

## **TREE PRESERVATION, PLANTING and MANAGEMENT REPORT**

Address of Subject Property: Huycks Point Road  
Parts of Lots 30 and 29, Concession 1  
Township of Hillier  
Municipality of Prince Edward County

Applicant's Name: Jay Christopher

Application Number: #

Report By: Gina Brouwer, ISA Certified Arborist ON-0937A,  
Tree Risk Assessment Qualification, Butternut Health Assessor - BHA # 659

Date of Inventory: June 19 & 20, 2021

Report Date: June 23, 2021

### **Limitations:**

The assessment presented in this report has been made using accepted standard arboriculture techniques as outlined in the Council of Tree & Landscape Appraisers Guide for Plant Appraisal, 10<sup>th</sup> Edition, Revised (2020) and International Society of Arboriculture Best Management Practices – Tree Inventories, 2<sup>nd</sup> Edition (2013). These techniques include limited visual examination of above-ground parts of each tree. Except where specifically noted, the trees observed were not climbed, probed, cored, or dissected, and excavation for detailed root crown inspection was not performed. Since some symptoms may only be present seasonally, the extent of observations that can be made may be limited by the time of year in which the inspection took place.

Trees are living organisms, and their health and vigour continually change over time due to seasonal variations, changes in site conditions, and other factors. For this reason, the assessment presented in this report is valid at the time of inspection, and no guarantee is made about the continued health of trees. It is recommended that the trees be re-assessed periodically. While every standing tree has the potential for failure and therefore poses some risk, a tree assessment is a good indication of present health and potential problems that could arise in the future.

### **1. Introduction:**

Trophic Design was retained by the applicant to undertake tree and vegetation inventory, assessment, preservation, planting and management plan and report for the subject property. The inventory, plan and report are coordinated with the proposed **Draft Plan of Subdivision** prepared by **Jewell Engineering**. This report outlines the site context, proposed development, methodology, observations and recommendations. Refer to the **Tree Preservation Plan – TP1** and associated site planning documents.

An Environmental Impact Study (EIS) has been carried out by GHD, report dated May 25, 2021. The EIS provides Ecological Land Classification (ELC) of all vegetation communities on site

including habitat description, lists of dominant species, and list of plant species by community. The EIS states that no species classified as federally and/or provincially rare were found in the study area and none of the ELC ecosites are considered provincially rare. This tree preservation, planting and management report supports the EIS by providing additional information on distribution and quantity of species, size, and general condition. This report primarily focuses on the vegetation associated with property boundaries, field and open space edge hedgerows, shoreline, and wetland boundary. A general inventory of the wetland and internal roadway edge through the wetland is provided but does not include an exhaustive inventory of trees in this area. It is understood that this area is to be protected in accordance with the 30m wetland setback and 15m drip line setback outlined on Figure 1 in the EIS report – Natural Features, Vegetation Communities, Surveys & Constraints Plan.

## 2. Site Context:

The subject property is bound by County Road 20/Huycks Point Road to the south, agricultural/residential lands to the east and west and the bay shoreline to the north. The property is divided north of the centreline by an Environmentally Protected Area, Provincially Significant Huycks Bay wetland and marsh area. The remainder of the property is primarily tilled agricultural field separated into three fields to the north and three fields to the south. The fields are all bordered by dense hedgerows with connection access breaks between. There is an open field area in the middle of the west edge at the terminus of Huycks Bay Road.

## 3. Proposed Development

Based on the Site Plan prepared by Jewell Engineering, the property owner intends to develop the property into a multi-estate lot subdivision with 9 lots and two (2) additional areas on the southeast and southwest corners being severed.

## 4. Methodology:

A limited visual inventory and assessment was carried out in the study area on June 19 & 20, 2021 in good weather conditions. The inventory includes all trees (over 10cm diameter) and observations of shrub species, size and distribution. Trees were identified, measured, and assessed for condition. Tree size is expressed in trunk diameter at 1.37m (4 ½') 'breast height' above grade (DBH) or overall height, where applicable. A visually estimated trunk diameter is provided for trees that were not accessible due to site conditions. Some groups of colonies of trees or shrubs are expressed as general quantities and estimated size ranges.

General tree condition is provided for individual or groups of trees. Condition is described as a subjective rating of Excellent, Good, Fair or Poor based on the following criteria:

Excellent	no apparent health problems; good structural form
Good	minor problems with health and/or structural form
Fair	more serious problems with health and/or structural form
Poor	major problems with health and structural form

Groups of trees and vegetation areas are shown on the **Tree Preservation Plan – TP1**.

Because of the scale of the site, density of vegetation, and available base information, the exact locations of individual trees are not provided on TP1. Tree locations in proximity to proposed development site works will be confirmed during detailed design.

## 5. Observations and Analysis:

The inventory includes 248 species occurrences listed. Some are listed as individual trees and some are groups in areas that have similar characteristics. A summary of species found on site is provided in **Appendix A** along with description of occurrence and species characteristics. A detailed tree inventory is provided in section **Appendix B** and tree group locations are identified on the site plan overlaid on available aerial imagery in the **Tree Preservation Plan TP1**. The inventory is divided into groups identified on TP1 and are described with individual tree species, sizes, general condition and locations. Potential impacts are noted at the beginning of each group. Specific impacts shall be evaluated during detailed design considering the tree inventory information provided in this report. The Ecological land classifications are generally identified on the plan and included in the group descriptions.

## 6. Recommendations:

The inventory and assessment presented in this report will be used to inform the detailed design process for tree and vegetation preservation as well as replacement and compensation planting. Individual trees will be evaluated during detailed design to establish minimum tree protection setbacks and fencing requirements, tolerance of trees to construction impacts based on species, size and condition, and alternative construction methods to reduce impacts. Tree removals, where required, will be documented and analyzed for compensation planting. A detailed planting plan will be prepared during detailed design for replacement, enhancement and buffer planting. Protection, removals and compensation will be coordinated with the Owner, Owner's Consultants, County and Conservation Authority, as required.

