control measures as outlined in the EIS (2017) should be followed.
- Clearing equipment and vehicles should be cleaned to prevent the introduction of non-native species (Clean Equipment Protocol for Industry, 2013).
- Ash species removed should be mulched and disposed of on-site.
- Monitoring pre, during, and post-construction should be completed to provide adaptive management recommendations.
  - A 2-year monitoring program is required by the Township to ensure the woodland habitat has been adequately restored and compensated for.
- It is recommended that long-term occupants of the Subject Property minimize salt application on the driveways and paths in order to prevent potential chronic effects of salts on trees and other vegetation that may be planted in compensation.

## 6. Conclusion/ Summary

A total of 343 trees above 10 cm DBH were inventoried, of which 278 occurred on the Subject Property, 6 occurred along the border between adjacent properties and the Subject Property, 40 occurred on Township property, and 19 occurred on adjacent properties. The proposed works will require the removal of the majority of surveyed trees (320 total). Permission will be required for removal or injury of trees on adjacent properties and Township property including removal of 36 trees and injury of 21 trees. Additionally, there are 6 trees planned for removal which occur along the border between adjacent properties and the Subject Property where the ownership was unclear, these tree species will also require permission.

Tree compensation requires a total of 916 replacement trees of any size for removal within the woodland, a total of 76 trees of caliper size 50 mm to 70 mm for removal within the hedgerows / individual trees, and a total 70 trees of caliper size 50 mm to 70 mm for removal of municipality owned trees.

For trees removed within the Subject Property (i.e., woodland, hedgerow/individual trees), replacement trees can be planted within the restoration area illustrated in **Appendix 4**. For trees removed outside of the Subject Property, owned by the municipality, discussion with the Township of Wellington is required to confirm the location of replacement trees.

A site visit by a Certified Arborist should occur post-construction to ensure trees to be protected did not experience fatal injury and appropriate compensation plantings have occurred.

## 7. References

- Canadian Food Inspection Agency (CFIA). 2021. D-03-08: Phytosanitary Requirements to Prevent the Introduction Into, and Spread Within Canada, of the Emerald Ash Borer, *Agrilus planipennis* (Fairmaire). Accessed online: <https://inspection.canada.ca/plant-health/invasive-species/directives/date/d-03-08/eng/1323821135864/1323821440121>
- County of Wellington. 2009. Conservation and Sustainable Use of Woodlands By-law (511509). <https://www.wellington.ca/en/resident-services/resources/Planning/Forest-Conservation/Approved-Forest-Conservation-By-law-5115-09.pdf>
- Centre Wellington. 2018. Public Forest Policy. Accessed online: [https://www.centrewellington.ca/en/living-here/resources/Documents/Public-Forest-Policy\\_2018.01.30.pdf](https://www.centrewellington.ca/en/living-here/resources/Documents/Public-Forest-Policy_2018.01.30.pdf)
- Government of Canada. 2017. General nesting periods of migratory birds (Zone C2). Accessed online: [https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html#\\_03](https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html#_03)
- Grand River Conservation Authority (GRCA). 2022. GRCA Mapping: Regulated Areas. Accessed online: <https://camaps.maps.arcgis.com/apps/webappviewer/index.html?id=c963d73e6f124ab6b68b06afc0a279e6>
- Halloran, Joe, Anderson, Hayley and Tassie, Danielle. 2013. Clean Equipment Protocol for Industry. Peterborough Stewardship Council and Ontario Invasive Plant Council. Peterborough, ON. [https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/Clean-Equipment-Protocol\\_June2016\\_D3\\_WEB-1.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/Clean-Equipment-Protocol_June2016_D3_WEB-1.pdf)
- Lilly, Sharon. 2010. Arborists' Certification Study Guide. International Society of Arboriculture.
- Matheny, N. and Clark, J. R. (1998). Trees and Development. Champaign: International Society of Arboriculture.

## APPENDIX 1 | Tree Vigor Criterion

### Trunk Integrity:

|    |   |
|----|---|
| r  | root damage or decay                    |
| st | split stem/weak crotch                  |
| br | butt rot                                |
| l  | excessive lean (e.g. 30° to 45°)        |
| h  | upper stem holes/decay                  |
| w  | wound (bark damage, large pruning cuts) |
| f  | fungus (conks)                          |
| ib | insect borers                           |
| b  | burl                                    |
| wh | woodpecker holes                        |
| s  | seam or cracks                          |
| c  | cankers                                 |
| ba | bark loss                               |

### Crown Structure:

|    |   |
|----|---|
| bt | broken top  |
| bl | broken or severed primary limbs                               |
| p  | pollarded (severe and improper pruning)                       |
| ab | adventitious branching (clusters of new shoots on main trunk) |

### Crown Vigour:

|    |  |
|----|--|
| db | dead branch (less than 11% dead wood)                            |
| dl | moderate dead wood (e.g. 11 to 35% secondary branches mostly)    |
| d  | significant crown dieback (e.g. >35% dead wood in primary limbs) |
| u  | undersized leaves  |
| fc | foliar chlorosis/yellowing                                       |
| fn | foliar necrosis/browning   |
| id | insect defoliators (species if known)                            |
| di | disease (species if known)                                       |

### Tree Vigour Classes:

#### *Class 1 Excellent Condition, No Risk Trees*

Sound, thrifty, full crowned trees of natural shape with no dead limbs in the top of the crown and no significant evidence of decline.

***Class 2 Good Condition, Low Risk Trees***

Full to medium crowned trees of natural shape with a live crown ratio  $\geq 40\%$  that exhibit no more than minor dead wood (e.g. up to 10% secondary branches only and mainly in the lower crown) and no more than one moderate trunk defect or indicator of decline.

***Class 3 Fair Condition, Medium Risk Trees***

Full to small crowned trees with a live crown ratio  $\geq 25\%$  that exhibit no more than moderate dead wood (e.g. 11 to 35% secondary branches mostly) and no more than two moderate trunk defects or indicators of decline.

***Class 4 Poor Condition, High Risk Trees***

Medium to very small crowned trees (e.g. live crown ratio  $< 25\%$ ) that exhibit one or more of the following conditions.

- a) Trees with significant foliage of poor colour and less than normal size.
- b) Trees with significant crown dieback (e.g.  $> 35\%$  dead wood in primary limbs).
- c) Trees with major trunk defects or decay (e.g. one extensive problem, or 3 or more distinct but moderate decline indicators).

***Class 5 Very Poor Condition, Very High Risk Trees***

Dying trees with very little live crown.

***Class 6 Dead, Very High Risk Trees***

Dead trees with no live crown.

## APPENDIX 2 | Tree Inventory Data

| Latin Name          | Common Name    | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments   |
|---------------------|----------------|--------------|------------|----------|------------|-------------------|-----------------|-----------------|-------------|-----------|--------------|-----------|-----------------|----------|-----------|-----------|--|
| <i>Acer ginnala</i> | Amur Maple     | Y1           | N/A        | 63.5     | 8          | 4                 | st, p           | ab              |             | 2         | N            | Township  | Remove          | N/A      | 80.423442 | 43.693240 |  |
| <i>Acer negundo</i> | Manitoba Maple | 23           | 23         | 33       | 17         | 7                 | st              |                 | dl          | 1         | N            | Proponent | Remove          | N/A      | 80.424010 | 43.693864 | Few lower broken branches                                    |
| <i>Acer negundo</i> | Manitoba Maple | 81           | 81         | 16.8     | 12         | 5                 |                 |                 |             | 1         | N            | Proponent | Remove          | 2.4      | 80.423331 | 43.694238 |  |
| <i>Acer negundo</i> | Manitoba Maple | 82           | 82         | 18.1     | 13         | 5                 | l               |                 | dl          | 1         | N            | Proponent | Remove          | N/A      | 80.423330 | 43.694238 | A couple dead branches                                       |
| <i>Acer negundo</i> | Manitoba Maple | 86           | 86         | 18       | 9          | 4                 | l               | ab              | dl          | 2         | N            | Proponent | Remove          | N/A      | 80.423302 | 43.694258 | A couple dead branches                                       |
| <i>Acer negundo</i> | Manitoba Maple | 419          | 419        | 31.8     | 22         | 9                 | w               |                 | dl          | 2         | N            | Proponent | Remove          | N/A      | 80.426706 | 43.696565 |  |
| <i>Acer negundo</i> | Manitoba Maple | 424          | 424        | 19       | 18         | 10                | l               |                 |             | 2         | N            | Proponent | Remove          | N/A      | 80.426931 | 43.696414 |  |
| <i>Acer negundo</i> | Manitoba Maple | 425          | 425        | 11.9     | 15         | 4                 | l               |                 |             | 2         | N            | Proponent | Remove          | N/A      | 80.426917 | 43.696453 |  |
| <i>Acer negundo</i> | Manitoba Maple | 426          | 426        | 10       | 15         | 4                 |                 |                 | dl          | 2         | N            | Proponent | Remove          | N/A      | 80.426947 | 43.696450 |  |
| <i>Acer negundo</i> | Manitoba Maple | 671          | 671        | 26.4     | 18         | 8                 | l               | bl              |             | 3         | N            | Proponent | Remove          | N/A      | 80.427086 | 43.696331 |  |
| <i>Acer negundo</i> | Manitoba Maple | 673          | 673        | 27.8     | 25         | 8                 |                 |                 | v           | 1         | N            | Proponent | Remove          | N/A      | 80.427099 | 43.696377 |  |
| <i>Acer negundo</i> | Manitoba Maple | 674          | 674        | 50.5     | 26         | 10                | st, ab          |                 |             | 3         | N            | Proponent | Remove          | N/A      | 80.427183 | 43.696349 |  |
| <i>Acer negundo</i> | Manitoba Maple | 675          | 675        | 61       | 22         | 10                | st              | dl              |             | 3         | N            | Proponent | Remove          | N/A      | 80.427287 | 43.696438 |  |
| <i>Acer negundo</i> | Manitoba Maple | 676          | 676        | 27.4     | 20         | 8                 | l, ab           |                 |             | 2         | N            | Proponent | Remove          | N/A      | 80.427246 | 43.696413 |  |
| <i>Acer negundo</i> | Manitoba Maple | 677          | 677        | 31.6     | 25         | 8                 | ab              |                 |             | 2         | N            | Proponent | Remove          | N/A      | 80.427153 | 43.696440 |  |
| <i>Acer negundo</i> | Manitoba Maple | 678          | 678        | 65       | 24         | 9                 | w, f, st        |                 |             | 3         | N            | Proponent | Remove          | N/A      | 80.427126 | 43.696497 |  |
| <i>Acer negundo</i> | Manitoba Maple | 679          | 679        | 32.2     | 22         | 8                 | ab              | dl              |             | 2         | N            | Proponent | Remove          | N/A      | 80.427177 | 43.696425 |  |
| <i>Acer negundo</i> | Manitoba Maple | 680          | 680        | 17       | 19         | 6                 | ab              | dl              |             | 4         | N            | Proponent | Remove          | N/A      | 80.427075 | 43.696449 |  |
| <i>Acer negundo</i> | Manitoba Maple | 681          | 681        | 27.5     | 25         | 8                 |                 | dl              |             | 2         | N            | Proponent | Remove          | N/A      | 80.427080 | 43.696496 |  |
| <i>Acer negundo</i> | Manitoba Maple | 682          | 682        | 35       | 25         | 9                 |                 | bl, dl          |             | 2         | N            | Proponent | Remove          | N/A      | 80.427050 | 43.696491 |  |
| <i>Acer negundo</i> | Manitoba Maple | 683          | 683        | 28.5     | 18         | 8                 | l, ab           | dl              |             | 3         | N            | Proponent | Remove          | N/A      | 80.427010 | 43.696472 | Heavy lean, width tree canopy has been adjusted accordingly. |

| Latin Name          | Common Name    | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity  | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments   |
|---------------------|----------------|--------------|------------|----------|------------|-------------------|------------------|-----------------|-------------|-----------|--------------|-----------|-----------------|----------|-----------|-----------|--|
| <i>Acer negundo</i> | Manitoba Maple | 684          | 684        | 72       | 26         | 10                | st, loose bark   | bl              |             | 2         | N            | Proponent | Remove          | N/A      | 80.427035 | 43.696483 | Heavy lean, width tree canopy has been adjusted accordingly. |
| <i>Acer negundo</i> | Manitoba Maple | 685          | 685        | 17       | 22         | 4                 | ab               | bl              |             | 4         | N            | Proponent | Remove          | N/A      | 80.427035 | 43.696579 |  |
| <i>Acer negundo</i> | Manitoba Maple | 686          | 686        | 34.4     | 25         | 10                |                  | dl              |             | 3         | N            | Proponent | Remove          | N/A      | 80.427011 | 43.696567 |  |
| <i>Acer negundo</i> | Manitoba Maple | 687          | 687        | 18.8     | 20         | 8                 |                  | dl              |             | 2         | N            | Proponent | Remove          | N/A      | 80.427080 | 43.696552 |  |
| <i>Acer negundo</i> | Manitoba Maple | 688          | 688        | 18.1     | 20         | 6                 | l                |                 |             | 2         | N            | Proponent | Remove          | N/A      | 80.427063 | 43.696602 |  |
| <i>Acer negundo</i> | Manitoba Maple | 689          | 689        | 62.3     | 25         | 10                | st               |                 |             | 2         | N            | Proponent | Remove          | N/A      | 80.427007 | 43.696578 |  |
| <i>Acer negundo</i> | Manitoba Maple | 690          | 690        | 85       | 26         | 10                | l, st            |                 |             | 2         | N            | Proponent | Remove          | N/A      | 80.427051 | 43.696611 | Heavy lean, width tree canopy has been adjusted accordingly. |
| <i>Acer negundo</i> | Manitoba Maple | 946          | 946        | 14.3     | 8          | 4                 | w, s             |                 |             | 3         | N            | Proponent | Remove          | N/A      | 80.427697 | 43.695572 |  |
| <i>Acer negundo</i> | Manitoba Maple | 983          | 983        | 43.9     | 10         | 10                | st               |                 |             | 2         | N            | Proponent | Remove          | N/A      | 80.427440 | 43.696316 |  |
| <i>Acer negundo</i> | Manitoba Maple | 984          | 984        | 105      | 10         | 10                | st, ab           | dl, bl          |             | 3         | N            | Proponent | Remove          | N/A      | 80.427437 | 43.696384 |  |
| <i>Acer negundo</i> | Manitoba Maple | 985          | 985        | 29       | 9          | 8                 | st               |                 |             | 3         | N            | Proponent | Remove          | N/A      | 80.427430 | 43.696275 |  |
| <i>Acer negundo</i> | Manitoba Maple | 986          | 986        | 20.3     | 9          | 8                 |                  |                 |             | 3         | N            | Proponent | Remove          | N/A      | 80.427394 | 43.696294 |  |
| <i>Acer negundo</i> | Manitoba Maple | 988          | 988        | 12.5     | 9          | 4                 |                  | dl              |             | 2         | N            | Proponent | Remove          | N/A      | 80.427284 | 43.696340 |  |
| <i>Acer negundo</i> | Manitoba Maple | 989          | 989        | 46.5     | 10         | 10                | st, w            |                 |             | 2         | N            | Proponent | Remove          | N/A      | 80.427344 | 43.696342 |  |
| <i>Acer negundo</i> | Manitoba Maple | 990          | 990        | 160      | 30         | 14                | st, cavity, s, w | db              |             | 2         | N            | Proponent | Remove          | N/A      | 80.427212 | 43.696286 | Bat habitat  |
| <i>Acer negundo</i> | Manitoba Maple | 991          | 991        | 24.5     | 25         | 6                 | twisted          |                 |             | 2         | N            | Proponent | Remove          | N/A      | 80.427099 | 43.696342 |  |
| <i>Acer negundo</i> | Manitoba Maple | 992          | 992        | 25.9     | 27         | 8                 |                  | dl              |             | 2         | N            | Proponent | Remove          | N/A      | 80.427136 | 43.696317 |  |
| <i>Acer negundo</i> | Manitoba Maple | 993          | 993        | 21.5     | 28         | 8                 |                  | dl              |             | 2         | N            | Proponent | Remove          | N/A      | 80.427076 | 43.696388 |  |
| <i>Acer negundo</i> | Manitoba Maple | 994          | 994        | 14       | 5          | 4                 | l                | bl              | v           | 2         | N            | Proponent | Remove          | N/A      | 80.427045 | 43.696385 | Heavy lean, width tree canopy has been adjusted accordingly. |
| <i>Acer negundo</i> | Manitoba Maple | 995          | 995        | 14.2     | 8          | 4                 | ab               | bt              |             | 4         | N            | Proponent | Remove          | N/A      | 80.427045 | 43.696385 |  |

