Woody Vegetation Assessment/Tree Preservation Report

Frontenac Forest Estates Subdivision

Town of Milton

Owner: **Frontenac Forest Estates Inc.**
c/o Trinison Management Corp.
8600 Dufferin Street
Vaughan, Ontario
L4K 5P5

Consultant: **Cosburn Giberson Landscape Architects**
30 Centurian Drive, Suite 105
Markham, Ontario
L3R 8B8
905-475-6988
Danny@cgla.ca

Project: **2813**

Date: **March 27, 2025**

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1.0 Introduction

Cosburn Giberson Landscape Architects (CGLA) has been retained by Trinison Management Corp. to prepare a Woody Vegetation Assessment/Tree Preservation Report with respect to a proposed Tertiary Plan Area located in the Town of Milton.

For a project of this nature where tree injury and removal will occur in the future the Town of Milton requires that a Woody Vegetation Assessment/Tree Preservation Report be submitted. The report accompanies the Woody Vegetation Assessment/Tree Preservation Plan – Stage 1 which has also been prepared for submission.

This document, the Woody Vegetation Assessment/Tree Preservation Report, has been prepared to provide general recommendations for Stage 1 tree preservation, arboricultural maintenance and tree removals within the context of future subdivision development.

Once detailed subdivision grading information is available the existing trees which have been identified in this report for preservation consideration will be tagged, survey located and inventoried at Stage 2 of the Tree Preservation process.

This report and the accompanying drawings WA-1and WA-2 have been prepared by and with input from Danny Beauchesne, Landscape Architect and I.S.A. Certified Arborist.

1.1 Site Location and Context

The subject property are 79.85 Ha (191.64 acre) unoccupied agricultural lands located on the south side of Deny Road between 8th line and Trafalgar Road in the hamlet of Agerton, in the Town of Milton.

Surrounding land uses are agricultural on all sides with the exception of a retail plant nursery to the west, an Enbridge facility to the east and rural residences to the north.

The highway 407 south leg runs east of 8th Line , east of the project area.

The site is located within the South Slope Minor Physiographic Region of Ontario (Chapman and Putman, 1973).

The subject lands are located within the Sixteen Mile Creek watershed. This watershed is within the area regulated by Conservation Halton.

1.2 Study Objectives

The primary objectives of this study are to:

- To assess all existing woody vegetation communities within the subject lands;
- To provide a summary and analysis of all vegetation communities and an evaluation of their preservation potential within the context of proposed subdivision development.
- Assess the preservation suitability of existing woody vegetation within the context of future subdivision development.
- Provide task specific short and long-term design and management recommendations to ensure that trees to be preserved are maintained in a healthy and sustainable state during and following site construction. The guiding principal underlying this report is to minimize impact on any existing trees to be preserved.

- Provide rationale why existing trees cannot be preserved.
- Provide photo documentation of existing trees.
- Summarize the recommendations of the accompanying Woody Vegetation Assessment/ Tree Preservation Plans WA-1 and WA-2.

Each Woody Vegetation Unit was assessed using a generalized rating system for Biological Health and for Tree Structure. A three level scale of biological health and condition with descriptors of P (Poor), F (Fair) and G (Good) was used.

The resulting Woody Vegetation Assessment/Tree Preservation Plan – Stage 1 and associated Woody Vegetation Unit Summaries form the initial phase of the tree preservation process. Where applicable, trees have been denoted on the Tree Preservation Plan - Stage 1 to be individually tagged and inventoried for future study and consideration for potential preservation during Stage 2 of the process. Generally speaking, given the low quality of existing vegetation and the proposed engineering and development of the property; there are few trees that will be potentially preserved. Existing trees on neighbouring properties that may be affected by the works have been noted and methods for their protection are included in the plans and the report.

2.0 Site Assessment and Analysis

2.1 Study Methodology

Following a review of relevant background documents an ortho-photographic base was procured at an appropriate scale and resolution on which to base the assessment information.
A review of available background information was completed as follows:

- Aerial photography provided by First Base Solutions, Markham, Ontario. Flight date Spring 2021.
- Tertiary Plan Concept, Bousfields Inc., November 11, 2021.

Field work including on-site inventory and assessment of trees, was completed on December 10, 2021 under 6°C, cloudy and windy conditions. site photographs were taken on December 20, 2021 under 3°, sunny conditions.