### 6.1 Tree Preservation

Trees and vegetation beyond the limits of construction will be identified for preservation and are to have tree protection fencing measures beyond the minimum Tree Protection Zone (TPZ). Trees to be preserved will be determined to have a safe and useful life expectancy that justifies their retention and are likely to survive the construction process and changes in the growth environment.

Tree Protection Zones (TPZ) are based on the likely distribution pattern of the root systems of trees and other vegetation identified for preservation. Based on the International Society of Arboriculture (ISA) Best Management Practices: Managing Trees During Construction (companion publication to ANSI Standard A300 part 5) generally 6cm of protection area is suggested for every 1cm of trunk diameter (DBH). The TPZ distances will be shown on the removals, grading and servicing plans based upon the distance of protection measured from the edge of the tree trunk and are minimum recommended protection distances. Pruning of branches or roots on trees to be preserved may be required to reduce impacts and conflicts during construction and shall be carried out by an ISA Certified arborist in accordance with best management practices. A Tree Protection Fencing Detail is provided in **Appendix C** as a typical example.

### 6.2 Tree Protection Notes for Drawings:

Tree protection barriers shall be installed to the satisfaction of Prince Edward County. All existing trees which are to remain shall be fully protected with 1.2m (4') hoarding (i.e. snow fencing) erected beyond their Tree Protection Zone (TPZ) or 'drip line', whichever is greatest. Tree protection shall be installed in such a way as to minimize damage to roots. Prior to

commencement of any site activity, tree protection should be installed. Tree protection must remain intact until all site activities, including landscaping, are complete. Areas within the tree protection barrier fencing shall remain undisturbed and shall not be used for the storage of building materials or equipment. No grade changes shall be permitted within the TPZ. Surplus soil, equipment debris or materials shall not be placed over the root systems of the trees within the TPZ. No contaminants will be dumped or flushed. The owner or owner's agents should take every precaution necessary to prevent damage to trees or shrubs to be retained.

**Prior to site disturbance, the Owner and Contractor must ensure that work is in conformance with the Migratory Bird Convention Act.**

### **6.3 Wetland/Swamp/Forest Edge Management Notes:**

1. Minimize disturbance widths wherever possible by reducing temporary working easements, limiting equipment storage areas and vehicle turning points to open areas dominated by exotic species, and reducing footprints.
2. Tree protection fencing shall be installed beyond the forest edge dripline to be retained. The location of tree protection fence shall be confirmed on site. Herb and shrub layer shall be left intact wherever possible.
3. Where feasible, stumps within 5m of the new edge should not be grubbed to allow groundcover regeneration from the undisturbed seedbank.
4. Native woody material removed and chipped may be used as mulch for restoration plantings.
5. Grading shall be designed to meet existing grades minimum of 3m away from the tree dripline in order to prevent suffocation of roots. All effort to maintain pre-construction soils and seed bank shall be employed, except in areas with heavy invasion by exotic species.
6. Drainage patterns adjacent to the new edge shall be maintained to avoid changes in soil moisture resulting from concentration/redirection of flows.
7. Dead trees should be retained for wildlife benefits. Pruning for reduction and removal of dead limbs shall be carried out to mitigate risk.

### **6.4 Construction Management:**

During construction an ISA Certified Arborist shall be retained for the following:

- Advise and oversee any site activities where construction impacts upon retained trees
- Advise on root severance and pruning
- Advise on tree damage caused by, or occurring during construction, including storm events, and specify and detail remediation methods
- Advise on location of boring and excavation methods in the root zones of trees, where appropriate
- Advise on grade changes within the critical root zone of trees
- Monitor tree health and advise on cultural requirements of trees during construction
- Advise on any unforeseen changes to construction that are likely to be detrimental to retained trees
- Monitor the Tree Protection Zone (TPZ) barriers and TPZ signage
- Supervise the removal/dismantling of all approved tree protection systems at the completion of construction

### **6.5 Post-Construction Care**

Following the completion of construction and the removal of all tree protection, the Arborist shall re-inspect all retained trees and assess their condition. The Arborist will advise on the requirement of irrigation, deep-root fertilization and de-compaction, as appropriate to ensure the continued health and sustainability of the retained trees.

### **6.6 Replacement Planting**

Proposed replacement planting plans will be prepared to provide compensation for vegetation removals and to provide lot and buffer enhancement. Replanting of trees will help to mitigate the loss of canopy cover benefits and planting of shrubs and ground cover will help mitigate erosion and provide a protective 'buffer' for natural areas.

Planting shall include a diversity of species that are compatible with the site conditions and the existing wetland/forest edge and of sufficient density and height to afford some immediate level of cover for the natural areas. Native species found on site and in the area are to be used along with native and approved ornamental species that are tolerant of site conditions.

A monitoring plan should be developed to ensure that newly planted material survives and fulfills the intended function. Watering of planted stock should occur for 2 years during dry periods and weed mats or brush blankets should be installed where there is abundant herbaceous competition expected. Monitoring should include a 2-year inspection, whereby the plantings are inspected once upon completion of installation, once following the first growing season and winter, and again at the end of the second year. Monitoring should include the invasion of exotic species.

Compensation planting shall be coordinated with the County for ratio of replacement planting based on removal species, size and condition, to be determined. Planting will be coordinated with the subdivision layout, grading, servicing and access roads and driveways.

## APPENDIX A - Species Characteristics and Occurrence Summary

### Buckthorn (*Rhamnus cathartica*)

- Buckthorn is dominant throughout the hedgerow and forest edge understories. Shrubs are mature, multi-stem and dense. Buckthorn is a non-native, invasive, woody shrub that spreads rapidly. It out-competes native vegetation, reduces biodiversity, degrades the quality of wildlife habitat ([www.ontarioinvasiveplants.ca](http://www.ontarioinvasiveplants.ca))

### Ash (*Fraxinus spp.*)

- Ash is dominant throughout the site hedgerows, forest canopies and swamp/wetland areas. Ash is a native and widely distributed medium-sized tree that propagates readily in disturbed areas. Emerald ash borer is an exotic, invasive insect pest that is present throughout southern Ontario and kills all ash (*Fraxinus spp.*) species. Pest control strategies are available with varying effectiveness. Ash trees that die in proximity to development may have to be removed to prevent risk of failure and associated impacts. Ash trees that die in the Environmental protected areas can be retained for habitat benefits.