| Latin Name                    | Common Name    | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity          | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments                                 |
|-------------------------------|----------------|--------------|------------|----------|------------|-------------------|--------------------------|-----------------|-------------|-----------|--------------|-----------|-----------------|----------|-----------|-----------|--|
| <i>Acer negundo</i>           | Manitoba Maple | R            | N/A        | 20.5     | 19         | 5                 |                          |                 | dl          | 2         | N            | Township  | Remove          | N/A      | 80.423911 | 43.693472 |  |
| <i>Acer negundo</i>           | Manitoba Maple | A1           | N/A        | 26       | 12         | 5                 | s                        |                 |             | 1         | N            | Township  | Remove          | N/A      | 80.423820 | 43.693389 |  |
| <i>Acer platanoides</i>       | Norway maple   | 121          | 121        | 20.7     | 7          | 4                 | s                        |                 |             | 1         | N            | Proponent | Remove          | N/A      | 80.422452 | 43.694870 |  |
| <i>Acer saccharinum</i>       | Silver Maple   | W1           | N/A        | 52.5     | 18         | 12                | r, st, w, peeling bark   |                 |             | 3         | Y            | Township  | Remove          | N/A      | 80.423271 | 43.693042 |  |
| <i>Acer saccharum</i>         | Sugar Maple    | 197          | 197        | 16.8     | 20         | 7                 |                          |                 |             | 1         | Y            | Proponent | Remove          | 2.4      | 80.426667 | 43.696770 |  |
| <i>Acer saccharum</i>         | Sugar Maple    | 198          | 198        | 31.7     | 22         | 8                 |                          |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.426637 | 43.696785 |  |
| <i>Acer saccharum</i>         | Sugar Maple    | 202          | 202        | 11.2     | 19         | 6                 |                          |                 |             | 1         | Y            | Proponent | Remove          | 1.8      | 80.426654 | 43.696774 |  |
| <i>Acer saccharum</i>         | Sugar Maple    | 309          | 309        | 13       | 19         | 6                 |                          |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.426655 | 43.696758 |  |
| <i>Acer saccharum</i>         | Sugar Maple    | 405          | 405        | 11.7     | 16         | 5                 |                          |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.426528 | 43.696948 |  |
| <i>Acer saccharum</i>         | Sugar Maple    | 700          | 700        | 30       | 19         | 6                 | st, w                    |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.426699 | 43.696777 |  |
| <i>Acer saccharum</i>         | Sugar Maple    | J            | N/A        | 15       | 9          | 4.5               | r, w, peeling bark       |                 | dl          | 4         | Y            | Township  | Remove          | N/A      | 80.422911 | 43.692828 | Few lower broken branches, DBH estimated |
| <i>Acer saccharum</i>         | Sugar Maple    | O1           | N/A        | 39       | 19         | 10                | r                        |                 |             | 1         | Y            | Township  | Injure          | 2.4      | 80.423371 | 43.693005 |  |
| <i>Acer saccharum</i>         | Sugar Maple    | R1           | N/A        | 45       | 19         | 10                | r, st, w, s              |                 |             | 2         | Y            | Township  | Injure          | 3        | 80.423142 | 43.692828 |  |
| <i>Acer saccharum</i>         | Sugar Maple    | S1           | N/A        | 47       | 19         | 10                | r, w, s, st, ib          | p               | d           | 3         | Y            | Township  | Remove          | N/A      | 80.423218 | 43.693061 | Emerald Ash Borer                        |
| <i>Acer saccharum</i>         | Sugar Maple    | T1           | N/A        | 48.5     | 18         | 10                | r, st                    |                 |             | 2         | Y            | Township  | Remove          | N/A      | 80.423124 | 43.692880 |  |
| <i>Acer saccharum</i>         | Sugar Maple    | X1           | N/A        | 60       | 18         | 9                 | r, st, w                 |                 |             | 1         | Y            | Township  | Remove          | N/A      | 80.423007 | 43.692814 |  |
| <i>Aesculus hippocastanum</i> | Horse Chestnut | E1           | N/A        | 28.5     | 11         | 6                 | r, st, w                 |                 |             | 2         | N            | Township  | Remove          | N/A      | 80.423034 | 43.692895 |  |
| <i>Betula alleghaniensis</i>  | Yellow Birch   | 36           | 36         | 24       | 14         | 6                 |                          |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423855 | 43.693945 |  |
| <i>Betula alleghaniensis</i>  | Yellow Birch   | 404          | 404        | 13.1     | 18         | 5                 | w, ab                    |                 |             | 4         | Y            | Proponent | Remove          | N/A      | 80.426567 | 43.696949 | Burn marks                               |
| <i>Betula alleghaniensis</i>  | Yellow Birch   | 474          | 474        | 90.5     | 30         | 14                | f, cavity, s, loose bark |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.428495 | 43.695564 | bat habitat                              |

| Latin Name                        | Common Name    | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership          | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments                  |
|-----------------------------------|----------------|--------------|------------|----------|------------|-------------------|-----------------|-----------------|-------------|-----------|--------------|--------------------|-----------------|----------|-----------|-----------|---------------------------|
| <i>Betula alleghaniensis</i>      | Yellow Birch   | N            | N/A        | 17       | 7          | 4                 |                 | p               |             | 1         | Y            | Adjacent Landowner | Injure          | 1.8      | 80.423623 | 43.694022 | DBH estimated             |
| <i>Betula alleghaniensis</i>      | Yellow Birch   | D1           | N/A        | 28       | 11         | 7                 | r               |                 |             | 1         | Y            | Adjacent Landowner | Injure          | 2.4      | 80.423575 | 43.694056 | DBH estimated             |
| <i>Betula papyrifera</i>          | Paper Birch    | L1           | N/A        | 33.5     | 12         | 7                 | w, st, s, br    |                 |             | 2         | Y            | Township           | Injure          | 2.4      | 80.423322 | 43.692968 |                           |
| <i>cf. Fraxinus pennsylvanica</i> | cf. Green ash  | 35           | 35         | 15       | 12         | 4                 | s               |                 | ab, dl      | 2         | Y            | Proponent          | Remove          | N/A      | 80.423851 | 43.693904 | Few lower broken branches |
| <i>cf. Fraxinus sp.</i>           | cf. Ash sp.    | 416          | 416        | 24.5     | 24         | 6                 | cavity, no bark |                 | dl          | 6         | Y            | Proponent          | Remove          | N/A      | 80.426507 | 43.696723 | Dead, Bat habitat         |
| <i>cf. Populus sp.</i>            | cf. Poplar sp. | C2           | N/A        | 15       | 16         | 3.5               |                 |                 |             | 1         | Y            | Adjacent Landowner | Injure          | 1.8      | 80.423794 | 43.693901 | DBH estimated             |
| <i>cf. Salix sp.</i>              | cf. Willow sp. | 18           | 18         | 20.5     | 8          | 6                 | st              |                 | dl          | 2         | Y            | Proponent          | Remove          | N/A      | 80.424010 | 43.693770 |                           |
| <i>cf. Salix sp.</i>              | cf. Willow sp. | V1           | N/A        | 52.5     | 10         | 5.5               | st, r,          | bl              | dl          | 4         | Y            | Township           | Remove          | N/A      | 80.423912 | 43.693480 |                           |
| <i>cf. Salix sp.</i>              | cf. Willow sp. | K2           | N/A        | 29       | 20         | 5.5               | l               |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.423920 | 43.693809 | DBH estimated             |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 115          | 115        | 57       | 9          | 5                 |                 |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.422714 | 43.694682 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 403          | 403        | 19.8     | 12         | 5                 |                 |                 |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.426500 | 43.696787 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 410          | 410        | 36       | 11         | 6                 | st              |                 | v           | 2         | Y            | Proponent          | Remove          | N/A      | 80.426251 | 43.696887 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 411          | 411        | 25       | 11         | 6                 | st              |                 | v           | 2         | Y            | Proponent          | Remove          | N/A      | 80.426243 | 43.696899 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 414          | 414        | 32       | 18         | 6                 | st              |                 | dl          | 2         | Y            | Proponent          | Remove          | N/A      | 80.426385 | 43.696779 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 417          | 417        | 10       | 12         | 4                 |                 |                 | dl          | 2         | Y            | Proponent          | Remove          | N/A      | 80.426405 | 43.696754 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 422          | 422        | 20       | 15         | 6                 | st              |                 |             | 3         | Y            | Proponent          | Remove          | N/A      | 80.426830 | 43.696506 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 439          | 439        | 11       | 15         | 5                 |                 | bl              |             | 1         | Y            | Proponent          | Remove          | 2.4      | 80.427605 | 43.695894 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 441          | 441        | 11.8     | 15         | 3                 |                 |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.427575 | 43.695870 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 445          | 445        | 11       | 15         | 5                 | st              |                 |             | 5         | Y            | Proponent          | Remove          | 2.4      | 80.427588 | 43.695877 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 456          | 456        | 28       | 18         | 6                 | st              |                 |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.428036 | 43.695835 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 974          | 974        | 34       | 6          | 6                 | st              |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.427554 | 43.696247 |                           |
| <i>Crataegus sp.</i>              | Hawthorn sp.   | 987          | 987        | 70       | 10         | 10                | st              | dl              |             | 3         | Y            | Proponent          | Remove          | N/A      | 80.427370 | 43.696292 |                           |

| Latin Name                | Common Name | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity   | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments                |
|---------------------------|-------------|--------------|------------|----------|------------|-------------------|-------------------|-----------------|-------------|-----------|--------------|-----------|-----------------|----------|-----------|-----------|-------------------------|
| <i>Fraxinus americana</i> | White Ash   | 401          | 401        | 23.5     | 17         | 4                 | ib, w, s          |                 |             | 3         | Y            | Proponent | Remove          | N/A      | 80.426615 | 43.696738 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 408          | 408        | 43.1     | 30         | 4                 | c,ba              | bl              | dl          | 6         | Y            | Proponent | Remove          | N/A      | 80.426265 | 43.696914 | Dead, Bat habitat       |
| <i>Fraxinus americana</i> | White Ash   | 409          | 409        | 32.7     | 18         | 3                 | c, ba, f          |                 |             | 6         | Y            | Proponent | Remove          | N/A      | 80.426257 | 43.696892 | Dead, Bat habitat       |
| <i>Fraxinus americana</i> | White Ash   | 412          | 412        | 41.7     | 28         | 9                 | ib, s, ab         |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.426444 | 43.696810 | Bat habitat             |
| <i>Fraxinus americana</i> | White Ash   | 428          | 428        | 15.4     | 22         | 5                 | ib                |                 | dl          | 3         | Y            | Proponent | Remove          | N/A      | 80.427173 | 43.696179 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 429          | 429        | 12       | 18         | 6                 | ib                |                 | dl          | 3         | Y            | Proponent | Remove          | N/A      | 80.427170 | 43.696244 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 431          | 431        | 13.5     | 21         | 6                 | ib                |                 | dl          | 3         | Y            | Proponent | Remove          | N/A      | 80.427211 | 43.696200 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 432          | 432        | 12.1     | 17         | 4                 | ib                |                 | dl          | 3         | Y            | Proponent | Remove          | N/A      | 80.427211 | 43.696200 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 433          | 433        | 17       | 22         | 8                 | ib, w             |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.427277 | 43.696199 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 435          | 435        | 16       | 18         | 5                 | ib                |                 | dl          | 3         | Y            | Proponent | Remove          | N/A      | 80.427376 | 43.696090 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 436          | 436        | 13.1     | 18         | 5                 | ib, w             |                 | dl          | 3         | Y            | Proponent | Remove          | N/A      | 80.427416 | 43.696044 |                         |
| <i>Fraxinus americana</i> | White Ash   | 437          | 437        | 20       | 20         | 6                 | ib, w, loose bark |                 | dl          | 5         | Y            | Proponent | Remove          | N/A      | 80.427469 | 43.695983 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 440          | 440        | 17.3     | 22         | 5                 | ib                |                 | dl          | 3         | Y            | Proponent | Remove          | N/A      | 80.427556 | 43.695901 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 457          | 457        | 34       | 30         | 10                |                   |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.428034 | 43.695803 |                         |
| <i>Fraxinus americana</i> | White Ash   | 695          | 695        | 30       | 22         | 6                 |                   |                 | v           | 2         | Y            | Proponent | Remove          | N/A      | 80.426898 | 43.696536 |                         |
| <i>Fraxinus americana</i> | White Ash   | 696          | 696        | 35       | 20         | 8                 |                   | dl              | v           | 2         | Y            | Proponent | Remove          | N/A      | 80.426849 | 43.696566 |                         |
| <i>Fraxinus americana</i> | White Ash   | 947          | 947        | 11.7     | 8.5        | 4                 | w, s, ib          |                 |             | 3         | Y            | Proponent | Remove          | N/A      | 80.427673 | 43.695595 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 948          | 948        | 28.4     | 11         | 7                 | w, s, ib          |                 |             | 3         | Y            | Proponent | Remove          | N/A      | 80.427694 | 43.695597 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 950          | 950        | 24.5     | 10         | 8                 | w, s, ib          |                 |             | 3         | Y            | Proponent | Remove          | N/A      | 80.427725 | 43.695667 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 957          | 957        | 10.4     | 7          | 4                 | v, ib             |                 |             | 3         | Y            | Proponent | Remove          | 1.8      | 80.427681 | 43.695900 | Emerald Ash Borer       |
| <i>Fraxinus americana</i> | White Ash   | 959          | 959        | 40.2     | 7          | 1                 | ib                | bt, db          |             | 6         | Y            | Proponent | Remove          | N/A      | 80.427599 | 43.695919 | Dead, Emerald Ash Borer |

| Latin Name                    | Common Name | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity  | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments                  |
|-------------------------------|-------------|--------------|------------|----------|------------|-------------------|------------------|-----------------|-------------|-----------|--------------|-----------|-----------------|----------|-----------|-----------|---------------------------|
| <i>Fraxinus americana</i>     | White Ash   | 965          | 965        | 10       | 7          | 1                 | ib, w, s         |                 |             | 5         | Y            | Proponent | Remove          | 1.8      | 80.427556 | 43.695926 | Emerald Ash Borer         |
| <i>Fraxinus americana</i>     | White Ash   | 971          | 971        | 29.5     | 10         | 8                 | w                |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.427561 | 43.696191 |                           |
| <i>Fraxinus americana</i>     | White Ash   | 973          | 973        | 26.8     | 10         | 7                 |                  |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.427555 | 43.696261 |                           |
| <i>Fraxinus americana</i>     | White Ash   | 976          | 976        | 13       | 8          | 5                 | ib               |                 |             | 3         | Y            | Proponent | Remove          | N/A      | 80.427426 | 43.696082 | Emerald Ash Borer         |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 34           | 34         | 57       | 14         | 7                 | st               |                 | ab, dl      | 2         | Y            | Proponent | Remove          | N/A      | 80.423835 | 43.693914 | Few lower broken branches |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 41           | 41         | 17       | 10         | 4                 | l                | ab              |             | 2         | Y            | Proponent | Remove          | N/A      | 80.423832 | 43.694026 |                           |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 58           | 58         | 14       | 18         | N/A               | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423586 | 43.694113 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 59           | 59         | 14       | 18         | 2                 | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423550 | 43.694139 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 60           | 60         | 16       | 18         | 3                 | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423549 | 43.694141 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 61           | 61         | 21       | 18         | N/A               | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423552 | 43.694146 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 62           | 62         | 31       | 25         | 3                 | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423549 | 43.694145 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 63           | 63         | 16       | 15         | 3                 | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423550 | 43.694147 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 64           | 64         | 25       | 22         | 3                 | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423544 | 43.694154 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 66           | 66         | 27       | 22         | 5                 | ib, peeling bark |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423468 | 43.694183 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 67           | 67         | 22.2     | 15         | 4                 | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423511 | 43.694189 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 68           | 68         | 30       | 17         | 5                 | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423507 | 43.694194 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 69           | 69         | 14.9     | 16         | 5                 | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423504 | 43.694192 | DBH estimated, dead       |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 70           | 70         | 23       | 19.7       | 3                 | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423498 | 43.694195 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 73           | 73         | 31.2     | 20         | 5                 | s, ib            |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423415 | 43.694217 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 74           | 74         | 14       | 6          | 4                 | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423444 | 43.694201 | Dead, Emerald Ash Borer   |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 78           | 78         | 22.3     | 8          | N/A               | ib               |                 | d           | 6         | Y            | Proponent | Remove          | N/A      | 80.423377 | 43.694231 | Dead, Emerald Ash Borer   |