Please note that all measurements in this report are expressed in the metric system of measurement.

All woody vegetation within study area boundaries was evaluated from assessment in the field, aerial photographic interpretation and information gathered from various agencies as applicable.

The vegetation assessment includes a description of individual tree specimens, groupings and woodland units. Understorey conditions and significant natural features were also recorded.

Each woodland unit was assessed under the following categories:

- overstorey composition and relative species abundance and general health and condition.
- woody shrubs and vines present
- overstorey tree trunk diameter (DBH) in centimetres
- overstorey tree height (metres)

- history of disturbances and additional comments

This information forms Appendix i) of this report, Woody Vegetation Unit Summaries.

All vegetation communities, which are composed of trees of similar species composition and age, are indicated on the accompanying Woody Vegetation Assessment/Tree Preservation Plan – Stage 1, Drawing WA-1.

Once woodland unit boundaries were determined the limits of the proposed plan of subdivision were superimposed onto the aerial photographic base to determine the extent of tree removal which will be required for the development and any potential tree preservation zones.

2.2 Existing Site Conditions

The study area falls within the South Slope Physiographic Region of Ontario (Chapman and Putnam, 1973). The site topography is generally gently sloping in a southeasterly direction, The lands include several small agricultural drainage courses which exit the site at its south boundary.

A small pool is located in the southwest corner of the central southside woodland block, unit DW-06 on drawing WA-1.

Natural grades and surface soils have been altered by farming activity but generally fall from north to south.

The majority of the site area is currently or has been recently under agricultural cultivation for corn and soya beans. An abandoned farmhouse fronting 8th Line remains on site. Invasive alien tree species have colonized most non-cultivated sections of project site area.

West of the woodland block are five large raised wooded wildlife habitat roosting structures in good condition.

2.3 Preservation Priority Rating Criteria

Preservation priority ratings from low to high refer to both the significance and the quality of individual woodland units based upon their existing quality and merits and independent of proposed development design. Units that have been assigned a high priority rating may represent a significant opportunity for group or entire unit preservation. Units designated as moderate preservation priority offer only good opportunity for individual tree specimen preservation. Units rated as low preservation priority due to hazard potential, poor biological health and condition and/or invasive alien species status are not recommended for preservation.

The following specific criteria were evaluated during field assessment, prior to determination of relative preservation priority ratings.

a) Scenic Quality

Healthy, well-branched mature tree specimens in an undisturbed, natural context are characteristics, which are generally perceived as being attractive. Species typical of 'climax' stand typically have a stronger visual appeal to the general public than do successional species such as European Buckthorn. Tree specimens, which are dead or are in declining health and/or of poor form, in immature stage of life cycle, are generally considered less attractive in the eyes of the public.

b) Vegetation Sensitivity

The degree of effort required to mitigate construction related impacts on woody vegetation and/or rehabilitate vegetation communities to their original condition. This characteristic depends to a large extent on the ecological stability of a given woodland unit. Vegetation within dry mesic and mesic soil moisture regimes, upland hardwood and mixed woodland stands are typically more tolerant to construction impacts than vegetation within young and/or wetter wooded areas.

c) Interpretive Opportunities

Woody vegetation within woodland units possessing high species diversity, high quality wildlife habitat and high scenic quality overall: in conjunction with positive drainage and soil texture attributes presents potential opportunities for appreciation of the high scientific, interpretive and educational values inherent to these areas.

d) Size

The benefits to the land base derived from woody vegetation associated with woodlands of large size include increased ecological carrying capacity, higher habitat value, greater species diversity and greater adaptability to disturbances. Small and fragmented areas of preservation contribute far less and minimal benefits to the overall ecology of the land base.

e) Linkages

Woody vegetation is more valuable if it contributes ecologically to maintenance of a connected and continuous natural system beyond its boundaries.

f) Level of Disturbance

Disturbed areas of vegetation are less likely to contain interesting or rare plant species or communities.

g) Configuration

Groups of woody vegetation that are rectilinear with straighter edges are more easily assimilated into final development schemes. Fragmented or irregular vegetation edges do not provide a good opportunity for complete area protection.

h) Uniqueness

Vegetation is relatively more valuable if it is not commonly associated with the urban landscape of Southern Ontario today.

i) Stage of Life Cycle

Mature and stable woody vegetation are ranked higher than young and/or successional vegetation for preservation purposes.

j) Biological Health and Condition

Evidence of disease, dieback or environmental stresses warrants a rating of low biological health. Sunscald, frost cracking, windthrow, presence of invasive alien species, soil contamination, pest infestations and physical damage are also phenomena which influence the biological health of a vegetation community.

k) Landscape Value

Long-lived, large stature, indigenous tree species, which provide a substantial leaf area within their crown, will provide greater ecological benefits over a longer period of time.