Silver maple (*Acer saccharinum*) large, native tree, tolerant of wet soils, occurring around swamp area throughout the site

Sugar maple (*Acer saccharum*) – large, native, shade tolerant tree, occurring as co-dominant trees in hedgerows and forest areas throughout the site

Norway maple (*Acer platanoides*) – non-native and invasive tree occurring as new plantings in the lawn clearing area, adjacent the field at the end of Huycks Bay Rd and as a sucker along the private entrance on the site

Paper birch (*Betula papyrifera*) – native, medium-sized tree occurring along the shoreline

Shagbark hickory (*Carya ovata*) – native, medium-sized tree with edible nuts, occurring as co-dominant trees in hedgerows and forest areas throughout the site

Hawthorn (*Crataegus spp.*) – intermediate small tree or shrub, occurring as individuals in hedgerows

Black walnut (*Juglans nigra*) – native, medium-sized tree, one (1) occurring at the west edge of the clearing near Huycks Bay Road

Eastern red cedar (*Juniperus virginiana*) – native, small to medium-sized tree that commonly propagates in disturbed and open areas, one (1) occurring in hedgerow along edge of road

Apple (*Malus spp.*) – common agricultural tree occurring as individuals in hedgerows

Ironwood (*Ostrya virginiana*) – native, small tree, common forest understory tree, very shade tolerant, occurring as individuals throughout hedgerows, forest edge and shoreline

White spruce (*Picea glauca*) – native, common, medium-sized evergreen tree, occurs at edge of plantation/forest and as individuals in open field, lawn and shoreline edge

White pine (*Pinus strobus*) – native, large evergreen tree, occurs as four (4) new plantings in the lawn area near Group T

Pyramidal poplar (*Populus spp.*) – ornamental cultivar on either side of property entrance

Trembling aspen (*Populus tremuloides*) – native, medium-sized tree, pioneer species occurring in small groups along swamp and shoreline edges

Black cherry (*Prunus serotina*) – native, medium-sized tree, intolerant of shade, occurring as individuals along hedgerow and shoreline edge

White oak (*Quercus alba*) – native, large, long-lived tree, occurs as co-dominant individuals along west hedgerow property edge

Red oak (*Quercus rubra*) – native, large, long-lived tree, occurs as co-dominant individuals throughout hedgerows and shoreline edge

Staghorn sumac (*Rhus typhina*) – native, common shrub that grows in stands occurring along hedgerows

Black locust (*Robinia pseudoacacia*) – non-native, medium-sized tree that colonizes open areas, occurring in a group in the southeast corner of the site adjacent road

Crack willow (*Salix fragilis*) - non-native, naturalized, medium-sized trees named for their brittle branchlets, large, multi-stem trees occurring along edge of swamp and shoreline

Eastern white cedar (*Thuja occidentalis*) – native, common field evergreen, occurring as individuals along forest and shoreline edges

Basswood (*Tilia americana*) – native, large tree, shade tolerant, occurring as co-dominant individuals in hedgerows and swamp edge throughout site

Common lilac (*Syringa vulgaris*) – non-native, common, ornamental shrub, occurring as a multi-stem group along the west edge of clearing near Huycks Bay Road

American elm (*Ulmus americana*) – large, native tree impacted by Dutch Elm Disease, occurring as rare co-dominant individuals in hedgerow and along shoreline

Hybrid butternut (*Juglans spp.*) - non-native Walnut hybrid that are not protected under the Endangered Species Act. Trees were confirmed to be hybrids using the 'Data Sheet for Field Identification'. There are two (2) small individuals occurring at the west edge of the clearing near Huycks Bay Road.

## APPENDIX B - Inventory of Groupings and Impact

- **Group A – Ag Hedgerow/Roadside (west of driveway between field and road – W to E)**
  - Impact: No anticipated impact. Confirm during detailed design.
  - Species, Size and Occurrence:
    1. Buckthorn (*Rhamnus cathartica*) multi-stem 10-20cm DBH (dense throughout, growing to underside of overhead wires)
    2. Staghorn sumac (*Rhus typhina*) small stands – good condition
    3. Eastern red cedar (*Juniperus virginiana*) – 15cm DBH – good condition (2m west of hydro pole)
    4. Hawthorn (*Crataegus spp.*) 2 stems @15cm DBH each – good condition
    5. Ash (*Fraxinus spp.*) 1 at 10cm DBH– good condition (west of gate)
    6. Apple (*Malus spp.*) 1 with 2 stems @ 15cm DBH – fair condition (east of gate)
  - Proposed Impact:
  
- **Group B – Ag Hedgerow/Roadside (east of driveway between field and road – W to E)**
  - Impact: No anticipated impact. Confirm during detailed design.
  - Species, Size and Occurrence:
    1. Buckthorn (*Rhamnus cathartica*) – (dense throughout, growing to underside of overhead wires)
    2. Staghorn sumac (*Rhus typhina*) small stand 5-10cm DBH – good condition (towards east end)
    3. Black locust (*Robinia pseudoacacia*) 3 @10-15cm DBH (east end), 10 @ 30-40cm DBH (east end), 1 @ 74cm DBH – good condition (closest to east property line – sign nailed to side), 1 with 2 stems @ 32/28cm DBH (east side of mown access)
  
- **Group C – Ag Hedgerow (between field and adjacent residential driveway to west – S to N)**
  - Impact: No anticipated impact. Confirm during detailed design.
  - Species, Size and Occurrence:
    1. Buckthorn (*Rhamnus cathartica*) – (dense throughout)
    2. Ironwood (*Ostrya virginiana*) 2 @ 40cm – fair condition (south end of driveway adjacent driveway on other side of wire fence)
    3. Shagbark hickory (*Carya ovata*) 2 stems @ 42/37cm DBH – good condition
    4. Ironwood (*Ostrya virginiana*) 4 stems at base @20/20/15/10 – good condition
    5. Sugar maple (*Acer saccharum*) 2 stems @ 37cm DBH each – good condition
    6. Basswood (*Tilia americana*) 9 stems at base, 7 @ 15cm, 1 @ 52cm, 1 @ 25cm DBH – good condition (other side of wire fence)
    7. Sugar maple (*Acer saccharum*) 2 stems from base @ 40cm DBH each, decay at base – fair to poor condition (other side of wire fence)