| Latin Name                    | Common Name | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity     | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership          | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments                |
|-------------------------------|-------------|--------------|------------|----------|------------|-------------------|---------------------|-----------------|-------------|-----------|--------------|--------------------|-----------------|----------|-----------|-----------|-------------------------|
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 79           | 79         | 15       | 6          | 3                 | s, ib               |                 | d           | 6         | Y            | Adjacent Landowner | Retain          | N/A      | 80.423389 | 43.694208 | DBH estimated, dead     |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 80           | 80         | 26.5     | 6          | N/A               | ib                  |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423336 | 43.694233 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 83           | 83         | 36.7     | 20         | 5                 | ib                  |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423335 | 43.694242 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 84           | 84         | 26       | 20         | 6                 | s                   |                 |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.423325 | 43.694249 |                         |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 85           | 85         | 13       | 8          | N/A               | ib                  |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423307 | 43.694257 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 87           | 87         | 22.2     | 20         | 2                 | s, ib, peeling bark |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423297 | 43.694308 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 88           | 88         | 11       | 5          | N/A               | l, ib               |                 | d           | 6         | Y            | Proponent          | Remove          | 2.4      | 80.423308 | 43.694304 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 89           | 89         | 26.1     | 23         | 4                 | s, ib               |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423306 | 43.694302 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 90           | 90         | 14.2     | 18         | 2.5               | ib                  |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423292 | 43.694303 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 91           | 91         | 24       | 6          | N/A               | ib                  |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423334 | 43.694279 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 93           | 93         | 22.6     | 15         | 6                 | ib                  |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423363 | 43.694276 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 94           | 94         | 21.5     | 22         | 4                 | ib                  |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423361 | 43.694281 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 95           | 95         | 13       | 8          | 3                 | s, ib               |                 | d, ab       | 3         | Y            | Proponent          | Remove          | N/A      | 80.423224 | 43.694314 | Emerald Ash Borer       |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 96           | 96         | 10.5     | 10         | 4                 | ib                  |                 | d, ab       | 4         | Y            | Proponent          | Remove          | 2.4      | 80.423228 | 43.694316 | Emerald Ash Borer       |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 97           | 97         | 12.7     | 8          | 3                 | s, ib, peeling bark |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423184 | 43.694368 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 98           | 98         | 16.5     | 11         | 4                 |                     |                 | ab          | 2         | Y            | Proponent          | Remove          | 1.8      | 80.423192 | 43.694372 |                         |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 100          | 100        | 11       | 6          | 2                 | ib, peeling bark    |                 | d           | 6         | Y            | Proponent          | Remove          | 2.4      | 80.423209 | 43.694352 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 104          | 104        | 13.5     | 8          | 3                 | ib                  |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423124 | 43.694412 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 106          | 106        | 15       | 10         | 2                 | ib, peeling bark    |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423095 | 43.694439 | Dead, Emerald Ash Borer |
| <i>Fraxinus pennsylvanica</i> | Green Ash   | 108          | 108        | 14.5     | 6          | 4                 | ib                  |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423062 | 43.694440 | Dead, Emerald Ash Borer |

| Latin Name                    | Common Name    | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership          | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments                               |
|-------------------------------|----------------|--------------|------------|----------|------------|-------------------|-----------------|-----------------|-------------|-----------|--------------|--------------------|-----------------|----------|-----------|-----------|--|
| <i>Fraxinus pennsylvanica</i> | Green Ash      | 112          | 112        | 16       | 10         | 5                 | ib              |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423111 | 43.694454 | Dead, Emerald Ash Borer                |
| <i>Fraxinus pennsylvanica</i> | Green Ash      | 113          | 113        | 16.3     | 7          | 3.5               | ib              |                 | d           | 6         | Y            | Proponent          | Remove          | 1.8      | 80.423002 | 43.694501 | Dead, Emerald Ash Borer                |
| <i>Fraxinus pennsylvanica</i> | Green Ash      | B            | N/A        | 10       | 6          | 3.5               | s, w, ib        |                 | dl          | 4         | Y            | Boundary           | Remove          | N/A      | 80.423000 | 43.694473 | Emerald Ash Borer                      |
| <i>Fraxinus pennsylvanica</i> | Green Ash      | Z            | N/A        | 26       | 15         | 5                 | st, ib          |                 | d           | 6         | Y            | Adjacent Landowner | Retain          | N/A      | 80.423416 | 43.694176 | Dead, Emerald Ash Borer                |
| <i>Fraxinus sp.</i>           | Ash sp.        | 978          | 978        | 24.8     | 6          | 1                 | w, no bark      | bt, db, bl      | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.427359 | 43.696227 | Dead                                   |
| <i>Fraxinus sp.</i>           | Ash sp.        | 120          | 120        | 18       | 4          | 2                 | ib              |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.422552 | 43.694799 | Dead, Emerald Ash Borer                |
| <i>Fraxinus sp.</i>           | Ash sp.        | 27           | 27         | 18       | 14         | 10                | w, ib           |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423921 | 43.693832 | DBH estimated, dead, Emerald Ash Borer |
| <i>Fraxinus sp.</i>           | Ash sp.        | 4            | 4          | 13.5     | 12         | 4                 |                 | ab              | dl          | 2         | Y            | Proponent          | Remove          | N/A      | 80.424187 | 43.693686 |  |
| <i>Fraxinus sp.</i>           | Ash sp.        | 5            | 5          | 13       | 10         | 10                | w, l, s, ib     | ab              | dl          | 6         | Y            | Proponent          | Remove          | N/A      | 80.424206 | 43.693673 | Dead, Emerald Ash Borer                |
| <i>Fraxinus sp.</i>           | Ash sp.        | 53           | 53         | 21       | 6          | 0                 | ib              |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423588 | 43.694078 | Dead, Emerald Ash Borer                |
| <i>Fraxinus sp.</i>           | Ash sp.        | 54           | 54         | 22.4     | 20         | N/A               | ib              |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423594 | 43.694093 | Dead, Emerald Ash Borer                |
| <i>Fraxinus sp.</i>           | Ash sp.        | 56           | 56         | 32.6     | 20         | N/A               | ib              |                 | d           | 6         | Y            | Proponent          | Remove          | N/A      | 80.423629 | 43.694109 | Dead, Emerald Ash Borer                |
| <i>Fraxinus sp.</i>           | Ash sp.        | 6            | 6          | 13       | 12         | 2.5               |                 | bl              |             | 4         | Y            | Proponent          | Remove          | N/A      | 80.424247 | 43.693703 |  |
| <i>Fraxinus sp.</i>           | Ash sp.        | 7            | 7          | 15       | 10         | 6                 | l, ib, w        |                 | dl          | 3         | Y            | Proponent          | Remove          | N/A      | 80.424228 | 43.693710 | Emerald Ash Borer                      |
| <i>Fraxinus sp.</i>           | Ash sp.        | A2           | N/A        | 10       | 14         | 4                 |                 |                 |             | 1         | Y            | Adjacent Landowner | Injure          | 1.2      | 80.423415 | 43.694174 | DBH estimated                          |
| <i>Fraxinus sp.</i>           | Ash sp.        | F2           | N/A        | 20       |            | N/A               | ib              |                 | d           | 6         | Y            | Township           | Remove          | N/A      | 80.423867 | 43.693490 | Dead, Emerald Ash Borer                |
| <i>Juglans nigra</i>          | Black Walnut   | 11           | 11         | 18.5     | 14         | 5                 |                 |                 | dl          | 6         | Y            | Proponent          | Remove          | N/A      | 80.424070 | 43.693757 |  |
| <i>Juglans nigra</i>          | Black Walnut   | Q            | N/A        | 18.5     | 7          | 4                 | st              |                 |             | 2         | Y            | Township           | Remove          | N/A      | 80.423741 | 43.693342 |  |
| <i>Malus pumila</i>           | Domestic Apple | 199          | 199        | 45       | 14         | 8                 | st, w           |                 | dl, v       | 5         | N            | Proponent          | Remove          | N/A      | 80.426495 | 43.696792 |  |
| <i>Malus pumila</i>           | Domestic Apple | 402          | 402        | 21       | 14         | 6                 | ab              |                 | dl          | 4         | N            | Proponent          | Remove          | N/A      | 80.426615 | 43.696745 |  |
| <i>Malus pumila</i>           | Domestic Apple | 415          | 415        | 46       | 18         | 6                 | st              |                 |             | 2         | N            | Proponent          | Remove          | N/A      | 80.426387 | 43.696801 |  |
| <i>Malus pumila</i>           | Domestic Apple | 418          | 418        | 46.5     | 16         | 7                 | ab, st          |                 | dl          | 3         | N            | Proponent          | Remove          | N/A      | 80.426598 | 43.696673 |  |

| Latin Name                 | Common Name        | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity            | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership          | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments                                       |
|----------------------------|--------------------|--------------|------------|----------|------------|-------------------|----------------------------|-----------------|-------------|-----------|--------------|--------------------|-----------------|----------|-----------|-----------|--|
| <i>Malus pumila</i>        | Domestic Apple     | 420          | 420        | 30       | 15         | 6                 | st                         |                 |             | 5         | N            | Proponent          | Remove          | N/A      | 80.426744 | 43.696583 |  |
| <i>Malus pumila</i>        | Domestic Apple     | 446          | 446        | 45       | 15         | 6                 |                            | bl              | dl          | 1         | N            | Proponent          | Remove          | N/A      | 80.427608 | 43.695760 |  |
| <i>Malus pumila</i>        | Domestic Apple     | 459          | 459        | 55       | 18         | 10                | st, w                      |                 | dl          | 2         | N            | Proponent          | Remove          | N/A      | 80.428119 | 43.695827 |  |
| <i>Malus pumila</i>        | Domestic Apple     | 691          | 691        | 40       | 18         | 6                 | ab                         | dl              |             | 2         | N            | Proponent          | Remove          | N/A      | 80.426980 | 43.696600 |  |
| <i>Malus pumila</i>        | Domestic Apple     | 694          | 694        | 40       | 10         | 6                 | cavity, loose bark, hollow | dl              |             | 6         | N            | Proponent          | Remove          | N/A      | 80.426876 | 43.696745 | Dead tree, bat habitat                         |
| <i>Malus sp.</i>           | Apple sp.          | H            | N/A        | 13.5     | 6          | 3                 | st, w                      |                 |             | 3         | N            | Township           | Remove          | N/A      | 80.423775 | 43.693362 |  |
| <i>Ostrya virginiana</i>   | Ironwood           | 968          | 968        | 25.3     | 11         | 8                 |                            |                 |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.427353 | 43.696073 |  |
| <i>Picea glauca</i>        | White Spruce       | E            | N/A        | 11       | 9          | 2                 |                            |                 |             | 1         | Y            | Township           | Remove          | 3        | 80.423907 | 43.693615 |  |
| <i>Picea pungens</i>       | Blue Spruce        | G2           | N/A        | 20       | 10         | 3                 |                            |                 |             | 1         | Y            | Township           | Remove          | N/A      | 80.423646 | 43.693349 |  |
| <i>Picea pungens</i>       | Blue Spruce        | H2           | N/A        | 22       | 12         | 3.5               |                            |                 |             | 1         | Y            | Township           | Remove          | N/A      | 80.423685 | 43.693372 |  |
| <i>Picea pungens</i>       | Blue Spruce        | I2           | N/A        | 22       | 10         | 3.5               |                            |                 |             | 1         | Y            | Township           | Remove          | N/A      | 80.423720 | 43.693394 |  |
| <i>Picea pungens</i>       | Blue Spruce        | L2           | N/A        | 30       | 12         | 4                 |                            |                 |             | 1         | Y            | Adjacent Landowner | Injure          | 2.4      | 80.423594 | 43.693366 | DBH estimated                                  |
| <i>Picea sp.</i>           | Spruce sp.         | G            | N/A        | 12.5     | 6          | 3                 |                            |                 |             | 1         | Y            | Boundary           | Remove          | N/A      | 80.423334 | 43.694235 | Did not tag due to uncertainty about ownership |
| <i>Pinus strobus</i>       | Eastern White Pine | N1           | N/A        | 36       | 14         | 5.5               | st, l                      |                 |             | 2         | Y            | Township           | Remove          | N/A      | 80.423884 | 43.693517 |  |
| <i>Populus balsamifera</i> | Balsam Poplar      | W            | N/A        | 22       | 18         | 5                 |                            |                 | dl          | 2         | -            | Township           | Remove          | N/A      | 80.423933 | 43.693559 | Dead lower branches                            |
| <i>Populus balsamifera</i> | Balsam Poplar      | 37           | 37         | 14.8     | 15         | 3                 |                            |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.423785 | 43.693917 |  |
| <i>Populus balsamifera</i> | Balsam Poplar      | 38           | 38         | 14       | 16         | 3                 |                            |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.423820 | 43.693886 | DBH estimated                                  |
| <i>Populus sp.</i>         | Poplar sp.         | 8            | 8          | 15       | 8          | 10                |                            | bl              |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.424185 | 43.693739 |  |
| <i>Populus sp.</i>         | Poplar sp.         | C            | N/A        | 10       | 15         | 2.5               |                            |                 |             | 1         | Y            | Adjacent Landowner | Injure          | 1.2      | 80.423826 | 43.693874 | DBH estimated                                  |
| <i>Populus sp.</i>         | Poplar sp.         | P1           | N/A        | 40       | 25         | 7                 |                            |                 | dl          | 1         | Y            | Adjacent Landowner | Injure          | 2.4      | 80.423951 | 43.693786 | DBH estimated, a few lower broken branches     |