Preservation priority ratings have been assigned on the basis of the following criteria. Existing vegetation is further assessed as to whether it can be practically and successfully retained under

the development scenario, site engineering reality and municipally approved plans for the subject lands.

Preservation Priority	Criteria
HIGH – potentially high opportunities for preservation. Trees may be included in final design.	• mature or stable stage of life cycle • vegetation is unique in urban landscape • high adaptability to disturbances • good or better biological health and condition • potential or existing wildlife and vegetation linkage function • high landscape value • a vital ecological function
Moderate - possible opportunity for individual tree preservation, where no grading and layout constraints are present.	• moderate ecological function • intermediate age or stabilizing stage of life cycle • vegetation moderately unique in urban landscape • moderate unit adaptability to disturbances • fair to good biological health • moderate wildlife and vegetation linkage function • moderate landscape value
LOW – little or no opportunity for successful preservation and no constraints to design	• limited ecological function • young or successional stage of life cycle • vegetation common in urban landscape • low unit adaptability to disturbances • poor biological health or damaged condition • limited wildlife and vegetation linkage function • low landscape value

Woody vegetation units on the subject property which have been assigned a medium preservation priority will be reviewed and considered for individual tree specimen inclusion into the subdivision design where practical and feasible under the engineered development scenario for the lands. Such areas are suggested to be a part of a future designated tree preservation zones coordinated with planning and engineering designs.

2.4 Woody Vegetation Unit Types

The following describes the key used on the Woody Vegetation Assessment/Tree Preservation Plan – Stage 1 to reference various Woody Vegetation units with the Woody Vegetation unit summaries found in Appendix i).

Woody Vegetation Type	- abbreviation of full name
Woody Vegetation Unit Number	- corresponds to woodland unit number in Woody Vegetation Unit Summaries
Preservation Priority	- H = High - M = Medium - L = Low

YW – 01 – M

Residential Plantings (RP)

- Various stages of life cycle, often young stage but may include mature specimens
- Species mixture variable but increasingly species indigenous to the Great Lakes-St. Lawrence Forest Region are found
- Well-spaced typically
- Limited wildlife habitat value
- High scenic quality often
- Often well maintained

Naturalized Hedgerow (NH)

- Typically well drained agricultural tableland location
- Variety of usually introduced species of low landscape value typically
- Little woody understorey
- Predominantly successional, often invasive alien species
- Various stages of growth in strips between cultivated fields
- Low species diversity in narrow single row typically

Coniferous Plantation

- Single row of high landscape value coniferous tree plantings
- Non-native species typically
- High scenic quality
- Often well maintained

Deciduous Woodland (DW)

- Mid-age mature hardwood species typically
- Successional species around edges
- Species indigenous to Great-Lakes St. Lawrence Forest Region, but isolated invasive alien species present along edges
- Well drained
- Densely spaced even-aged trees with intense competition
- Forest floor covered with woody matter

Riparian (RIP)

- Young to mid-stage of life cycle typically
- Species mixture indigenous to the Great-Lakes St. Lawrence Forest Region, but many invasive alien species present
- Sporadic, well-spaced tree growth
- Wet mesic or imperfectly drained soils
- Species tolerant of high soil moisture present
- Dense shrub colonies may be present

2.5 Woody Vegetation Unit Analysis

Note: This section is to be read in conjunction with the Woody Vegetation Assessment/Tree Preservation Plan- Stage 1 drawing WA-1 attached with this report. The woody vegetation within and immediately adjacent to the project site the study area falls within three broad categories as follows:

- Successional growth associated with hedgerows and watercourses
- mature upland deciduous woodland
- landscape plantings associated with former residences.