8. Ironwood (*Ostrya virginiana*) 2 stems @ 23/27 – good condition (other side of wire fence)
  9. Shagbark hickory (*Carya ovata*) 59cm DBH – fair condition, large branch failure (wire fence against trunk)
  10. Sugar maple (*Acer saccharum*) 49cm DBH – good condition
  11. Sugar maple (*Acer saccharum*) 3 stems @ 20/35/30 – good condition
  12. Shagbark hickory (*Carya ovata*) 22cm DBH – good condition
  13. Red oak (*Quercus rubra*) 99cm DBH – good condition
  14. Ironwood (*Ostrya virginiana*) 15cm DBH – good condition
  15. Ash (*Fraxinus spp.*) 20/30/35 – good condition
  16. Ash (*Fraxinus spp.*) 20cm DBH – good condition
  17. Oak (*Quercus spp.*) – dead, recently felled
- **Group D – Ag Hedgerow (west edge between internal driveway and field – S to N)**
- Impact: Trees may require removal to accommodate road construction. Confirm during detailed design.
  - Species, Size and Occurrence:
    1. Pyramidal poplar (*Populus spp.*) 25cm DBH – fair condition, 50% dieback
    2. Buckthorn (*Rhamnus cathartica*) 15-20cm DBH (dense throughout)
    3. Apple (*Malus spp.*) 2 stems @ 15cm DBH – fair condition
- **Group E – Ag Hedgerow (east edge between internal driveway and field)**
- Impact: Trees may require removal to accommodate road construction. Confirm during detailed design.
  - Species, Size and Occurrence:
    1. Pyramidal poplar (*Populus spp.*) 100cm DBH – poor condition, 50% dieback, included stems, 15% dieback
    2. Buckthorn (*Rhamnus cathartica*) 15-20cm DBH (dense throughout)
    3. Ash (*Fraxinus spp.*) 15cm DBH – fair condition
    4. Hawthorn (*Crataegus spp.*) 3 @ 10/15cm DBH – good condition
- **Group F – Ag Hedgerow (between field and adjacent agricultural property to east)**
- Impact: No anticipated impact. Confirm during detailed design.
  - Species, Size and Occurrence:
    1. Black locust (*Robinia pseudoacacia*) stand of 10 @ 10-15cm DBH – good condition
    2. Buckthorn (*Rhamnus cathartica*) 10-15cm DBH (dense throughout)
    3. Apple (*Malus spp.*) 30cm DBH – fair condition
    4. Shagbark hickory (*Carya ovata*) 15cm DBH – good condition
    5. Sugar maple (*Acer saccharum*) 2 stems from base @ 15cm DBH each – good condition
    6. Sugar maple (*Acer saccharum*) 30cm DBH – good condition
    7. Shagbark hickory (*Carya ovata*) 3 stems @ 26/27/29 included at base – good condition
    8. Sugar maple (*Acer saccharum*) 13cm DBH – good condition

9. Ash (*Fraxinus spp.*) 2 stems @ 39/50, 40% dieback, lean to west – poor condition
  10. Shagbark hickory (*Carya ovata*) 22cm DBH – good condition
  11. Shagbark hickory (*Carya ovata*) 33cm DBH – good condition
  12. Ash (*Fraxinus spp.*) 40cm DBH – good condition
  13. Shagbark hickory (*Carya ovata*) 15cm DBH – good condition
  14. Ash (*Fraxinus spp.*) 20cm DBH – fair/poor condition, 30% dieback
  15. Ash (*Fraxinus spp.*) 15/22cm DBH – poor condition 50% dieback
  16. Apple (*Malus spp.*) 3 stems @ 20cm DBH – fair condition
  17. Ash (*Fraxinus spp.*) 15cm DBH – fair/poor condition 40% dieback
  18. Ash (*Fraxinus spp.*) 35cm DBH – good condition
  19. Ash (*Fraxinus spp.*) group of 10 @ 30-50cm spaced at ~5m – fair/good condition (forest edge)
- **Group G – Ag Hedgerow (between two agricultural fields)**
    - o Impact: No anticipated impact. Confirm during detailed design.
    - o Species, Size and Occurrence:
      1. Buckthorn (*Rhamnus cathartica*) 10-15cm DBH (dense throughout)
      2. Apple (*Malus spp.*) 2 stems @ 40cm DBH each – fair condition
      3. Ash (*Fraxinus spp.*) 2 stems @ 30/40cm DBH – fair condition
      4. Sugar maple (*Acer saccharum*) 30cm DBH – good condition
      5. Apple (*Malus spp.*) 2 stems @ 30cm DBH each – fair condition
  - **Group H – Ag Hedgerow (between field and adjacent residential land to west – S to N)**
    - o Impact: No anticipated impact. Confirm during detailed design.
    - o Species, Size and Occurrence:
      1. Buckthorn (*Rhamnus cathartica*) 10-15cm DBH (dense throughout)
      2. White oak (*Quercus alba*) 57cm DBH – good condition
      3. Shagbark hickory (*Carya ovata*) 3 stems @ 15/25/20cm DBH – good/fair condition
      4. White oak (*Quercus alba*) 29cm DBH – good condition
      5. White oak (*Quercus alba*) 22cm DBH – good condition
      6. Ash (*Fraxinus spp.*) 2 stems @ 15/20cm DBH – good condition
      7. Sugar maple (*Acer saccharum*) stand of ~ 20 @30-60cm DBH – good/fair condition
      8. Red oak (*Quercus rubra*) 40cm DBH – good condition
      9. Shagbark hickory (*Carya ovata*) 40cm DBH – good condition
      10. Ash (*Fraxinus spp.*) ~10 @ 20-30cm DBH – good/fair condition
  - **Group I – Forest Edge (north of agricultural field/south of swamp - W to E)**
    - o Impact: No anticipated impact. Included in protected 30m wetland setback.
    - o Species, Size and Occurrence:
      1. Buckthorn (*Rhamnus cathartica*) 10-15cm DBH (dense throughout)
      2. Ash (*Fraxinus spp.*) throughout ~ 40 @ 40-50cm DBH – fair condition
  - **Group J – Forest Edge (north of agricultural field/south of plantation and swamp – W to E)**