| Latin Name                 | Common Name     | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments                    |
|----------------------------|-----------------|--------------|------------|----------|------------|-------------------|-----------------|-----------------|-------------|-----------|--------------|-----------|-----------------|----------|-----------|-----------|-----------------------------|
| <i>Populus tremuloides</i> | Trembling Aspen | 3            | 3          | 19       | 20         | 5.5               |                 | bl              |             | 1         | Y            | Proponent | Remove          | N/A      | 80.424215 | 43.693675 | Couple broken branches      |
| <i>Populus tremuloides</i> | Trembling aspen | 71           | 71         | 12       | 14         | 4                 | s               |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423464 | 43.694211 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 75           | 75         | 21.3     | 22         | 6                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423417 | 43.694233 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 77           | 77         | 13       | 13         | 5                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423383 | 43.694238 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 99           | 99         | 14.6     | 14         | 3                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423162 | 43.694390 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 101          | 101        | 11       | 11         | 3                 | h, s            |                 |             | 3         | Y            | Proponent | Remove          | 2.4      | 80.423196 | 43.694414 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 102          | 102        | 13.2     | 9          | 4                 | s, h            |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.423192 | 43.694411 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 103          | 103        | 24       | 23         | 5                 | w, s            |                 | dl          | 2         | Y            | Proponent | Remove          | N/A      | 80.423187 | 43.694411 | A couple dead branches      |
| <i>Populus tremuloides</i> | Trembling Aspen | 105          | 105        | 26.4     | 22         | 5                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423115 | 43.694417 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 107          | 107        | 17       | 14         | 3                 | w               |                 | ab          | 1         | Y            | Proponent | Remove          | N/A      | 80.423095 | 43.694443 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 109          | 109        | 20.6     | 14         | 5                 | w               |                 | dl          | 2         | Y            | Proponent | Remove          | N/A      | 80.423062 | 43.694446 | A couple dead branches      |
| <i>Populus tremuloides</i> | Trembling Aspen | 110          | 110        | 21       | 16         | 5                 | w, s            |                 | dl          | 1         | Y            | Proponent | Remove          | N/A      | 80.423055 | 43.694450 | A couple dead lower brances |
| <i>Populus tremuloides</i> | Trembling Aspen | 111          | 111        | 24       | 23         | 5                 |                 |                 | dl          | 1         | Y            | Proponent | Remove          | N/A      | 80.423111 | 43.694454 | A couple dead lower brances |
| <i>Populus tremuloides</i> | Trembling Aspen | 114          | 114        | 10       | 11         | 3                 | w               |                 |             | 2         | Y            | Proponent | Remove          | 1.8      | 80.422958 | 43.694525 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 406          | 406        | 25.1     | 22         | 8                 |                 |                 | dl, v       | 2         | Y            | Proponent | Remove          | N/A      | 80.426506 | 43.696997 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 427          | 427        | 30.6     | 30         | 8                 |                 |                 | dl, bl      | 3         | Y            | Proponent | Remove          | N/A      | 80.427032 | 43.696317 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 434          | 434        | 25.2     | 22         | 7                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.427374 | 43.696083 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 442          | 442        | 29       | 24         | 8                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.427613 | 43.695833 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 443          | 443        | 12.8     | 17         | 5                 |                 |                 | v           | 1         | Y            | Proponent | Remove          | N/A      | 80.427606 | 43.695829 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 444          | 444        | 28.2     | 20         | 10                |                 | bl              | bt, dl, v   | 1         | Y            | Proponent | Remove          | N/A      | 80.427612 | 43.695832 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 448          | 448        | 11.2     | 16         | 5                 |                 |                 |             | 1         | Y            | Proponent | Remove          | 1.8      | 80.427666 | 43.695686 |                             |
| <i>Populus tremuloides</i> | Trembling Aspen | 449          | 449        | 20.1     | 18         | 4                 | w, br           |                 | bt, bl, dl  | 5         | Y            | Proponent | Remove          | N/A      | 80.427984 | 43.695886 |                             |

| Latin Name                 | Common Name     | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments           |
|----------------------------|-----------------|--------------|------------|----------|------------|-------------------|-----------------|-----------------|-------------|-----------|--------------|-----------|-----------------|----------|-----------|-----------|--------------------|
| <i>Populus tremuloides</i> | Trembling Aspen | 450          | 450        | 26.4     | 28         | 8                 | w               |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.427961 | 43.695895 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 451          | 451        | 25.8     | 28         | 8                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.428034 | 43.695893 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 452          | 452        | 17.6     | 25         | 6                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.428031 | 43.695897 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 453          | 453        | 30.5     | 29         | 10                | w               |                 | dl          | 1         | Y            | Proponent | Remove          | N/A      | 80.428039 | 43.695891 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 454          | 454        | 31       | 30         | 8                 | w               |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.428033 | 43.695863 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 455          | 455        | 36       | 28         | 8                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.428021 | 43.695838 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 458          | 458        | 24       | 18         | 6                 | w               |                 | bt, dl      | 3         | Y            | Proponent | Remove          | N/A      | 80.428046 | 43.695883 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 460          | 460        | 19.5     | 26         | 8                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.428146 | 43.695795 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 461          | 461        | 12.6     | 18         | 6                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.428212 | 43.695763 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 462          | 462        | 15       | 17         | 6                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.428204 | 43.695766 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 463          | 463        | 17       | 15         | 4                 | f               |                 | bt, dl      | 5         | Y            | Proponent | Remove          | N/A      | 80.428190 | 43.695756 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 464          | 464        | 13.6     | 12         | 4                 | l, w            |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.428218 | 43.695768 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 465          | 465        | 18.3     | 20         | 6                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.428229 | 43.695750 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 466          | 466        | 25       | 20         | 8                 | w               |                 | dl          | 2         | Y            | Proponent | Remove          | N/A      | 80.428225 | 43.695746 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 467          | 467        | 11.4     | 10         | 4                 | l               |                 |             | 2         | Y            | Proponent | Remove          | 2.4      | 80.428231 | 43.695750 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 468          | 468        | 22.5     | 25         | 8                 | w               |                 | dl          | 1         | Y            | Proponent | Remove          | N/A      | 80.428277 | 43.695771 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 469          | 469        | 18.3     | 25         | 8                 | w               |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.428265 | 43.695747 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 470          | 470        | 20.4     | 25         | 8                 | w               |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.428283 | 43.695753 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 471          | 471        | 44.2     | 25         | 8                 | w               |                 | dl          | 2         | Y            | Proponent | Remove          | N/A      | 80.428311 | 43.695750 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 472          | 472        | 21.5     | 24         | 6                 |                 |                 | dl          | 4         | Y            | Proponent | Remove          | N/A      | 80.428327 | 43.695731 | half canopy diebak |
| <i>Populus tremuloides</i> | Trembling Aspen | 473          | 473        | 27.8     | 25         | 8                 | w,br,f          | bl              | dl          | 2         | Y            | Proponent | Remove          | N/A      | 80.428381 | 43.695645 |                    |
| <i>Populus tremuloides</i> | Trembling Aspen | 949          | 949        | 17.3     | 10         | 8                 |                 |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.427656 | 43.695581 |                    |

| Latin Name                 | Common Name     | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership          | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments                                  |
|----------------------------|-----------------|--------------|------------|----------|------------|-------------------|-----------------|-----------------|-------------|-----------|--------------|--------------------|-----------------|----------|-----------|-----------|---|
| <i>Populus tremuloides</i> | Trembling Aspen | 951          | 951        | 11.5     | 9          | 3                 | w               |                 |             | 3         | Y            | Proponent          | Remove          | N/A      | 80.427669 | 43.695691 |   |
| <i>Populus tremuloides</i> | Trembling Aspen | 952          | 952        | 24.6     | 10         | 6                 | w, s            | br              |             | 3         | Y            | Proponent          | Remove          | N/A      | 80.427740 | 43.695736 |   |
| <i>Populus tremuloides</i> | Trembling Aspen | 953          | 953        | 17.9     | 10         | 7                 | w, v            |                 |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.427768 | 43.695712 |   |
| <i>Populus tremuloides</i> | Trembling Aspen | 955          | 955        | 24       | 11         | 8                 |                 |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.427637 | 43.695827 |   |
| <i>Populus tremuloides</i> | Trembling Aspen | 956          | 956        | 19.4     | 11         | 8                 |                 |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.427649 | 43.695889 |   |
| <i>Populus tremuloides</i> | Trembling Aspen | 958          | 958        | 13.9     | 8          | 4                 |                 |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.427678 | 43.695896 |   |
| <i>Populus tremuloides</i> | Trembling Aspen | 961          | 961        | 26.5     | 11         | 8                 | c, sn           | bl              |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.427599 | 43.695913 |   |
| <i>Populus tremuloides</i> | Trembling Aspen | 962          | 962        | 24.3     | 11         | 8                 |                 |                 |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.427612 | 43.695903 |   |
| <i>Populus tremuloides</i> | Trembling Aspen | 963          | 963        | 13.6     | 10         | 6                 |                 |                 |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.427555 | 43.695885 |   |
| <i>Populus tremuloides</i> | Trembling Aspen | 966          | 966        | 10.5     | 7          | 4                 |                 |                 |             | 1         | Y            | Proponent          | Remove          | 2.4      | 80.427542 | 43.695977 |   |
| <i>Populus tremuloides</i> | Trembling Aspen | K            | N/A        | 16       | 20         | 5                 |                 |                 | dl          | 2         | Y            | Boundary           | Remove          | N/A      | 80.423006 | 43.694469 | DBH estimated                             |
| <i>Populus tremuloides</i> | Trembling Aspen | L            | N/A        | 16       | 20         | 5                 |                 |                 |             | 1         | Y            | Boundary           | Remove          | N/A      | 80.423006 | 43.694469 | DBH estimated                             |
| <i>Populus tremuloides</i> | Trembling Aspen | S            | N/A        | 21       | 8          | 2                 | st, w           |                 |             | 2         | Y            | Boundary           | Remove          | N/A      | 80.422981 | 43.694488 |   |
| <i>Populus tremuloides</i> | Trembling Aspen | T            | N/A        | 21       | 17         | 4                 | st              | bl              |             | 1         | Y            | Township           | Remove          | N/A      | 80.423955 | 43.693644 | One broken branch                         |
| <i>Populus tremuloides</i> | Trembling Aspen | I1           | N/A        | 30       | 24         | 6                 | s               |                 |             | 1         | Y            | Township           | Remove          | N/A      | 80.423912 | 43.693480 |   |
| <i>Prunus avium</i>        | Sweet Cherry    | H1           | N/A        | 30       | 8          | 4                 |                 |                 |             | 1         | N            | Adjacent Landowner | Injure          | 2.4      | 80.422238 | 43.695006 | DBH estimated, tree growing through fence |
| <i>Prunus serotina</i>     | Black Cherry    | 430          | 430        | 17.3     | 20         | 6                 |                 |                 |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.427169 | 43.696182 |   |
| <i>Prunus serotina</i>     | Black Cherry    | 438          | 438        | 25.5     | 24         | 8                 |                 | bl              |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.427562 | 43.695912 |   |
| <i>Prunus serotina</i>     | Black Cherry    | 692          | 692        | 31.5     | 23         | 7                 |                 | dl              | v           | 3         | Y            | Proponent          | Remove          | N/A      | 80.426906 | 43.696650 |   |
| <i>Prunus serotina</i>     | Black Cherry    | 954          | 954        | 33.3     | 9          | 2                 | w, d            | bt              |             | 6         | Y            | Proponent          | Remove          | N/A      | 80.427665 | 43.695842 | Dead                                      |
| <i>Prunus serotina</i>     | Black Cherry    | 960          | 960        | 44.5     | 10         | 8                 |                 | br, bl          |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.427597 | 43.695910 |   |
| <i>Prunus serotina</i>     | Black Cherry    | 970          | 970        | 44       | 11         | 8                 | w               |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.427302 | 43.696192 |   |

| Latin Name                        | Common Name          | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity    | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership          | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments   |
|-----------------------------------|----------------------|--------------|------------|----------|------------|-------------------|--------------------|-----------------|-------------|-----------|--------------|--------------------|-----------------|----------|-----------|-----------|--|
| <i>Prunus serotina</i>            | Black Cherry         | 975          | 975        | 44.2     | 9          | 7                 | s, t, l            | bl,             |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.427534 | 43.696218 | Heavy lean, width tree canopy has been adjusted accordingly. |
| <i>Prunus serotina</i>            | Black Cherry         | 977          | 977        | 64       | 12         | 10                | w                  | br, l           |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.427314 | 43.696201 |  |
| <i>Prunus serotina</i>            | Black Cherry         | 980          | 980        | 56       | 12         | 8                 | s                  | bl              |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.427387 | 43.696250 |  |
| <i>Juglans nigra</i>              | Black Walnut         | 57           | 57         | 14.6     | 20         | 3                 |                    |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.423627 | 43.694113 |  |
| <i>Prunus serotina</i>            | Black Cherry         | M2           | N/A        | 60       | 15         | 5                 | w, st              |                 | dl          | 5         | Y            | Boundary           | Remove          | N/A      | 80.422478 | 43.694843 |  |
| <i>Quercus robur 'Fastigiata'</i> | Columnar English Oak | D2           | N/A        | 15       | 11         | 2                 |                    |                 |             | 1         | N            | Adjacent Landowner | Injure          | 1.8      | 80.423570 | 43.693354 | DBH estimated  |
| <i>Quercus robur 'Fastigiata'</i> | Columnar English Oak | E2           | N/A        | 15       | 11         | 2                 |                    |                 |             | 1         | N            | Adjacent Landowner | Injure          | 1.8      | 80.423556 | 43.693345 | DBH estimated  |
| <i>Quercus rubra</i>              | Red Oak              | J2           | N/A        | 23       | 15         | 5                 | st                 |                 | dl          | 1         | Y            | Township           | Remove          | N/A      | 80.424063 | 43.693620 | Unable to reach buds, no leaves to id                        |
| <i>Quercus rubra</i>              | Red Oak              | 672          | 672        | 75       | 32         | 10                | loose bark, cavity | bl              | db          | 5         | Y            | Proponent          | Remove          | N/A      | 80.426966 | 43.696365 | Bat habitat  |
| <i>Quercus rubra</i>              | Red Oak              | 693          | 693        | 100      | 30         | 10                | f, st, loose bark  | dl              | v           | 4         | Y            | Proponent          | Remove          | N/A      | 80.426875 | 43.696717 | Bat habitat  |
| <i>Quercus rubra</i>              | Red Oak              | X            | N/A        | 24       | 13         | 5.5               | r                  |                 |             | 1         | Y            | Township           | Injure          | 2.4      | 80.423399 | 43.692957 | Estimated DBH  |
| <i>Quercus sp.</i>                | Oak sp.              | F1           | N/A        | 29       | 22         | 7                 |                    |                 | dl          | 1         | Y            | Township           | Remove          | N/A      | 80.423906 | 43.693408 | Few broken branches  |
| <i>Quercus sp.</i>                | Oak sp.              | Q1           | N/A        | 44.5     | 20         | 6                 | St                 |                 |             | 1         | Y            | Township           | Remove          | N/A      | 80.423901 | 43.693401 |  |
| <i>Salix sp.</i>                  | Willow sp.           | 10           | 10         | 16       | 9          | 4                 |                    |                 | dl          | 1         | Y            | Proponent          | Remove          | N/A      | 80.424096 | 43.693697 | Couple dead branches   |
| <i>Salix sp.</i>                  | Willow sp.           | 13           | 13         | 28       | 12         | 7                 | st, w              |                 | dl          | 3         | Y            | Proponent          | Remove          | N/A      | 80.424130 | 43.693765 |  |
| <i>Salix sp.</i>                  | Willow sp.           | F            | N/A        | 11       | 6          | 3                 | l                  |                 | dl          | 2         | Y            | Adjacent Landowner | Injure          | 1.8      | 80.423989 | 43.693758 | DBH estimated, lean canopy adjusted accordingly              |
| <i>Salix sp.</i>                  | Willow sp.           | M            | N/A        | 16       | 14         | 5                 |                    |                 |             | 1         | Y            | Adjacent Landowner | Injure          | 1.8      | 80.423785 | 43.693910 | DBH estimated  |
| <i>Salix sp.</i>                  | Willow sp.           | C1           | N/A        | 27       | 13         | 4                 | st                 |                 |             | 2         | Y            | Adjacent Landowner | Injure          | 2.4      | 80.423831 | 43.693874 | DBH estimated  |
| <i>Salix sp.</i>                  | Willow sp.           | G1           | N/A        | 29       | 11         | 6                 | st                 |                 | dl          | 3         | Y            | Adjacent Landowner | Injure          | 2.4      | 80.423869 | 43.693846 | Few lower broken branches                                    |

| Latin Name                | Common Name         | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments   |
|---------------------------|---------------------|--------------|------------|----------|------------|-------------------|-----------------|-----------------|-------------|-----------|--------------|-----------|-----------------|----------|-----------|-----------|--|
| <i>Salix sp.</i>          | Willow sp.          | J1           | N/A        | 30.5     | 22         | 6                 |                 |                 |             | 1         | Y            | Township  | Remove          | N/A      | 80.423956 | 43.693447 |  |
| <i>Sorbus sp.</i>         | Mountain Ash        | 699          | 699        | 13       | 16         | 5                 | ab              |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.426780 | 43.696843 |  |
| <i>Sorbus sp.</i>         | Mountain Ash        | 976          | 976        | 15       | 7          | 5                 | w               | db              |             | 3         | Y            | Proponent | Remove          | N/A      | 80.427316 | 43.696194 |  |
| <i>Sorbus sp.</i>         | Mountain Ash        | 979          | 979        | 60       | 9          | 7                 |                 | ab, bl          |             | 3         | Y            | Proponent | Remove          | N/A      | 80.427240 | 43.696247 |  |
| <i>Sorbus sp.</i>         | Mountain Ash        | 981          | 981        | 12.2     | 6          | 4                 | ab              | bl              |             | 3         | Y            | Proponent | Remove          | N/A      | 80.427426 | 43.696294 |  |
| <i>Sorbus sp.</i>         | Mountain Ash        | 982          | 982        | 10.8     | 4          | 3                 |                 | ab              |             | 3         | Y            | Proponent | Remove          | 2.4      | 80.427423 | 43.696310 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 1            | 1          | 20       | 9          | 2                 | st              |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.424207 | 43.693628 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 2            | 2          | 17       | 10         | 2                 | l, s            |                 | dl          | 2         | Y            | Proponent | Remove          | 2.4      | 80.424164 | 43.693642 | Trunk lean, width tree canopy has been adjusted accordingly. |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 9            | 9          | 43       | 12         | 5                 | st              |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.424128 | 43.693709 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 12           | 12         | 10.5     | 9          | 3.5               | l               |                 |             | 1         | Y            | Proponent | Remove          | 1.8      | 80.424105 | 43.693757 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 14           | 14         | 15       | 10         | 4                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.424111 | 43.693781 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 15           | 15         | 10.1     | 10         | 3.5               | l               |                 |             | 1         | Y            | Proponent | Remove          | 1.8      | 80.424095 | 43.693776 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 16           | 16         | 20       | 6          | 2                 | l, st           |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.424114 | 43.693787 | Heavy lean, width tree canopy has been adjusted accordingly. |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 17           | 17         | 81       | 11         | 6                 | st              |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.424020 | 43.693778 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 19           | 19         | 22       | 7          | 3                 | l               |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.424038 | 43.693831 | Heavy lean, width tree canopy has been adjusted accordingly. |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 20           | 20         | 31       | 14         | 6                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.424033 | 43.693839 |  |