A total of **twelve** Woody Vegetation Units were identified, assigned and classified into **five** different woodland unit types as follows:

Woodland Unit Type	**Quantity**	**Woodland Unit Numbers**
NH - Natural Hedgerow	7	01, 03, 05, 07, 08, 11, 12
DW - Deciduous Woodland	1	06
RIP - Riparian	1	04
CP - Coniferous Plantation	1	09
RP - Residential Plantings	2	02, 10

The woody vegetation communities that have been field assessed are described in detail in Appendix i) Woody Vegetation Unit Summaries. The preservation priority ratings, as depicted on the plan, follow criteria described in section 2.3.

There are three high landscape value vegetation units within the property, namely units DW-06, CP-09 and RP-10. Eight Woody Vegetation Units have been assigned Medium Preservation Priority based on the presence of individual trees of high landscape value.

2.5.1 Woody Vegetation Summary

Of the twelve designated woody vegetation units within the property boundaries all units with the exception of unit RIP-04 include some trees of high landscape value. The high landscape value trees within the hedgerow units 03, 05, 08,11 and 12 are predominantly located off property. These trees average 14-25 cm and up to 1.2 metres in trunk diameter. Tree heights range from an average of 4-7 metres up to 20 metres.

Within the two residential planting units 02 and 10 (off site) there are some large landscape specimens including Norway Spruce, Black Walnut and occasional Bur Oaks and White Oaks of high landscape value present. Five Colorado Spruce planted off site in unit CP-09 are well maintained and of high preservation priority.

Trees within unit RIP-04 range in trunk diameter from an average 3-6 cm, up to 16cm and up to 15 metres in height. They are few in number and include low landscape value tree species such as European Buckthorn, Manitoba Maple and White Ash.

The majority of the trees found within the overall project site are successional species which are found in all units but are predominantly located within the hedgerows and adjacent to watercourses. The tree species found in these areas in declining order of frequency include the following; European Buckthorn, Manitoba Maple, Hawthorns, Honeylocust, Basswood, White Ash, Bur Oak, White Oak, Crabapple, Chokecherry, Silver Maple, Paper Birch, American Elm, and Black Walnut and Jack Pine.

The remaining successional vegetation within the project site is found within the two small Residential Planting Units RP-02 and RP-10.

The large Deciduous Woodland (Unit DW-06) located centrally along the south property boundary is designated for complete area protection including buffer on the Tertiary Plan Concept. This unit includes several semi-mature to mature hardwoods including Shagbark Hickory, White and Red Oak and Eastern Hop-hornbeam with good forest structure. The unit provides valuable shelter and habitat for birds and small mammals and has high scenic quality.

There were no rare, endangered, threatened or species of special concern (Species at Risk) within the project area study boundaries.

At Stage 2 of the Tree Preservation Process any trees of high landscape value near adjacent properties along the edges of property or within Environmental lands be tagged and inventoried for tree preservation consideration. These trees are denoted with a clear graphic on the Woody Vegetation Assessment/Tree Preservation Plan Stage 1 (refer to plan WA-1) and will be protected with continuous tree protection fencing and signage (refer to Town of Milton standard. No P-1, detail 1/TP-2).

2.6 Woody Vegetation Unit Assessment

The following table summarizes the preservation priority rating distribution:

Preservation Priority Rating	Low	Medium	High	Total
Quantity of Woodland Units	1	8	3	12
Percentage of Woodland Units	8%	67%	25%	100%

The few individual tableland tree species within the project site are in good biological health and condition. This vegetation is not classified as a high priority for preservation due to low species quality and conflicts with proposed plan area development.

3.0 Management and Monitoring Plan

3.1 Tree Protection Management Schedule

3.1.1 Pre-Construction Phase

Prior to commencement of construction the following tasks should be performed by a qualified tree care practitioner under on site supervision of the Landscape Architect/Certified Arborist in order to preserve the health and safety of all existing woody vegetation to be preserved:

- Installation of Tree Preservation Fencing.
- Removal of any man-made debris.
- Remove any existing deadwood and hangers in tree crowns from all trees to be preserved.
- Remove all dead and prior pruning stubs, dispose of off site and chip.
- All cut woody debris shall be chipped, and wood chips re-used as surface mulch onsite.
- All woody vegetation to be preserved will require protection with continuous tree preservation fencing per drawing WA-1 during entire construction period.

- No site construction works should commence prior to obtaining approval of the preservation works from the Town of Milton.

In addition to the required arboricultural tasks noted above the following short and long term best management practices are suggested to be performed.