- Impact: No anticipated impact. Included in protected 30m wetland setback.
- Species, Size and Occurrence:
  1. Ash (*Fraxinus spp.*) throughout ~ 30 @ 30-50cm DBH – fair condition
  2. White spruce (*Picea glauca*) ~20 @ 30-4cm DBH, lower branches dead – fair/poor condition (3-4m spacing along edge of forest trail)
- **Group K – Swamp Edge (east and west of driveway through swamp – S to N)**
  - Impact: May be impacted by road. Existing trees and exact locations to be reviewed and considered in detailed design layout.
  - Species, Size and Occurrence:
    1. Ash (*Fraxinus spp.*) 50cm DBH – fair condition
    2. Norway maple (*Acer platanoides*) 10cm DBH – good condition
    3. Ash (*Fraxinus spp.*) 50cm DBH – fair condition
    4. Basswood (*Tilia americana*) 50cm DBH – good condition
    5. Ash (*Fraxinus spp.*) 50cm DBH – fair condition
    6. Basswood (*Tilia americana*) 42cm DBH – good condition
  - Impact: No impact. Environmentally protected wetland area
    7. Crack willow (*Salix fragilis*) 8 @ 80-100cm DBH (around clearing and adjacent water) – fair condition
    8. Crack willow (*Salix fragilis*) 6 @ 30-50cm DBH – fair condition
    9. White spruce (*Picea glauca*) 20cm DBH - dead (in wet area)
    10. Crack willow (*Salix fragilis*) 80/40cm DBH, trunk lean – fair condition
    11. Ash (*Fraxinus spp.*) 3 @ 40cm DBH – fair condition
    12. Silver maple (*Acer saccharinum*) ~ 15 @ 20-30cm DBH – good/fair condition
    13. Ash (*Fraxinus spp.*) ~30 @ 30-50cm DBH – fair/good condition
- **Group L – Field Meadow Edge (end of Huycks Bay Rd to west/swamp surrounding)**
  - Impact: No anticipated impact. Environmentally protected area and 30m wetland setback, no development proposed in clearing or end of Huycks Bay Rd.
  - Species, Size and Occurrence:
    1. Buckthorn (*Rhamnus cathartica*) 10-15cm DBH (throughout south forest/swamp edge)
    2. Ash (*Fraxinus spp.*) 30-40cm DBH – good/fair condition (throughout south forest/swamp edge)
    3. Trembling aspen (*Populus tremuloides*) 70cm DBH – good condition (west edge)
    4. Trembling aspen (*Populus tremuloides*) group of suckers 10-15cm DBH - good condition (west edge)
    5. Ash (*Fraxinus spp.*) 5 @ 30-40cm DBH – fair condition (west edge)
    6. Staghorn sumac (*Rhus typhina*) group 10-15cm DBH – good condition (west edge)
    7. Black walnut (*Juglans nigra*) 10cm DBH – good condition (west edge)
    8. White spruce (*Picea glauca*) 20cm DBH – good/fair condition (west edge)
    9. Common lilac (*Syringa vulgaris*) multi-stem groups 5-10cm DBH – good condition (west edge)

10. Hybrid butternut (*Juglans spp.*) 2 stems @ 10cm DBH – good condition (west edge)
  11. Eastern white cedar (*Thuja occidentalis*) 3 @ 15cm DBH – good/fair condition (west edge)
  12. White spruce (*Picea glauca*) 20cm DBH – good/fair condition (west edge)
  13. Norway maple (*Acer platanoides*) 10cm DBH – good condition (west edge)
  14. Hybrid butternut (*Juglans spp.*) 2 stems @ 15cm DBH – good condition (west edge)
  15. Staghorn sumac (*Rhus typhina*) small group 10-15cm DBH (west/north edge)
  16. Ash (*Fraxinus spp.*) 30-40cm DBH – fair condition (throughout north and east forest/swamp edge)
  17. Ash (*Fraxinus spp.*) 5-15cm DBH – good condition (throughout clearing)
- **Group M – Swamp Edge (north of swamp/south of agricultural field and lawn – W to E)**
    - o Impact: No anticipated impact. Included in protected 30m wetland setback.
    - o Species, Size and Occurrence:
      1. Ash (*Fraxinus spp.*) ~30 @ 30-40cm DBH (throughout – fair condition / dead towards west to shoreline)
      2. White spruce (*Picea glauca*) 15cm DBH – good condition (east edge near existing private entrance)
  - **Group N – Swamp Edge (north of swamp/south of agricultural field – W to E)**
    - o Impact: No anticipated impact. Included in protected 30m wetland setback.
    - o Species, Size and Occurrence:
      1. Ash (*Fraxinus spp.*) ~20 @ 30-50cm DBH – good/fair condition (throughout)
      2. Buckthorn (*Rhamnus cathartica*) 10-15cm DBH (along edge)
      3. Sugar maple (*Acer saccharum*) 70cm DBH – good condition
      4. Silver maple (*Acer saccharinum*) 40cm DBH – good condition
      5. Trembling aspen (*Populus tremuloides*) 25cm DBH – good condition
      6. Trembling aspen (*Populus tremuloides*) 3 stems @ 30cm DBH – good condition
      7. Silver maple (*Acer saccharinum*) 70cm DBH – good condition
      8. Sugar maple (*Acer saccharum*) 100cm DBH – good condition
      9. Silver maple (*Acer saccharinum*) 100cm DBH – good condition
  - **Group O – Swamp Edge (north of swamp/south of agricultural field – W to E)**
    - o Impact: No anticipated impact. Included in protected 30m wetland setback.
    - o Species, Size and Occurrence:
      1. Sugar maple (*Acer saccharum*) 80cm DBH – good condition
      2. Ash (*Fraxinus spp.*) ~60 @ 20-40cm DBH – good/fair condition (throughout)
      3. Basswood (*Tilia americana*) 2 @ 30/40cm DBH – good condition
      4. Trembling aspen (*Populus tremuloides*) 20cm DBH – good condition