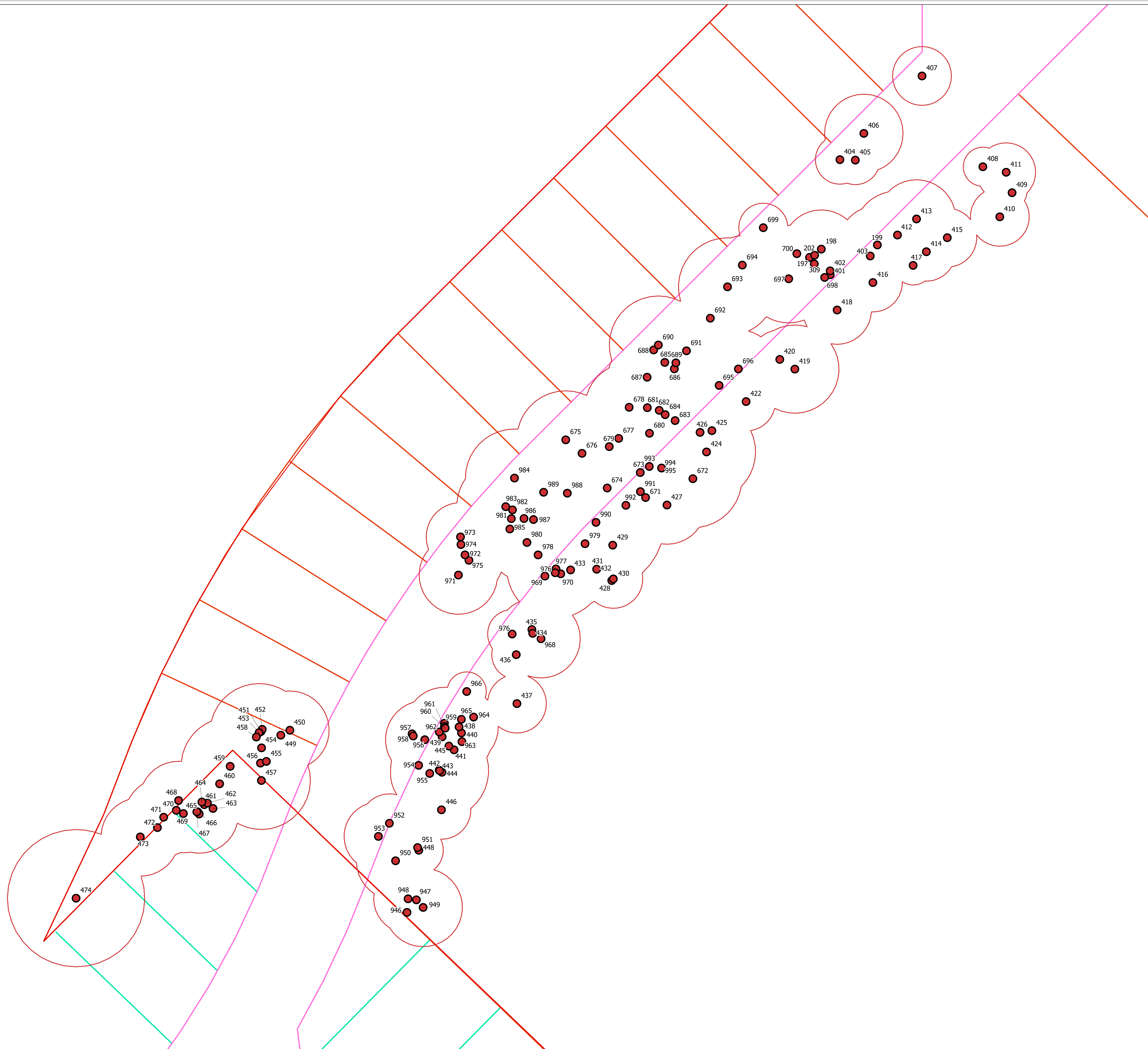
| Latin Name                | Common Name         | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments  |
|---------------------------|---------------------|--------------|------------|----------|------------|-------------------|-----------------|-----------------|-------------|-----------|--------------|-----------|-----------------|----------|-----------|-----------|---|
| <i>Thuja occidentalis</i> | Eastern White Cedar | 21           | 21         | 21       | 4          | 3                 | l               |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.424041 | 43.693836 | Heavy lean, width tree canopy has been adjusted accordingly.                        |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 22           | 22         | 12       | 5          | 2                 | l               |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.424009 | 43.693828 | Heavy lean, width tree canopy has been adjusted accordingly.                        |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 24           | 24         | 110      | 10         | 9                 | st              |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423964 | 43.693851 |   |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 25           | 25         | 15       | 8          | 4                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423937 | 43.693842 |   |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 26           | 26         | 58       | 10         | 5                 | st              |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423932 | 43.693834 |   |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 28           | 28         | 12       | 12         | 2                 | l               |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423917 | 43.693845 | Heavy lean, width tree canopy has been adjusted accordingly.                        |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 29           | 29         | 15       | 6          | 2                 | l               |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.423926 | 43.693880 | DBH estimated, tree runs across ground and sprouts up (canopy adjusted accordingly) |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 30           | 30         | 26       | 14         | 2                 | l, r            |                 |             | 3         | Y            | Proponent | Remove          | N/A      | 80.423917 | 43.693891 | Heavy lean, width tree canopy has been adjusted accordingly.                        |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 31           | 31         | 15       | 13         | 2                 | l               |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423946 | 43.693917 | Heavy lean, width tree canopy has been adjusted accordingly.                        |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 32           | 32         | 56       | 12         | 7                 | st, r           |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423874 | 43.693918 |   |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 33           | 33         | 33       | 12         | 4                 | st              |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423867 | 43.693913 | Heavy lean, width tree canopy has been adjusted accordingly.                        |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 39           | 39         | 18       | 6          | 2                 | l               |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423854 | 43.694000 | DBH estimated   |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 40           | 40         | 35.5     | 6          | 3                 | st, l, s        |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.423863 | 43.694003 | Heavy lean, width tree canopy has been adjusted accordingly.                        |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 42           | 42         | 24       | 5          | 2                 | l               |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423848 | 43.694037 | Heavy lean, width tree canopy has been adjusted accordingly.                        |

| Latin Name                | Common Name         | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments   |
|---------------------------|---------------------|--------------|------------|----------|------------|-------------------|-----------------|-----------------|-------------|-----------|--------------|-----------|-----------------|----------|-----------|-----------|--|
| <i>Thuja occidentalis</i> | Eastern White Cedar | 43           | 43         | 27       | 5          | 2                 | s, l            |                 |             | 3         | Y            | Proponent | Remove          | N/A      | 80.423816 | 43.694028 | Heavy lean, width tree canopy has been adjusted accordingly. |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 44           | 44         | 17       | 7          | 5                 |                 |                 |             | 1         | Y            | Proponent | Remove          | 2.4      | 80.423804 | 43.694039 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 45           | 45         | 18.5     | 7          | 2                 | s, l            | db              |             | 3         | Y            | Proponent | Remove          | N/A      | 80.423814 | 43.694046 | Heavy lean, width tree canopy has been adjusted accordingly. |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 46           | 46         | 15       | 6          | 4                 | s               |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423701 | 43.694082 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 47           | 47         | 16.8     | 7          | 5                 |                 |                 |             | 1         | Y            | Proponent | Remove          | 1.8      | 80.423701 | 43.694082 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 48           | 48         | 18.6     | 7          | 5                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423710 | 43.694087 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 49           | 49         | 14.3     | 7          | 2                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423709 | 43.694088 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 50           | 50         | 16       | 8          | 2                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423681 | 43.694102 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 51           | 51         | 14       | 6          | 6                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423708 | 43.694094 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 52           | 52         | 14       | 7          | 6                 |                 |                 |             | 1         | Y            | Proponent | Remove          | N/A      | 80.423684 | 43.694104 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 55           | 55         | 18       | 6          | 2                 | l               | bl              |             | 5         | Y            | Proponent | Remove          | N/A      | 80.423595 | 43.694098 | Heavy lean, width tree canopy has been adjusted accordingly. |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 65           | 65         | 49       | 15         | 6                 | s               | dead branches   |             | 3         | Y            | Proponent | Remove          | N/A      | 80.423553 | 43.694161 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 72           | 72         | 76       | 10         | 5                 | s, st,          | db              |             | 3         | Y            | Proponent | Remove          | N/A      | 80.423414 | 43.694217 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 76           | 76         | 31.3     | 12         | 3                 | l, s            |                 |             | 2         | Y            | Proponent | Remove          | N/A      | 80.423395 | 43.694245 | Heavy lean, width tree canopy has been adjusted accordingly. |

| Latin Name                | Common Name         | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity     | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership          | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments   |
|---------------------------|---------------------|--------------|------------|----------|------------|-------------------|---------------------|-----------------|-------------|-----------|--------------|--------------------|-----------------|----------|-----------|-----------|--|
| <i>Thuja occidentalis</i> | Eastern White Cedar | 92           | 92         | 44.5     | 9          | 4.5               | st, h, peeling bark |                 |             | 3         | Y            | Proponent          | Remove          | N/A      | 80.423357 | 43.694277 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 964          | 964        | 11.6     | 7          | 3                 | w                   |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.427525 | 43.695930 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | A            | N/A        | 10       | 10         | 4                 |                     |                 |             | 1         | Y            | Township           | Remove          | N/A      | 80.423879 | 43.693512 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | D            | N/A        | 11       | 6          | 4                 | p                   |                 |             | 2         | Y            | Township           | Remove          | 2.4      | 80.423816 | 43.693356 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | I            | N/A        | 14       | 10         | 3                 |                     |                 |             | 1         | Y            | Township           | Remove          | N/A      | 80.423810 | 43.693497 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | O            | N/A        | 18       | 7          | 5                 |                     |                 |             | 1         | Y            | Adjacent Landowner | Injure          | 1.8      | 80.423783 | 43.693908 | DBH estimated, unable to see from proponents property        |
| <i>Thuja occidentalis</i> | Eastern White Cedar | U            | N/A        | 22       | 14         | 4.5               |                     |                 |             | 1         | Y            | Township           | Remove          | N/A      | 80.423884 | 43.693513 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | V            | N/A        | 22       | 10         | 4                 |                     |                 |             | 1         | Y            | Township           | Remove          | N/A      | 80.423913 | 43.693480 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | Y            | N/A        | 26       | 12         | 5.5               |                     |                 |             | 1         | Y            | Township           | Remove          | N/A      | 80.424045 | 43.693637 |  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | B1           | N/A        | 27       | 12         | 4                 | st                  |                 |             | 1         | Y            | Adjacent Landowner | Injure          | 2.4      | 80.423820 | 43.693880 | DBH estimated  |
| <i>Thuja occidentalis</i> | Eastern White Cedar | K1           | N/A        | 32.5     | 7          | 6                 | s                   |                 |             | 1         | Y            | Township           | Remove          | N/A      | 80.424124 | 43.693589 |  |
| <i>Tilia americana</i>    | American Basswood   | M1           | N/A        | 35       | 8          | 6                 | st, r, s, w         |                 |             | 3         | Y            | Township           | Remove          | N/A      | 80.423892 | 43.693410 |  |
| <i>Tilia americana</i>    | American Basswood   | U1           | N/A        | 51.5     | 22         | 8                 | st                  |                 |             | 2         | Y            | Township           | Remove          | N/A      | 80.423895 | 43.693404 |  |
| <i>Tilia americana</i>    | American Basswood   | Z1           | N/A        | 69       | 15         | 7                 | st, w               |                 | dl          | 2         | Y            | Township           | Remove          | N/A      | 80.423821 | 43.693360 | Few broken branches  |
| <i>Tilia americana</i>    | American Basswood   | B2           | N/A        | 15       | 10         | 4                 | l, w                |                 |             | 2         | Y            | Township           | Remove          | N/A      | 80.423894 | 43.693406 | Heavy lean, width tree canopy has been adjusted accordingly. |
| <i>Tilia sp.</i>          | Basswood sp.        | 116          | 116        | 25.7     | 10         | 6                 |                     |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.422712 | 43.694704 |  |