3.1.2 Short Term Management – Construction Period

- Debris removal during construction period.
- Should excessive dust accumulate on foliage during construction tree foliage should be sprayed with water if necessary, should there be a lack of rainfall.
- Tree limb pruning including selective removal of any dead, diseased and crossing limbs and/or broken and hanging limbs should be performed prior to construction to eliminate any risk of limb failure.
- All existing water-sprouts and basal shoots should be removed from all on site trees to remain and disposed of off site.
- All pruning shall comply with I.S.A Tree Pruning Guidelines and the ANSI A300 pruning standards.
- No flush cuts of stubs, ripping or tearing of bark is permitted.
- Pruned branch structure shall leave crown of trees in symmetrical balance.
- No more than 25% of tree canopy shall be removed at any pruning cycle.

3.1.3 Long Term Management – Following Construction

- Tree Preservation fencing shall be carefully removed.
- A review at project completion by the project Landscape Architect/Certified Arborist is recommended to identify any potentially hazardous limbs to be pruned as required.
- Removal of any invasive alien tree saplings or aggressive plants such as Garlic Mustard or Dog Strangling Vine and disposal off site.
- Removal of all adventitious suckers and basal shoots from all trees to be preserved.

In order to limit potential disturbances to existing vegetation to be protected, specific design features should be applied. In order to minimize impacts on trees to be protected, it is recommended that the ground surface within the TPZ zones remain in an undisturbed state.

It is recommended that any future landscape plantings include a range of native tree, shrub, and perennial species for enhancement of local biodiversity values.

It is recommended that monitoring of the vegetation to be preserved and planted shall be undertaken for approximately two years for plans of Subdivision after preliminary Acceptance by the Town of Milton.

3.2 Controls During Construction

During construction, run-off and siltation from construction activities should be controlled through the use of Tree Protection fencing installation to effectively reduce sedimentation impacts on the existing vegetation protected and on local downstream ecosystems. With the exception of controlled access for trees to be removed or pruned, all construction vehicle movement will be limited to areas outside of Tree Protection Zones (TPZ'S).

Potentially hazardous, diseased or damaged limbs shall be pruned from dripline edge under on site supervision of the project the project Landscape Architect/Certified Arborist.

Tree Protection fencing must be maintained in good repair for the entire duration of work until construction is complete.

During construction, any excavation or activity that will affect the critical rooting zones of any tree shall be monitored by the Landscape Architect/Certified Arborist. Should roots be injured or cut, the arborist shall prune or cut flush the injured root with sharp implements. All cut and/or exposed roots shall be backfilled immediately to prevent desiccation.

No fill or disturbance to any vegetation shall occur within the TPZ'S during construction. All hoarding shall be removed following total completion of construction.

Should any trees to be protected be damaged during construction the project consulting arborist should be immediately notified. All recommended mitigative works shall be completed immediately at the contractor's expense.

Any man-made debris and/or construction debris that collects and /or is dumped in the TPZ's should be removed immediately.

All arboricultural works shall be performed by a qualified tree care practitioner under on site supervision of the Landscape Architect/Certified Arborist to Town of Milton approval.

3.3 Post-Construction Inspection

Following completion of construction, a site inspection shall be completed and required post construction maintenance work including the following will be identified as follows:

- Any dead, damaged, diseased or branches damaged by machinery will require removal.
- Any damaged bark shall be carefully traced back to living tissue with a sharp knife.
- Wound dressings are not to be applied.
- Upon the approval of the Town of Milton all Tree Protection fencing may be removed.

3.4 Program Monitoring

During critical phases of construction, such as excavation or other activity adjacent to TPZs, execution of the construction management measures in the field will be monitored and documented by the Landscape Architect/Certified Arborist. A regular meeting schedule with representatives from project consultants and owner's representative in attendance will be formulated to ensure that the Tree Protection program is being followed and Tree Protection fencing is maintained.

If required, a Certified Arborist shall be retained to complete all required removals and/or pruning of trees that are dangerous, diseased, dying or pose a risk to adjacent residents prior to acceptance of the site.

4.0 Conclusions

In review of Section 2.0 Site Assessment and Analysis along with relevant regulatory background information the following conclusions are derived:

1. The subject Tree Protection Zones (TPZ) are predominantly vegetated with non-native tree species which are commonly found in the Great Lakes- St. Lawrence Forest Region. The subject trees have some value due to their scenic quality, ecological functions, carbon sequestering, microclimate benefits, wildlife staging and habitat provision and moderate landscape value species composition.