5. Silver maple (*Acer saccharinum*) 2 stems @ 80cm DBH each – good condition
  6. Basswood (*Tilia americana*) 2 stems @ 20cm DBH each – good condition
  7. Silver maple (*Acer saccharinum*) 50cm DBH each – good condition
  8. Trembling aspen (*Populus tremuloides*) 3 @ 20-30cm DBH – good condition
  9. Silver maple (*Acer saccharinum*) 3 stems @ 80cm DBH each – good condition
  10. Silver maple (*Acer saccharinum*) 3 stems @ 20/60/70cm DBH each – good condition
- **Group P – Ag Hedgerow (adjacent agricultural property to east – S to N)**
- Impact: No anticipated impact. Confirm during detailed design.
  - Species, Size and Occurrence:
    1. Buckthorn (*Rhamnus cathartica*) 10-15cm DBH (dense throughout)
    2. Sugar maple (*Acer saccharum*) 100cm DBH – fair/good condition, lean
    3. Ash (*Fraxinus spp.*) 80cm DBH – good condition
    4. Ash (*Fraxinus spp.*) 60cm DBH – fair condition, trunk crack, lean
    5. Black cherry (*Prunus serotina*) 60cm DBH – good condition
    6. Basswood (*Tilia americana*) 4 stems @ 70-80cm DBH – good condition
    7. Sugar maple (*Acer saccharum*) 60cm DBH – good condition
    8. Ironwood (*Ostrya virginiana*) 8 stems @15-20cm DBH – good condition
    9. Ash (*Fraxinus spp.*) 2 stems @ 60/80cm DBH – fair/good condition
    10. Red oak (*Quercus rubra*) 4 stems @ 100/80/80/70 – good condition
    11. Ironwood (*Ostrya virginiana*) 2 stems @20cm DBH each – good condition
    12. Ash (*Fraxinus spp.*) 3 stems @ 30-40cm DBH – good condition
    13. Ash (*Fraxinus spp.*) 20cm DBH – good condition
    14. Ash (*Fraxinus spp.*) 60cm DBH – good condition
    15. Ash (*Fraxinus spp.*) 3 stems @ 50-60cm DBH – poor condition 50% dieback
    16. Ash (*Fraxinus spp.*) 60cm DBH – good condition
    17. Ash (*Fraxinus spp.*) 3 stems @ 40/40/15cm DBH – poor condition 50% dieback
    18. Ash (*Fraxinus spp.*) 40cm DBH - dead
    19. Ash (*Fraxinus spp.*) 25cm DBH – poor condition, 50% dieback
    20. Ash (*Fraxinus spp.*) 35cm DBH – poor condition, 50% dieback
    21. Ash (*Fraxinus spp.*) 80cm DBH – poor condition, 50% dieback
    22. Basswood (*Tilia americana*) 40cm DBH – good condition
    23. Ash (*Fraxinus spp.*) 60cm DBH – fair condition
    24. Basswood (*Tilia americana*) 35cm DBH – good condition
- **Group Q – Ag Hedgerow (between two agricultural fields – W to E)**
- Impact: No anticipated impact. Confirm during detailed design.
  - Species, Size and Occurrence:
    1. Buckthorn (*Rhamnus cathartica*) 10-15cm DBH (dense throughout)
    2. Ash (*Fraxinus spp.*) 30/40cm DBH – fair condition
    3. Ash (*Fraxinus spp.*) 30cm DBH – fair condition

4. Ash (*Fraxinus spp.*) 5 @ 20-30cm DBH – fair condition
  5. Basswood (*Tilia americana*) 2 stems @ 80cm DBH – good/fair condition, lean
  6. Ash (*Fraxinus spp.*) 9 @ 30-50cm DBH – fair condition
  7. Sugar maple (*Acer saccharum*) 75cm DBH – good condition
  8. Sugar maple (*Acer saccharum*) 80cm DBH – good condition
  9. Ash (*Fraxinus spp.*) 4 @ 20-30cm DBH – poor condition, 50% dieback
  10. Ash (*Fraxinus spp.*) 15cm DBH – fair condition
  11. Ash (*Fraxinus spp.*) 20cm DBH – fair condition
  12. Sugar maple (*Acer saccharum*) 15cm DBH – good condition
  13. Ash (*Fraxinus spp.*) 30cm DBH – fair condition
- **Group R – Ag Hedgerow (adjacent agricultural property to east – S to N)**
    - o Impact: No anticipated impact. Confirm during detailed design.
    - o Species, Size and Occurrence:
      1. Buckthorn (*Rhamnus cathartica*) 10-15cm DBH (dense throughout)
      2. Ash (*Fraxinus spp.*) ~20 @ 20-30cm DBH – fair/good condition
      3. Ash (*Fraxinus spp.*) 5 @ 20-0cm DBH – fair/good condition
      4. Sugar maple (*Acer saccharum*) 70cm DBH – good condition
      5. Ash (*Fraxinus spp.*) 30cm DBH – fair/good condition
      6. Ash (*Fraxinus spp.*) 80cm DBH – fair/good condition
      7. Sugar maple (*Acer saccharum*) 3 @ 15-20cm DBH – good condition
      8. Sugar maple (*Acer saccharum*) 80cm DBH – good condition
  - **Group S - Ag Hedgerow (adjacent agricultural property to east)**
    - o Impact: No anticipated impact. Confirm during detailed design.
    - o Species, Size and Occurrence:
      1. American elm (*Ulmus americana*) 5 stems @ 15-20cm DBH – good condition
      2. Ash (*Fraxinus spp.*) 15cm DBH – fair/good condition
      3. Ash (*Fraxinus spp.*) 30cm DBH – fair/good condition
      4. Sugar maple (*Acer saccharum*) 35cm DBH – good condition
      5. Ash (*Fraxinus spp.*) 40cm DBH – fair/good condition
      6. Red oak (*Quercus rubra*) 2 stems @ 60cm DBH each – good condition
      7. Red oak (*Quercus rubra*) 4 stems @ 20-30cm DBH each – good condition
      8. Ash (*Fraxinus spp.*) 2 stems @60-80cm DBH – fair/good condition
  - **Group T – Shoreline (south of Bay shoreline – W to E)**
    - o Impact: No anticipated impact. Protected 30m shoreline setback.
    - o Species, Size and Occurrence:
      1. Eastern cottonwood (*Populus deltoides*) >100cm DBH – fair/poor condition, 50% dieback
      2. Ash (*Fraxinus spp.*) 20-30cm DBH – good condition
      3. Eastern cottonwood (*Populus deltoides*) >100cm DBH – fair/poor condition, 50% dieback
      4. Apple (*Malus spp.*) 2 stems @ 20cm DBH – fair condition
      5. Ash (*Fraxinus spp.*) 30cm DBH – fair condition
      6. White spruce (*Picea glauca*) 15cm DBH – fair condition