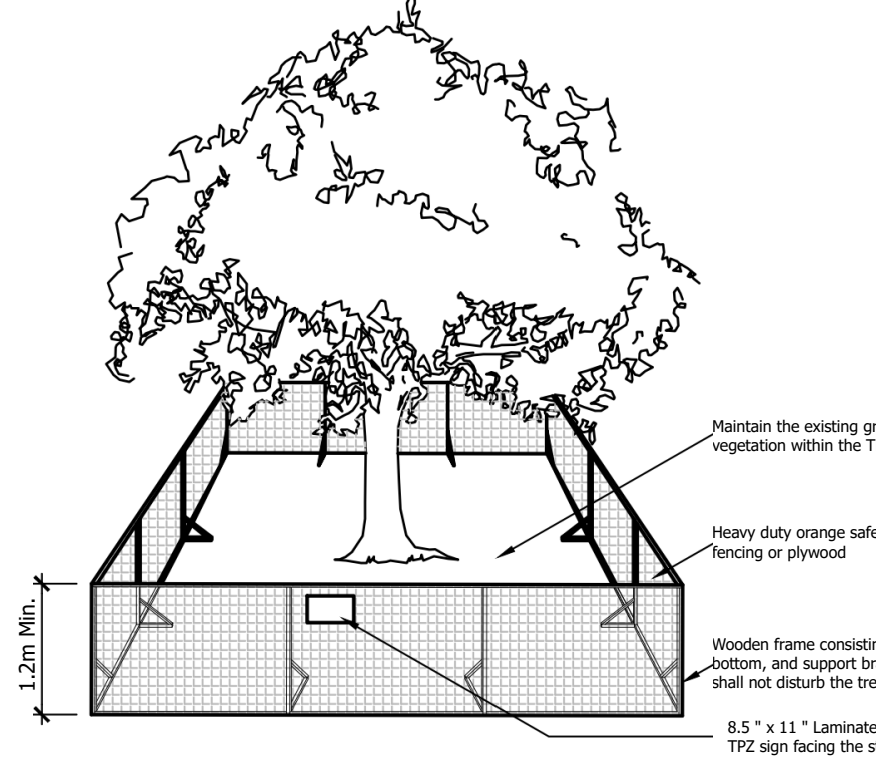
| Latin Name             | Common Name  | Label on TPP | Tree Tag # | DBH (cm) | Height (m) | Canopy Radius (m) | Trunk Integrity | Crown Structure | Crown Vigor | Condition | Native (Y/N) | Ownership          | Proposed Action | MTPZ (m) | X Coord   | Y Coord   | Comments      |
|------------------------|--------------|--------------|------------|----------|------------|-------------------|-----------------|-----------------|-------------|-----------|--------------|--------------------|-----------------|----------|-----------|-----------|---------------|
| <i>Tilia sp.</i>       | Basswood sp. | 117          | 117        | 14.5     | 9          | 5                 |                 |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.422626 | 43.694740 |               |
| <i>Tilia sp.</i>       | Basswood sp. | 118          | 118        | 26       | 9          | 5                 | st              |                 | dl          | 2         | Y            | Proponent          | Remove          | N/A      | 80.422627 | 43.694753 |               |
| <i>Tilia sp.</i>       | Basswood sp. | 222          | 222        | 54.5     | 8          | 5                 | st              |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.422374 | 43.694938 |               |
| <i>Ulmus americana</i> | American Elm | P            | N/A        | 18       | 14         | 3.5               |                 |                 |             | 1         | -            | Adjacent Landowner | Injure          | 1.8      | 80.423818 | 43.693882 | DBH estimated |
| <i>Ulmus americana</i> | American Elm | 407          | 407        | 11.3     | 18         | 6                 |                 |                 | dl          | 2         | Y            | Proponent          | Remove          | 1.8      | 80.426409 | 43.697071 |               |
| <i>Ulmus americana</i> | American Elm | 413          | 413        | 27.2     | 20         | 8                 |                 |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.426420 | 43.696816 |               |
| <i>Ulmus americana</i> | American Elm | 697          | 697        | 29.2     | 24         | 9                 |                 | dl              | v           | 2         | Y            | Proponent          | Remove          | N/A      | 80.426720 | 43.696731 |               |
| <i>Ulmus americana</i> | American Elm | 698          | 698        | 36       | 24         | 8                 |                 | dl              | v           | 2         | Y            | Proponent          | Remove          | N/A      | 80.426629 | 43.696733 |               |
| <i>Ulmus americana</i> | American Elm | 969          | 969        | 24       | 8          | 4                 | ab              |                 |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.427342 | 43.696188 |               |
| <i>Ulmus americana</i> | American Elm | 972          | 972        | 20.5     | 9          | 5                 | w, ab           |                 |             | 2         | Y            | Proponent          | Remove          | N/A      | 80.427544 | 43.696228 |               |
| <i>Ulmus sp.</i>       | Elm sp.      | 119          | 119        | 39.5     | 19         | 4                 |                 |                 |             | 1         | Y            | Proponent          | Remove          | N/A      | 80.422563 | 43.694791 |               |

## APPENDIX 3 | Tree Preservation Plan



**Tree Protection Barrier**

1. Tree Protection Barriers constructed with a solid wood frame are required to define the Tree Protection Zone (TPZ).
2. No construction activity, grade changes, surface treatment or excavation of any kind is permitted within the TPZ.
3. All Tree Protection Barriers shall be in place and approved by the Township prior to construction access.
4. Tree Protection Barriers shall remain in place and in good condition until all construction is complete and approved by the Township.
5. During construction activities the TPZ will be inspected and monitored by and a certified arborist to monitor tree health.
6. All arboriculture work such as pruning of both branches and roots, shall be done by a qualified tree worker certified by the International Society of Arboriculture (ISA) approved by the Township.
7. Sediment control fencing shall be installed as indicated in the Tree Protection Plan and approved by the Township.



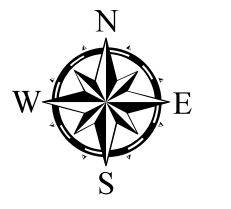
**Legend**

- Subject Property
- Proposed Development
- Existing Lot Lines
- Proposed Lot Lines
- Proposed Streets

- Tree Inventory**
- Injure
  - Remove
  - Retain

**Minimum TPZ distance from the base of the trunk**

|                 |                |
|-----------------|----------------|
| <10 cm DBH      | 1.2 m          |
| 11 - 19 cm DBH  | 1.8 m          |
| 20 - 40 cm DBH  | 2.4 m          |
| 41 - 50 cm DBH  | 3.0 m          |
| 51 - 60 cm DBH  | 3.6 m          |
| 61 - 70 cm DBH  | 4.2 m          |
| 71 - 80 cm DBH  | 4.8 m          |
| 81 - 90 cm DBH  | 5.4 m          |
| 91 - 100 cm DBH | 6.0 m          |
| >100 cm DBH     | 6cm / 1cm dia. |



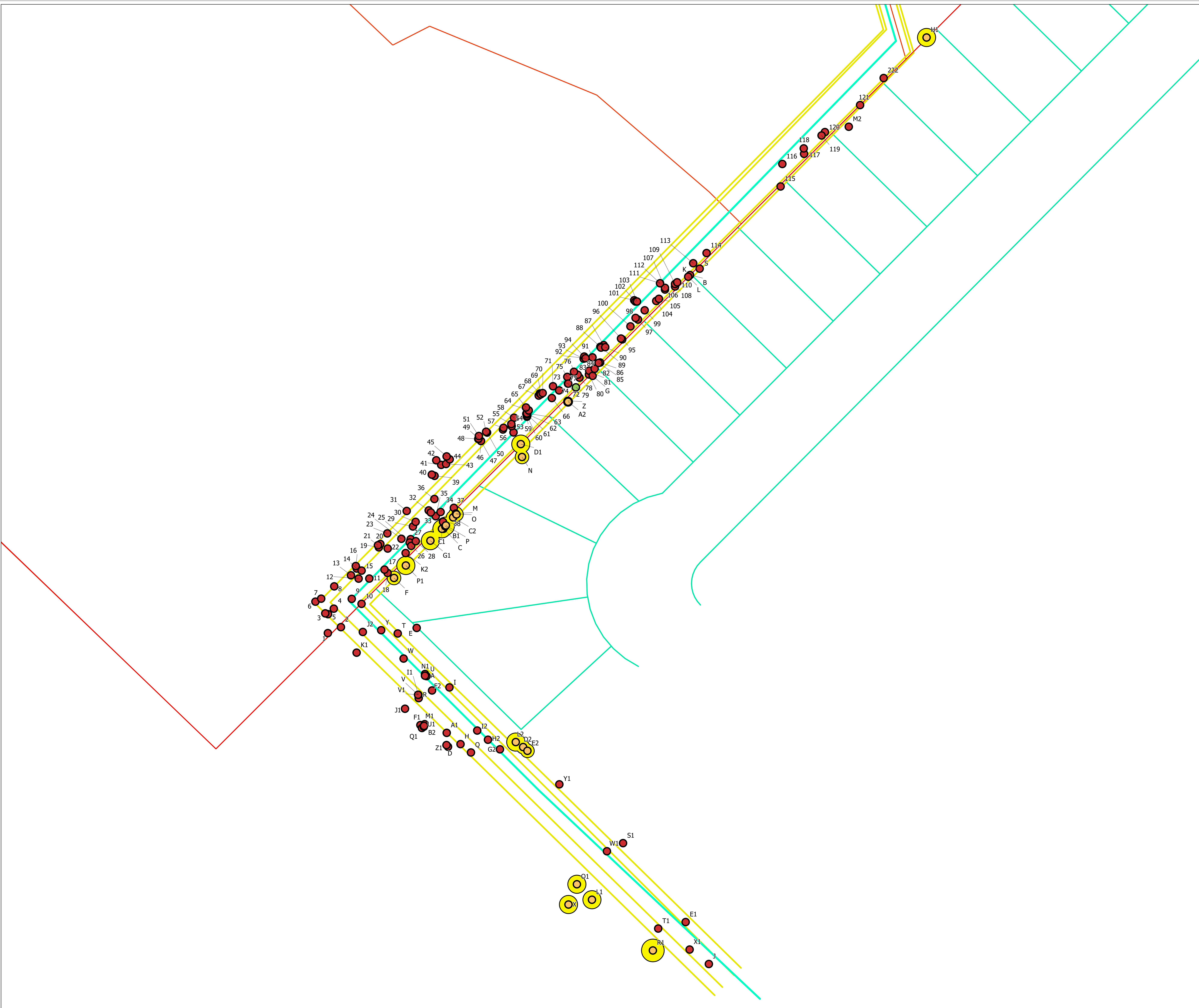
**Tree Protection Plan (A)  
Ainley Subdivision**

|                          |                    |       |
|--------------------------|--------------------|-------|
| Project Number<br>15-799 | Date<br>2022-09-30 | 1:240 |
|--------------------------|--------------------|-------|

Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE. Data Provided by: North South Environmental Inc.

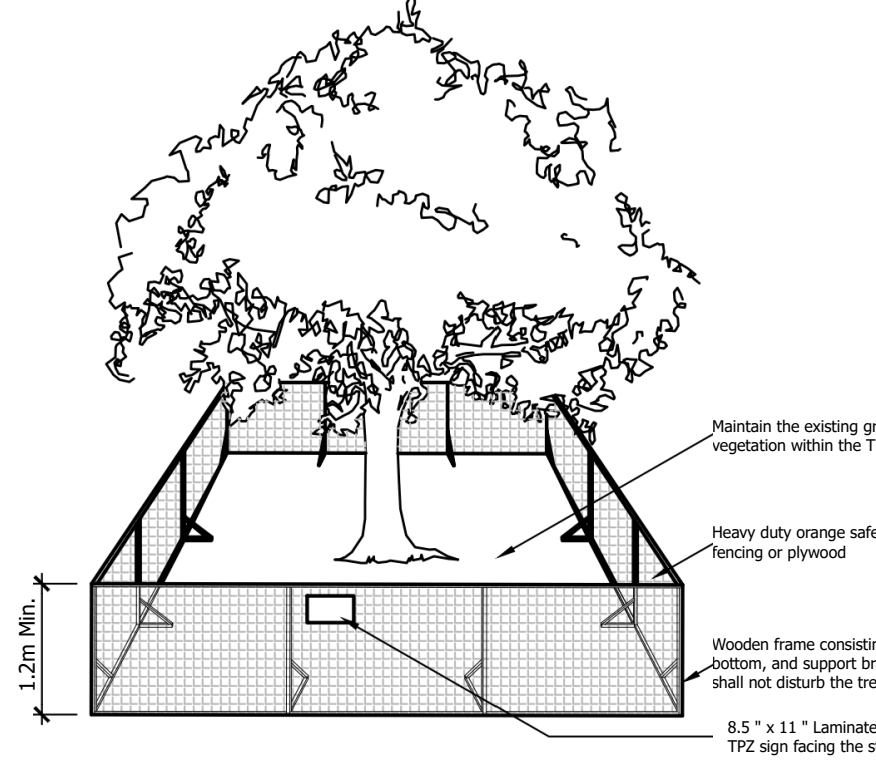
101B King Street West,  
Cambridge, Ontario  
N3H 1B5





**Tree Protection Barrier**

1. Tree Protection Barriers constructed with a solid wood frame are required to define the Tree Protection Zone (TPZ).
2. No construction activity, grade changes, surface treatment or excavation of any kind is permitted within the TPZ.
3. All Tree Protection Barriers shall be in place and approved by the Township prior to construction access.
4. Tree Protection Barriers shall remain in place and in good condition until all construction is complete and approved by the Township.
5. During construction activities the TPZ will be inspected and monitored by and a certified arborist to monitor tree health.
6. All arboriculture work such as pruning of both branches and roots, shall be done by a qualified tree worker certified by the International Society of Arboriculture (ISA) approved by the Township.
7. Sediment control fencing shall be installed as indicated in the Tree Protection Plan and approved by the Township.



**Legend**

Subject Property

Existing Lot Lines

Proposed Lot Lines

Proposed Streets

Easement

Proposed Sanitation Line

**Tree Inventory**

Stature (A2, B1, C, C1, C2, D1, D2, E2, F, G1, H1, L1, L2, M, N, O, O1, P, P1, R1, X)

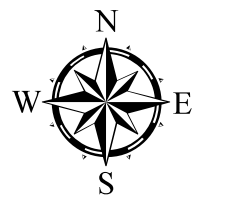
Remove

Retain (79, Z)

Minimum TPZ

Minimum TPZ distance from the base of the trunk

|                 |                |
|-----------------|----------------|
| <10 cm DBH      | 1.2 m          |
| 11 - 19 cm DBH  | 1.8 m          |
| 20 - 40 cm DBH  | 2.4 m          |
| 41 - 50 cm DBH  | 3.0 m          |
| 51 - 60 cm DBH  | 3.6 m          |
| 61 - 70 cm DBH  | 4.2 m          |
| 71 - 80 cm DBH  | 4.8 m          |
| 81 - 90 cm DBH  | 5.4 m          |
| 91 - 100 cm DBH | 6.0 m          |
| >100 cm DBH     | 6cm / 1cm dia. |



**Tree Protection Plan (B)  
Ainley Subdivision**

|                          |                    |       |
|--------------------------|--------------------|-------|
| Project Number<br>15-799 | Date<br>2022-09-30 | 1:300 |
|--------------------------|--------------------|-------|

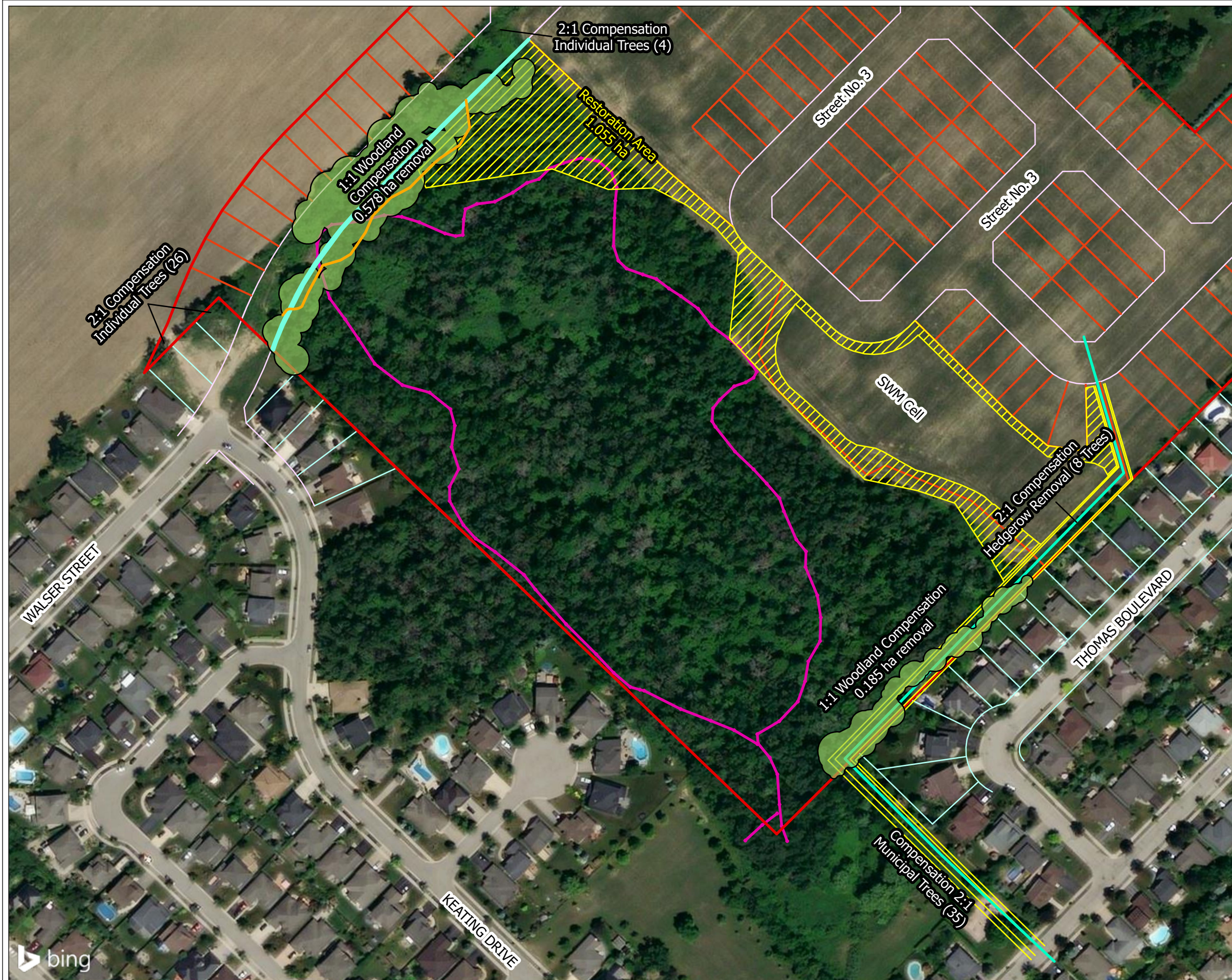
Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE. Data Provided by: North South Environmental Inc.