2. Water purification functions are performed by the woody vegetation within the study area which indirectly contributes to the healthy maintenance of the 16 Mile Creek system, further downstream.

3. At the time of inspection areas within future Tree Protection Zones were found to be relatively free of construction related or other man-made debris.

4. The majority of trees within subdivision boundaries are proposed to be removed due to grading and layout conflicts with proposed subdivision development.

5. Trees adjacent shared boundaries of adjacent properties and within units DW-06, RP-02, NH-07, CP-09 and RP-10 will be protected for further consideration for preservation during Stage 2 of the tree preservation process.

6. There are no rare, endangered, threatened species or species of special concern (Species at Risk) within the project study area boundaries.

7. The vast majority of the woody vegetation found within the project site, with the exception of unit DW-06 to be protected, is of low landscape value, at a young stage of life cycle, successional and often invasive alien species of low interpretive and scenic value.

5.0 Recommendations

In order to minimize potential construction implementation impacts of the proposed site construction on the existing woody vegetation to be preserved, the following mitigating procedures are recommended:

1. An arboricultural field review shall be conducted prior to site work completion to identify any potential hazardous trees, diseased, damaged, crossing or dead limbs for removal.

2. All recommended Tree Preservation management procedures should be performed by a qualified tree care practitioner. (i.e. I.S.A. Certified Arborist, Registered Professional Forester or approved equal) under on site supervision of the project Landscape Architect/Certified Arborist. All proposed work within the TPZ's will be subject to the Town's review and approval.

3. Tree Preservation fencing shall be installed around all trees to be preserved following plan WA-1. Tree Protection fencing locations shall be verified and certified by Landscape Architect/Certified Arborist prior to any commencement of site construction activity.

4. Any grading of areas adjacent to the TPZ's shall address the need for directing drainage flows towards existing vegetation to be preserved in order to maintain existing soil moisture regimes in the TPZ's.

5. All man-made and construction debris within the TPZ's, shall be removed and disposed of off site. Prevention of debris deposition and dispersal throughout the site through the use of waste and recycling receptacles on site is strongly recommended.

6. Trees protected shall be well watered following mulching.

7. No site works are to be undertaken within the TPZ's without prior approval from the Town of Milton.

8. All construction access routes shall be limited to designated and approved routes outside of TPZ's.

9. No existing trees are recommended to be subject to fertilizer application at this time.

10. There is limited opportunity outside of designated Environmental Lands to preserve existing trees within the proposed subdivision boundaries therefore it is recommended that the majority of existing trees on site be removed per drawing WA-1.

11. During Stage 2 of the Tree Preservation process all high landscape existing trees over 15cm Dbh will be tagged, tied-in by survey and inventoried to allow for complete and accurate inventory and consideration for preservation per drawing WA-1.

6.0 Signatory Page

This is to certify that this report has been prepared by Danny Beauchesne, I.S.A. Certified Arborist.

I verify that the information provided in this report is true, accurate and has been provided to the best of my ability.

Signature

March 27, 2025
Date

Limitations of the Report

1) Please note that any risk management related recommendations in this report are limited to the condition of the tree(s) and site at the time of inspection.

2) Only trees noted on Appendix 1) Tree Survey/Arborist's Report were assessed.

3) The time frame for re-inspection of trees for risk management purposes is one year from inventory date.

4) Any tree, whether it has visible weakness or not, will fail if forces applied exceeds strength of the tree or its parts.

APPENDIX i)
Woody Vegetation Unit Summaries

Woodland No: NH-01

Woodland Type: Naturalized Hedgerow

Overstorey Composition and Species Abundance:

- White Ash	A
- European Buckthorn	A
- American Elm	S
- Black Walnut	S
- Bur Oak	S
- Crabapple	S
- Chokecherry	S
- Hawthorns	S

Woody Shrubs and Vines:
- Wild Grape
- Red-Osier Dogwood

Overstorey Tree Diameter (centimetres):
Average 5-8 cm , up to 80cm Dbh

Overstorey Tree Height (metres):
Average 4-6 cm, up to 18 m height

History of Disturbances and Comments:

1. Moderately long, narrow, discontinuously vegetated hedgerow is characterized by moderate species diversity, isolated specimens of high landscape value, low to moderate scenic quality and some invasive alien tree species present.
2. Isolated White Ash (dead) has been cut and left in woody debris piles
3. Unit abuts soya bean cultivation to west

Abbreviations:

D - Dominant (51 - 100% spp. comp.)