7. Norway maple (*Acer platanoides*) row of 4 in clearing (20/20/20/10cm DBH) – good condition
8. White spruce (*Picea glauca*) 9 @ 2-3m height in clearing – good/fair condition – dieback on some
9. White pine (*Pinus strobus*) 4 @ 2-3m height – good condition
10. Trembling aspen (*Populus tremuloides*) 30cm DBH – good condition
11. Paper birch (*Betula papyrifera*) 10 stems @ 20-30cm DBH – fair condition
12. Crack willow (*Salix fragilis*) 30cm DBH – fair condition, trunk lean
13. Trembling aspen (*Populus tremuloides*) 40cm DBH – good condition
14. Crack willow (*Salix fragilis*) 60cm DBH – fair condition
15. Ivory silk tree lilac (*Syringa reticulata* 'Ivory Silk') 15cm DBH – good condition
16. Crack willow (*Salix fragilis*) 65cm DBH – fair condition
17. Crack willow (*Salix fragilis*) 70cm DBH – fair condition
18. White spruce (*Picea glauca*) 25cm DBH – fair condition, uneven crown
19. Cherry (*Prunus spp.*) 10 stems @ 10-15cm DBH – good condition
20. Ash (*Fraxinus spp.*) 2 stems @ 40/35cm DBH – fair condition
21. Ash (*Fraxinus spp.*) 40cm DBH – fair condition
22. Eastern white cedar (*Thuja occidentalis*) 2 stems @ 25cm DBH each – good condition
23. Red oak (*Quercus rubra*) – good condition
24. Ironwood (*Ostrya virginiana*) 3 stems @ 31/25/20 – fair/good condition
25. Ash (*Fraxinus spp.*) 2 stems @ 10cm DBH – good condition
26. Ash (*Fraxinus spp.*) 30cm DBH – fair condition
27. Crack willow (*Salix fragilis*) 6 stems @ 60-80cm DBH – fair condition
28. Ash (*Fraxinus spp.*) 2 stems @ 40cm DBH each – fair condition
29. Ash (*Fraxinus spp.*) 3 stems @ 40cm DBH – fair condition
30. Ash (*Fraxinus spp.*) 30cm DBH – fair condition
31. Ash (*Fraxinus spp.*) 30cm DBH – fair condition
32. Ash (*Fraxinus spp.*) 3 stems @ 20-30cm DBH – fair condition
33. American elm (*Ulmus americana*) 64cm DBH – good condition
34. Crack willow (*Salix fragilis*) 60cm DBH – fair condition
35. Ash (*Fraxinus spp.*) 2 stems @ 15-20cm DBH – fair condition
36. Crack willow (*Salix fragilis*) 8 stems @ 30-80cm DBH – fair condition
37. Ironwood (*Ostrya virginiana*) 5 @ 15-35cm DBH – good condition
38. Ash (*Fraxinus spp.*) 2 @ 15/30cm DBH – fair condition
39. White spruce (*Picea glauca*) 2 @ 15cm DBH each – fair condition
40. Crack willow (*Salix fragilis*) 6 stems @ 60cm DBH – fair condition
41. Ash (*Fraxinus spp.*) 50cm DBH – fair condition
42. Crack willow (*Salix fragilis*) 2 stems @ 50/45cm DBH – fair condition
43. Ash (*Fraxinus spp.*) 2 stems @ 15/20cm DBH – fair condition
44. Ash (*Fraxinus spp.*) 3 stems @ 30-40cm DBH – fair condition
45. Ash (*Fraxinus spp.*) 50cm DBH – fair condition
46. Ash (*Fraxinus spp.*) 20cm DBH – fair condition
47. Crack willow (*Salix fragilis*) 3 stems @ 50/40/40cm DBH – fair condition
48. Crack willow (*Salix fragilis*) 100cm DBH – fair condition
49. Eastern white cedar (*Thuja occidentalis*) 10cm DBH – good condition
50. Crack willow (*Salix fragilis*) 60cm DBH – fair condition

51. Ash (*Fraxinus spp.*) 2 stems @ 15/20cm DBH – fair condition
52. Crack willow (*Salix fragilis*) 100cm DBH – fair condition
53. Ash (*Fraxinus spp.*) 15cm DBH – fair condition
54. Crack willow (*Salix fragilis*) 2 stems @60cm DBH each – fair condition
55. Ash (*Fraxinus spp.*) 40cm DBH – fair condition
56. Ash (*Fraxinus spp.*) 30cm DBH – fair condition
57. Crack willow (*Salix fragilis*) 5 stems @50-100cm DBH