101B King Street West,  
Cambridge, Ontario  
N3H 1B5



## APPENDIX 4 | Tree Compensation Mapping

**Figure 4 | Ainley Subdivision**  
Tree Removal Compensation Ratios



**Legend**

- Subject Property
- Limit of Disturbance for Road Construction
- Proposed Development**
- Existing Lot Lines
- Proposed Lot Lines
- Proposed Streets
- Proposed Pathway
- Proposed Sanitation Line
- Easement
- Compensation Area**
- Woodland Removal
- Recommended Restoration Areas
- Recommended Screening Vegetation



Project Number  
15-799

Date:  
2022-09-30



Map Produced by North South Environmental (NSE) Inc.  
This map is proprietary and confidential and must not be duplicated or distributed by any means without permission of NSE.  
Data Provided by: North South Environmental Inc.  
Imagery: Bing

## APPENDIX 5 | Agency Correspondence

## Re: Tree Inventory Ainley Farm

Madison Postma <mpostma@nr.si.on.ca>

Mon 2022-07-11 1:35 PM

To: Devin Bettencourt <dbettencourt@nsenvironmental.com>; Mariana Iglesias <MIglesias@centrewellington.ca>; Brett Salmon <BSalmon@centrewellington.ca>; Pauline Catling <pcatling@nsenvironmental.com>

Cc: Sarah Mainguy <smainguy@nsenvironmental.com>; David Stephenson <dstephenson@nr.si.on.ca>; Jack Richard <jrichard@nr.si.on.ca>

Hi Devin,

I apologize for the delay in response, we appreciate your patience.

I have discussed with my fellow colleagues at NRSI the appropriate compensation ratios for the removal of the woodland edge on the Ainley Farm property. You had previously mentioned the Centre of Wellington Public Forest Policy specifies a 2:1 compensation ratio for the removal of municipally owned trees. It is of our opinion that a 2:1 ratio is suitable for individual and hedgerow trees, but is not suitable compensation for woodlands.

We recommend that woodland removals should be compensated for based on area (1:1) and that compensation should achieve the minimum tree density to be considered a woodland, which is "1,000 trees, of any size, per hectare", as defined in the County of Wellington Forest Conservation Bylaw (5115-09). This being said we also recommend increasing this ratio to 1,200 per ha and guaranteeing a 2-year monitoring program to ensure that woodland habitat has been adequately restored and compensated for.

Mariana Iglesias and Mat Alain, the Urban Forestry Project Manager for the Township, were also consulted and agree with our recommendation. They also believe that space is available on the property for compensation at a ratio of 1,200 per ha removed.

As for scope of work, in a previous email you had mentioned that your tree inventory will include the collection of all trees within the proposed Walser Street Extension limit of development along the north edge and sanitary alignment of the development along the south edge. We believe this is appropriate for the site. As for data collection please be sure to collect the following data for each surveyed tree:

1. Tree species
2. Diameter at breast height (DBH)
3. Approximate height
4. Canopy width
5. General health (excellent, good, fair, poor, very poor, dead)
6. Potential for structural failure (improbable, possible, probable, imminent)
7. General comments

If a full bat habitat assessment has not already been completed, please ensure that any potential bat habitat is also noted and addressed for the impacted trees.

Please let me know if you have any further questions.

Thank you,  
Madison

**Madison Postma** B.E.S. M.F.C. R.P.F.  
Registered Professional Forester  
**Natural Resource Solutions Inc.**  
415 Phillip Street, Unit C  
Waterloo, ON N2L 3X2

## **APPENDIX 3 |** Bat Habitat Snag Survey Results

**Table A3-1. Snag Survey Results.**

| Tree Tag # | DBH (cm) | Common Name         | Scientific Name               | Height Class | Decay Class    | Decay class (#) | Snag Attribute |                   |            |       |           | Other snag (within 10 m) | Location   |           | Notes   |
|------------|----------|---------------------|-------------------------------|--------------|----------------|-----------------|----------------|-------------------|------------|-------|-----------|--------------------------|------------|-----------|---|
|            |          |                     |                               |              |                |                 | Cavity         | Cavity Height (m) | Loose Bark | Crack | Knot Hole |                          | x          | y         |   |
| 32         | 22.5     | Eastern White Cedar | <i>Thuja occidentalis</i>     | CoDominant   | Healthy        | 1               | Yes            |                   | Yes        | No    | No        | Yes                      | -80.423357 | 43.694277 |   |
| 53         | 21       | Ash sp.             | <i>Fraxinus sp.</i>           | Intermediate | Dead           | 3               | Yes            | 0-5               | Yes        | No    | No        | Yes                      | -80.423588 | 43.694078 |   |
| 54         | 21.4     | Ash sp.             | <i>Fraxinus sp.</i>           | Dominant     | Not Applicable | 4               | No             |                   | Yes        | No    | No        | Yes                      | -80.423594 | 43.694093 | Dead for extended period of time                            |
| 56         | 32.6     | Ash sp.             | <i>Fraxinus sp.</i>           | Dominant     | Dead           | 3               | Yes            | 5-20              | Yes        | No    | No        | Yes                      | -80.423629 | 43.694109 |   |
| 58         | 14       | Green Ash           | <i>Fraxinus pennsylvanica</i> | Dominant     | Not Applicable | 4               | No             |                   | Yes        | No    | No        | Yes                      | -80.423586 | 43.694113 | Dead for extended period of time                            |
| 60         | 16       | Green Ash           | <i>Fraxinus pennsylvanica</i> | Dominant     | Not Applicable | 4               | No             |                   | Yes        | No    | No        | Yes                      | -80.423550 | 43.694141 | Dead for extended period of time                            |
| 61         | 21       | Green Ash           | <i>Fraxinus pennsylvanica</i> | Dominant     | Not Applicable | 4               | No             |                   | Yes        | No    | No        | Yes                      | -80.423586 | 43.694190 | Dead for extended period of time                            |
| 63         | 16       | Green Ash           | <i>Fraxinus pennsylvanica</i> | Dominant     | Not Applicable | 4               | No             |                   | Yes        | No    | No        | Yes                      | -80.423550 | 43.694147 | Dead for extended period of time                            |
| 64         | 25       | Ash sp.             | <i>Fraxinus sp.</i>           | Dominant     | Not Applicable | 4               | No             |                   | Yes        | No    | No        | No                       | -80.423544 | 43.694154 | Dead for extended period of time                            |
| 65         | 49       | Eastern White Cedar | <i>Thuja occidentalis</i>     | CoDominant   | Declining      | 2               | Yes            |                   | No         | No    | No        | Yes                      | -80.423553 | 43.694161 | Low cavity may extend up all the way, small holes higher up |
| 66         | 27       | Ash sp.             | <i>Fraxinus sp.</i>           | Dominant     | Not Applicable | 4               | No             |                   | Yes        | Yes   | No        | Yes                      | -80.423468 | 43.694183 | Dead for extended period of time                            |
| 67         | 22.2     | Ash sp.             | <i>Fraxinus sp.</i>           | Dominant     | Not Applicable | 4               | No             |                   | Yes        | No    | No        | No                       | -80.423511 | 43.694189 | Dead for extended period of time                            |
| 68         | 30       | Ash sp.             | <i>Fraxinus sp.</i>           | Dominant     | Not Applicable | 4               | No             |                   | Yes        | No    | No        | No                       | -80.423508 | 43.694194 | Dead for extended period of time                            |
| 69         | 14.9     | Ash sp.             | <i>Fraxinus sp.</i>           | Dominant     | Not Applicable | 4               | No             |                   | Yes        | No    | No        | Yes                      | -80.423504 | 43.694191 | Dead for extended period of time                            |
| 70         | 19.7     | Ash sp.             | <i>Fraxinus sp.</i>           | Dominant     | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423498 | 43.694195 |   |
| 71         | 12       | Trembling Aspen     | <i>Populus tremuloides</i>    | Intermediate | Healthy        | 1               | No             |                   | No         | Yes   | No        | Yes                      | -80.423464 | 43.694211 |   |
| 72         | 25.5     | Eastern White Cedar | <i>Thuja occidentalis</i>     | CoDominant   | Healthy        | 1               | Yes            |                   | No         | Yes   | No        | Yes                      | -80.423414 | 43.694217 | leaf cluster, big crack, cavity at root                     |
| 73         | 31.2     | Ash sp.             | <i>Fraxinus sp.</i>           | Dominant     | Dead           | 3               | No             |                   | Yes        | Yes   | No        | Yes                      | -80.423415 | 43.694217 |   |
| 76         | 31.3     | Eastern White Cedar | <i>Thuja occidentalis</i>     | CoDominant   | Healthy        | 1               | Yes            |                   | No         | Yes   | No        | Yes                      | -80.423396 | 43.694245 |   |
| 78         | 22.3     | Ash sp.             | <i>Fraxinus sp.</i>           | CoDominant   | Dead           | 3               | No             |                   | No         | Yes   | No        | Yes                      | -80.423377 | 43.694231 |   |
| 79         | 14       | Green Ash           | <i>Fraxinus pennsylvanica</i> | Intermediate | Not Applicable | 4               | No             |                   | Yes        | No    | No        | Yes                      | -80.423389 | 43.694208 | Dead for extended period of time                            |
| 80         | 26.5     | Ash sp.             | <i>Fraxinus sp.</i>           | CoDominant   | Not Applicable | 4               | No             |                   | Yes        | No    | No        | Yes                      | -80.423336 | 43.694233 | dead  |
| 83         | 36.7     | Ash sp.             | <i>Fraxinus sp.</i>           | Dominant     | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423335 | 43.694242 |   |
| 84         | 26       | Green Ash           | <i>Fraxinus pennsylvanica</i> | Intermediate | Declining      | 2               | No             |                   | No         | Yes   | No        | Yes                      | -80.423325 | 43.694249 |   |
| 85         | 13       | Ash sp.             | <i>Fraxinus sp.</i>           | Intermediate | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423307 | 43.694257 |   |
| 87         | 22.2     | Ash sp.             | <i>Fraxinus sp.</i>           | Dominant     | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423298 | 43.694309 |   |
| 89         | 26.1     | Ash sp.             | <i>Fraxinus sp.</i>           | CoDominant   | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423306 | 43.694302 |   |
| 90         | 14.2     | Ash sp.             | <i>Fraxinus sp.</i>           | CoDominant   | Dead           | 3               | No             |                   | Yes        | Yes   | No        | Yes                      | -80.423292 | 43.694303 |   |
| 91         | 24.5     | Ash sp.             | <i>Fraxinus sp.</i>           | Intermediate | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423334 | 43.694279 |   |

| Tree Tag # | DBH (cm) | Common Name     | Scientific Name               | Height Class | Decay Class    | Decay class (#) | Snag Attribute |                   |            |       |           | Other snag (within 10 m) | Location   |           | Notes  |
|------------|----------|-----------------|-------------------------------|--------------|----------------|-----------------|----------------|-------------------|------------|-------|-----------|--------------------------|------------|-----------|--|
|            |          |                 |                               |              |                |                 | Cavity         | Cavity Height (m) | Loose Bark | Crack | Knot Hole |                          | x          | y         |  |
| 93         | 22.6     | Ash sp.         | <i>Fraxinus sp.</i>           | Dominant     | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423363 | 43.694276 |  |
| 94         | 21.5     | Ash sp.         | <i>Fraxinus sp.</i>           | Dominant     | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423361 | 43.694281 |  |
| 96         | 10.5     | Ash sp.         | <i>Fraxinus sp.</i>           | Intermediate | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423228 | 43.694316 |  |
| 97         | 12.7     | Ash sp.         | <i>Fraxinus sp.</i>           | Suppressed   | Declining      | 2               | No             |                   | No         | Yes   | No        | Yes                      | -80.423184 | 43.694368 |  |
| 101        | 13       | Trembling Aspen | <i>Populus tremuloides</i>    | CoDominant   | Healthy        | 1               | No             |                   | No         | Yes   | No        | Yes                      | -80.423196 | 43.694414 |  |
| 102        | 13.5     | Trembling Aspen | <i>Populus tremuloides</i>    | CoDominant   | Healthy        | 1               | No             |                   | No         | Yes   | No        | Yes                      | -80.423192 | 43.694411 |  |
| 106        | 25       | Ash sp.         | <i>Fraxinus sp.</i>           | Intermediate | Declining      | 2               | No             |                   | No         | Yes   | No        | Yes                      | -80.423095 | 43.694439 |  |
| 107        | 17       | Trembling Aspen | <i>Populus tremuloides</i>    | CoDominant   | Healthy        | 1               | No             |                   | No         | Yes   | No        | Yes                      | -80.423095 | 43.694443 |  |
| 109        | 20.8     | Trembling Aspen | <i>Populus tremuloides</i>    | Intermediate | Healthy        | 1               | No             |                   | No         | Yes   | No        | Yes                      | -80.423062 | 43.694446 |  |
| 112        | 16       | Ash sp.         | <i>Fraxinus sp.</i>           | CoDominant   | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423111 | 43.694454 |  |
| 113        | 16.3     | Ash sp.         | <i>Fraxinus sp.</i>           | Intermediate | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423002 | 43.694501 |  |
| 119        | 39.5     | American Elm    | <i>Ulmus americana</i>        | Dominant     | Healthy        | 1               | No             |                   | Yes        | No    | No        | No                       | -80.422563 | 43.694791 |  |
| 194        | 13.5     | Ash sp.         | <i>Fraxinus sp.</i>           | Intermediate | Dead           | 3               | No             |                   | Yes        | No    | No        | Yes                      | -80.423124 | 43.694413 |  |
| 408        | 43.1     | White Ash       | <i>Fraxinus americana</i>     |              | Dead           | 3               | Yes            |                   | No         | Yes   | No        |                          | -80.426265 | 43.696914 |  |
| 409        | 32.7     | White Ash       | <i>Fraxinus americana</i>     |              | Dead           | 3               | No             |                   | No         | Yes   | No        |                          | -80.426257 | 43.696892 |  |
| 412        | 41.7     | White Ash       | <i>Fraxinus americana</i>     |              |                |                 | No             |                   | No         | Yes   | No        |                          | -80.426444 | 43.696810 |  |
| 437        | 20       | White Ash       | <i>Fraxinus americana</i>     |              |                |                 | No             |                   | Yes        | No    | No        |                          | -80.427469 | 43.695983 |  |
| 474        | 90.5     | Yellow Birch    | <i>Betula alleghaniensis</i>  |              |                |                 | No             |                   | Yes        | Yes   | No        |                          | -80.428495 | 43.695564 |  |
| 672        | 75       | Red Oak         | <i>Quercus rubra</i>          |              |                |                 | Yes            |                   | Yes        | No    | No        |                          | -80.426966 | 43.696365 |  |
| 690        | 85       | Manitoba Maple  | <i>Acer negundo</i>           |              |                |                 | No             |                   | Yes        | Yes   | No        |                          | -80.427051 | 43.696611 | Heavy lean, width tree canopy has been adjusted accordingly      |
| 692        | 31.5     | Black Cherry    | <i>Prunus serotina</i>        |              |                |                 | No             |                   | Yes        | Yes   | No        |                          | -80.426906 | 43.696650 |  |
| 693        | 100      | Red Oak         | <i>Quercus rubra</i>          |              |                |                 | Yes            |                   | Yes        | No    | No        |                          | -80.426875 | 43.696717 |  |
| 694        | 40       | Domestic Apple  | <i>Malus pumila</i>           |              | Dead           | 3               | Yes            |                   | Yes        | No    | No        |                          | -80.426876 | 43.696745 |  |
| 990        | 160      | Manitoba Maple  | <i>Acer negundo</i>           |              |                |                 | Yes            |                   | No         | Yes   | No        |                          | -80.427212 | 43.696286 |  |
| N/A        | 16       | Ash sp.         | <i>Fraxinus sp.</i>           | CoDominant   | Not Applicable | 4               | No             | 1-5               | No         | Yes   | No        | Yes                      | -80.423655 | 43.694105 |  |
| N/A        | 13       | Ash sp.         | <i>Fraxinus sp.</i>           | Dominant     | Dead           | 3               | No             |                   | No         | Yes   | No        | No                       | -80.423661 | 43.694131 | No tag due to being outside of sewage line boundary              |
| N/A        | 13,      | Green Ash       | <i>Fraxinus pennsylvanica</i> | Intermediate | Not Applicable | 4               | No             |                   | Yes        | Yes   | No        | No                       | -80.423416 | 43.694176 | Dead for extended period of time                                 |
| N/A        | 20       | Ash sp.         | <i>Fraxinus sp.</i>           | CoDominant   | Dead           | 3               | No             |                   | Yes        | Yes   | No        | No                       | -80.423867 | 43.693490 | Located on city property, not tagged                             |
| N/A        | 60       | Black Cherry    | <i>Prunus serotina</i>        | Dominant     | Declining      | 2               | Yes            |                   | Yes        | Yes   | No        | No                       | -80.422478 | 43.694844 | Located on border of subject property, not tagged, DBH estimated |

## **APPENDIX 4 |** Correspondence with MECP Regarding Species at Risk Bats

Hello Sarah,

RE: Ainley Subdivision, Gerrie Road & Thomas Boulevard, Elora, Township of Centre Wellington, Wellington County and the *Endangered Species Act, 2007*

The Ministry of the Environment, Conservation and Parks (MECP) has reviewed the draft EIS Addendum to assess the potential impacts of the residential development project on Little Brown Myotis, which is an endangered species that receives both species and general habitat protection under the *Endangered Species Act, 2007* (ESA 2007).

Based on the ministry's review of the project documentation and information that has been provided, the conclusions that neither section 9 (species protection) nor section 10 (habitat protection) of the ESA 2007 will be contravened for Little Brown Myotis – as long as the proposed mitigation measures are implemented (including avoiding tree removal between April 1 and September 30) – appear reasonable and valid. Therefore, authorization under the ESA 2007 is not required for this project. However, please note that for future similar projects, additional details about species at risk bats should be included in reports for MECP review, including snag density calculations.

Should any of the project activities change from what has been presented to MECP, please notify the ministry immediately ([SAROntario@ontario.ca](mailto:SAROntario@ontario.ca)) to obtain guidance on whether the changes require authorization under the ESA 2007 in order to remain in compliance with the Act. Failure to carry out the project as described to MECP could potentially result in contravention of the ESA 2007. The proponent remains responsible for ensuring compliance with the Act and may be subject to prosecution or other enforcement action if activities result in any harm to species at risk and/or habitat.

The ministry's position is based on the information that has been provided on behalf of the proponent. Should information not have been made available and considered in our review, or new information comes to light that changes the conclusions made, or if on-site conditions and circumstances change so as to alter the basis for the conclusions, or if any of the species at risk mitigation measures cannot be completed, please contact the ministry ([SAROntario@ontario.ca](mailto:SAROntario@ontario.ca)) as soon as possible to discuss next steps.

MECP notes that while it does not appear that an authorization under the ESA 2007 will be required, the proposed activities may be subject to other approvals, such as those issued by local municipalities and conservation authorities. Please be advised that it is the responsibility of the proponent to be aware of and comply with all other relevant provincial or federal requirements, municipal by-laws or required approvals from other agencies. It is also the responsibility of the proponent to ensure that all required approvals are obtained and relevant policies adhered to.

Regards,

**Catherine Stewart**  
Management Biologist  
Permissions Section, Species at Risk Branch  
**Ainley Farm EIS Addendum** • April 5, 2023

Ministry of the Environment, Conservation and Parks

**From:** Sarah Mainguy <[smainguy@nsenvironmental.com](mailto:smainguy@nsenvironmental.com)>

**Sent:** November 23, 2022 10:34 AM

**To:** Species at Risk (MECP) <[SAROntario@ontario.ca](mailto:SAROntario@ontario.ca)>

**Subject:** RE: EIS Centre Wellington - Little Brown Myotis Mitigation

**CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**

Hello Catherine,

We communicated with you in June of 2022 regarding the requirement for bat surveys for an area of tree removal in Elora, Ontario. We have now completed a draft report documenting the area of tree removal, describing bat exit surveys completed, and providing the results of the surveys. Exit surveys showed Little Brown Myotis (*Myotis lucifugus*) likely was present in the woodland, but the exit surveys did not indicate that it specifically formed roosts in the edge trees that will be removed for the development.

We are asking for advice regarding next steps for consultation regarding this project.

Yours Truly,

Sarah Mainguy

  
Sustainable solutions for natural systems

**Sarah Mainguy, B.Sc., M.Sc.**  
**Senior Ecologist**

📞 905-854-1112 ext. 204

**From:** Species at Risk (MECP) <[SAROntario@ontario.ca](mailto:SAROntario@ontario.ca)>

**Sent:** June 20, 2022 2:14 PM

**To:** Grace Pitman <[gpitman@nsenvironmental.com](mailto:gpitman@nsenvironmental.com)>

**Subject:** RE: EIS Centre Wellington - Little Brown Myotis Mitigation

This message's attachments contains at least one web link. This is often used for phishing attempts. Please only interact with this attachment if you know its source and that the content is safe. If in doubt, confirm the legitimacy with the sender by phone.

Hello Grace,

RE: Ainley Subdivision, Gerrie Road & Thomas Boulevard, Elora, Township of Centre Wellington, Wellington County and the *Endangered Species Act, 2007*

The Ministry of the Environment, Conservation and Parks (MECP) understands that North-South Environmental is conducting an EIS for the Ainley residential subdivision, as identified in the information provided.

An initial species at risk (SAR) information screening has been completed under the *Endangered Species Act, 2007* (ESA 2007) for the above-noted project location with respect to endangered and threatened species in Ontario. There are known occurrences of SAR bats in the general area with potential to also occur at the project location.

Please note that this is an initial screening for endangered and threatened SAR and the absence of an element occurrence does not indicate the absence of species. The province has not been surveyed comprehensively for the presence or absence of SAR and Ontario's data relies on observers to report sightings of SAR. Field assessments by a qualified professional may be necessary if there is a high likelihood for SAR species and/or habitat to occur within the project footprint and potentially be impacted. Attached is MECP's current SAR bat survey guidance, which should be followed during SAR bat fieldwork. The results of the SAR fieldwork should be used to inform appropriate mitigation measures or next steps under the ESA 2007.

The ministry's position is based on the information that has been provided by you on behalf of the proponent. Should information not have been made available and considered in our review, or new information comes to light, or if on-site conditions and circumstances change, please contact Species at Risk Branch as soon as possible ([SAROntario@ontario.ca](mailto:SAROntario@ontario.ca)) to discuss next steps.

Regards,

**Catherine Stewart**

Management Biologist  
Permissions Section, Species at Risk Branch  
Ministry of the Environment, Conservation and Parks

**From:** Grace Pitman <[gpitman@nsenvironmental.com](mailto:gpitman@nsenvironmental.com)>  
**Sent:** June 6, 2022 10:36 AM  
**To:** Species at Risk (MECP) <[SAROntario@ontario.ca](mailto:SAROntario@ontario.ca)>  
**Subject:** RE: EIS Centre Wellington - Little Brown Myotis Mitigation

**CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**

Hi Catherine,

Thank you for your reply. Please see the attached map which shows the property boundary and the proposed development.

Thanks,

Grace



www.nsenvironmental.com

**Grace Pitman**  
Ecologist

P: 905-854-1112 • Ext. 212

**From:** Species at Risk (MECP) <[SAROntario@ontario.ca](mailto:SAROntario@ontario.ca)>  
**Sent:** Monday, June 6, 2022 10:00 AM  
**To:** Grace Pitman <[gpitman@nsenvironmental.com](mailto:gpitman@nsenvironmental.com)>  
**Subject:** RE: EIS Centre Wellington - Little Brown Myotis Mitigation

Hello Grace,

Before MECP can respond, please provide a map of the property location. If available, can you also provide a figure showing the proposed development?

Thank you,

**Catherine Stewart**

Management Biologist  
Permissions Section, Species at Risk Branch  
Ministry of the Environment, Conservation and Parks

**From:** Grace Pitman <[gpitman@nsenvironmental.com](mailto:gpitman@nsenvironmental.com)>  
**Sent:** May 25, 2022 4:32 PM  
**To:** Species at Risk (MECP) <[SAROntario@ontario.ca](mailto:SAROntario@ontario.ca)>  
**Subject:** EIS Centre Wellington - Little Brown Myotis Mitigation

**CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**

Hello,

North-South Environmental has been retained to complete an Environmental Impact Study for the a proposed subdivision development located at Part of Lots 17 and 18, Concession 12, Township of Centre Wellington, County of Wellington. The development plans include removing trees on the edge of the woodland to accommodate for an access road and sanitation line. The subject property is located within 2 km of a documented colony of Little Brown Myotis (*Myotis lucifugus*), a Species at Risk.

A roost tree survey was completed to document the number of potential SAR bat habitat trees. Of the trees to be impacted by the proposed development, 36 trees were recorded with potential bat habitat (snag attributes).

Our proposed survey approach is to perform bat exit surveys in the area of proposed tree removal to assess the presence of roosting SAR bat species, following:

- Sample the best 6 trees that provide habitat, for two nights with 3 observers/night.
- Exit surveys will be conducted during the month of June.
- Observers will choose a viewing station with a clear aspect of cavity opening or crevice.
- Cavity opening or crevice will be monitored from 30 minutes before dusk until 60 minutes after dusk for evidence of bats exiting.
- A bat detector will be used in conjunction with visual surveys to determine species.
- If SAR bat species are detected, the entire ELC stand is considered bat habitat.

Mitigation measures to be taken include making sure the trees are removed outside the bat habitat season (April 1<sup>st</sup> to October 31<sup>st</sup>).

Please let us know whether the proposed survey methods and mitigation is satisfactory or if additional measures are required.

Sincerely,  
Grace



101B King Street West  
Cambridge ON • N3H 1B5  
www.nsenvironmental.com

**Grace Pitman**  
Ecologist

gpitman@nsenvironmental.com  
P: 905-854-1112 • Ext. 212

## **APPENDIX 5** | Technical Memo from GM BluePlan Re. Impacts to Wetland



Date: 2/15/2023 File: 411009  
 To: Sarah Mainguy, North-South Environmental  
 From: Sarah Primmer  
 Project: Ainley Farm Subdivision  
 Subject: Impact to Wetland

**TECHNICAL MEMO**

This Technical Memo has been prepared to identify the impacts of the proposed development on the existing wetland in terms of the stormwater discharge from the site following development. This memo has been prepared to support the Environmental Impact Study being prepared by North-South Environmental.

**Impact to Depth and Draindown of Wetland**

Based on a review of the topographic survey information completed by Northway Photomap Inc., completed on June 2, 2005, the wetland areas do not have significant ponding areas, but rather generally flow from northeast to southwest towards the drainage channel. As such, the additional volumes of stormwater that discharge to the wetland under post-development conditions will not significantly impact the depth of the ponding in the wetland. The table below summarizes the pre and post-development ponding elevations and draindown times in the wetland for the various design storm events:

| Storm Event    | Ponding Elevation (m)* |          | Drawdown Time (hr)** |          |
|----------------|------------------------|----------|----------------------|----------|
|                | Existing               | Proposed | Existing             | Proposed |
| 2-Year         | 409.65                 | 409.65   | 5.5                  | 6.8      |
| 5-Year         | 409.69                 | 409.67   | 5.6                  | 8.0      |
| 10-Year        | 409.73                 | 409.70   | 5.6                  | 8.1      |
| 25-Year        | 409.77                 | 409.72   | 5.5                  | 8.5      |
| 50-Year        | 409.79                 | 409.76   | 5.4                  | 8.8      |
| 100-Year       | 409.82                 | 409.79   | 5.4                  | 8.8      |
| Regional Storm | 409.83                 | 409.82   | 52.0                 | 55.0     |

\* The ponding elevation is within SWM1-1 which is the lower wetland area within the ecologically protected lands

\*\*Drawdown time obtained from the hydrologic modelling software MIDUSS

As can be seen, the depth of flow in the wetland actually decreases under post-development conditions. This is because the proposed stormwater pond controls the peak-development flows to less than the pre-development flow rates. The lower peak flow in post-development conditions means the flows in the wetland are slightly shallower or equal to the existing conditions. The draindown times have increased by a few hours because the stormwater volume has been held back in the stormwater pond under post-development conditions and releases at a slower rate.

**Water Balance Impact**

Another aspect of the post-development stormwater impact is the effect on the water balance. The overall effect of the proposed development results in increased runoff volume from the site and decreased recharge volume. The impact has been mitigated through the inclusion of infiltration galleries within the banks of the stormwater pond, as well as within the park block. These galleries combine to provide 6,502m<sup>3</sup> of infiltration on an annual basis, and assist with reducing peak flows and volumes to the wetland during storm events. A comparison of the runoff volumes to the wetland during the various storm events is shown in the table below:



| Storm Event | Pre-Development Runoff Volume to Wetland (m <sup>3</sup> ) | Post-Development Runoff Volume to Wetland without Infiltration (m <sup>3</sup> ) | Post-Development Runoff Volume to Wetland with Infiltration (m <sup>3</sup> ) | Infiltration Volume Provided (m <sup>3</sup> ) | Difference between Post-Development and Pre-Development (m <sup>3</sup> ) | Difference between Post-Development and Pre-Development (%) |
|-------------|--|--|---|--|---|---|
| 2-year      | 768.4  | 1,718.2  | 1,454.3   | 263.90   | 685.90  | 89%   |
| 5-year      | 1,925.6  | 3,134.8  | 2,662.1   | 472.70   | 736.50  | 38%   |
| 10-year     | 2,911.0  | 4,255.8  | 3,625.2   | 630.60   | 714.20  | 25%   |
| 25-year     | 4,274.9  | 5,752.7  | 4,920.7   | 832.00   | 645.80  | 15%   |
| 50-year     | 5,435.7  | 7,002.0  | 6,000.2   | 1,001.80                                       | 564.50  | 10%   |
| 100-year    | 6,665.1  | 8,309.9  | 7,146.60  | 1,163.30                                       | 481.50  | 7%  |
| Regional    | 30,583.9   | 33,410   | 29,575.5  | 3,834.50                                       | -1,008.40   | -3%   |

As can be seen, there is an increase in runoff volume to the wetland under post-development conditions during the design storm events, however a significant amount of infiltration has reduced the impact. It should be noted that the additional volume that discharges to the wetland is routed through the wetland, as discussed above, rather than ponding in the wetland. As such, the additional volume does not result in increased inundation of the wetland.

On an annual basis, the total estimated recharge from the subdivision only decreases by 5.5%, as discussed in the Stormwater Management Report.

**Impact to Water Quality**

The quality impact of stormwater runoff being released to the wetland/woodland has been mitigated through the use of oil/grit separators upstream of the pond, to provide 80% TSS removal. In addition, the dry pond will provide additional polishing of stormwater flows prior to discharge.

We trust that this is the information you require at this time. All of which is respectfully submitted.

GM BLUEPLAN ENGINEERING LIMITED

Per:

Sarah Primmer, P.Eng.