- **Group U – Shoreline (south of Bay shoreline – W to E)**

- Impact: No anticipated impact. Protected 30m shoreline setback.
- Species, Size and Occurrence:
  1. Ash (*Fraxinus spp.*) 10 @ 30-50cm DBH – fair condition
  2. Crack willow (*Salix fragilis*) 3 stems @60-80cm DBH – fair condition
  3. Crack willow (*Salix fragilis*) 70cm DBH – fair condition
  4. Paper birch (*Betula papyrifera*) 4 stems @ 40-60cm DBH – fair condition
  5. Ash (*Fraxinus spp.*) 40cm DBH – fair condition
  6. Eastern white cedar (*Thuja occidentalis*) 2 stems @ 50/30cm DBH – fair condition
  7. Paper birch (*Betula papyrifera*) 50cm DBH – fair condition, lean
  8. Eastern white cedar (*Thuja occidentalis*) 3 @ 40-50cm DBH – fair condition
  9. Sugar maple (*Acer saccharum*) 70cm DBH – good condition
  10. Ash (*Fraxinus spp.*) 2 @ 30/40cm DBH – fair condition
  11. Ash (*Fraxinus spp.*) 50cm DBH – fair condition
  12. Crack willow (*Salix fragilis*) 2 stems @ 80cm DBH each – fair condition
  13. Paper birch (*Betula papyrifera*) 4 stems @ 30/25/15/10cm DBH – fair condition
  14. Black cherry (*Prunus serotina*) 60cm DBH – good condition
  15. Ironwood (*Ostrya virginiana*) 3 stems @25cm DBH – good condition
  16. Sugar maple (*Acer saccharum*) 50cm DBH – good condition
  17. Ash (*Fraxinus spp.*) 40cm DBH – fair condition
  18. Eastern white cedar (*Thuja occidentalis*) 7stems @ 20-30cm DBH – fair condition
  19. Ironwood (*Ostrya virginiana*) 4 stems @15-20cm DBH – fair condition
  20. Ash (*Fraxinus spp.*) 30cm DBH – fair condition
  21. Paper birch (*Betula papyrifera*) 2 stems @ 20/40cm DBH – fair condition
  22. Crack willow (*Salix fragilis*) uprooted – poor condition
  23. Sugar maple (*Acer saccharum*) 3 stems @ 60cm DBH – fair condition
  24. Ash (*Fraxinus spp.*) 3 stems @ 60-80cm DBH – fair condition



## APPENDIX C – Tree Protection Fencing Detail

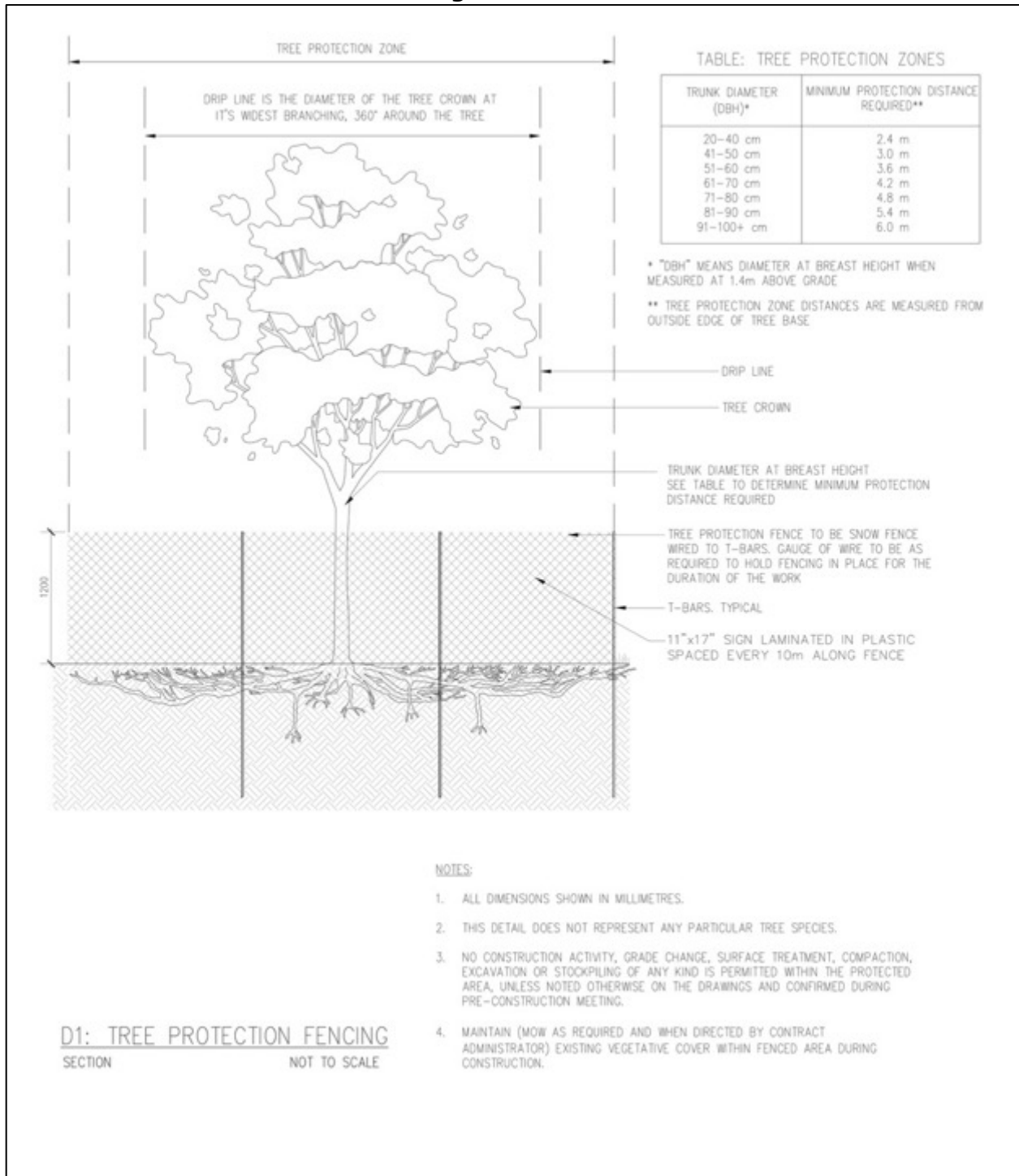


Figure 1

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## Certification:

I certify that all the statements of fact in this report are true, complete, and accurate to the best of my knowledge and belief, and that they are made in good faith.



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Gina Brouwer, ISA Certified Arborist ON-0937A