A - Abundant (21-50% spp. comp.)

F - Frequent (11-20% spp. comp.)

O - Occasional (5 - 10% spp. comp.)

S - Scarce (less than 5% spp. comp.)

Woodland No: RP-02

Woodland Type: Residential Plantings

Overstorey Composition and Species Abundance:

- Manitoba Maple	D
- Black Walnut	A
- European Buckthorn	O
- White Ash	S
- Mountbatten Juniper	S

Woody Shrubs and Vines:

- Wild Grape
- Tatarian Honeysuckle
- Privet

Overstorey Tree Diameter (centimetres):

Average 6-9 cm , up to 18cm Dbh

Overstorey Tree Height (metres):

Average 3-5cm, up to 8 m height

History of Disturbances and Comments:

1. Remnant landscape plantings associated with former farm residence
2. Unit is characterized by low species diversity, isolated specimens of high landscape value, trees in fair to good biological health and condition and low to moderate scenic quality
3. Unit has not been subject to any maintenance of recent

Abbreviations:

D - Dominant (51 - 100% spp. comp.)

A - Abundant (21-50% spp. comp.)

F - Frequent (11-20% spp. comp.)

O - Occasional (5 - 10% spp. comp.)

S - Scarce (less than 5% spp. comp.)

Woodland No: NH-03

Woodland Type: Naturalized Hedgerow

Overstorey Composition and Species Abundance:

- European Buckthorn	A
- Black Walnut	A
- Honeylocust	A
- English Walnut	S
- Hawthorn	S
- Silver Maple	S
- White Ash	S

Woody Shrubs and Vines:

- Wild Rose
- Privet
- Wild grape
- Tatarian Honeysuckle
- European Spindletree

Overstorey Tree Diameter (centimetres):
Average 25-30 cm , up to 65cm Dbh

Overstorey Tree Height (metres):
Average 11-13cm, up to 17 m height

History of Disturbances and Comments:

1. Relatively short, continuously vegetated hedgerow is characterized by moderate species diversity, several trees of high landscape value, trees in good biological health and condition and moderate to high scenic value
2. Several mature native Honeylocusts have been planted within hedgerow as barriers (thorns).
3. Unit has not been subject to any maintenance of recent

Abbreviations:

D - Dominant (51 - 100% spp. comp.)

A - Abundant (21-50% spp. comp.)

F - Frequent (11-20% spp. comp.)

O - Occasional (5 - 10% spp. comp.)

S - Scarce (less than 5% spp. comp.)

Woodland No: RIP-04

Woodland Type: Riparian

Overstorey Composition and Species Abundance:

- European Buckthorn	D
- White Ash	O
- Manitoba Maple	S

Woody Shrubs and Vines:
- Wild Grape
- no significant woody understorey

Overstorey Tree Diameter (centimetres):
Average 3-6 cm , up to 16cm Dbh

Overstorey Tree Height (metres):
Average 5-8 cm, up to 15 m height

History of Disturbances and Comments:

1. Short, discontinuously vegetated row of mainly invasive alien tree species follows minor drainage ditch
2. Unit is characterized by low species diversity, trees in fair to good biological health and condition, low scenic quality and no specimens of high landscape value present

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Abbreviations:

D - Dominant (51 - 100% spp. comp.)

A - Abundant (21-50% spp. comp.)

F - Frequent (11-20% spp. comp.)

O - Occasional (5 - 10% spp. comp.)

S - Scarce (less than 5% spp. comp.)

Woodland No: NH-05

Woodland Type: Naturalized Hedgerow

Overstorey Composition and Species Abundance:

- European Buckthorn	A
- Manitoba Maple	O
- White Ash	O
- Crabapple	S
- Hawthorns	S

Woody Shrubs and Vines:
- Wild Rose
- Tatarian Honeysuckle

Overstorey Tree Diameter (centimetres):
Average 11-14 cm , up to 18cm Dbh

Overstorey Tree Height (metres):
Average 8-10 cm, up to 14 m height

History of Disturbances and Comments:

1. Relatively long hedgerow is increasingly discontinuously vegetated towards the west.
2. Unit is characterized by low species diversity, low to moderate scenic quality, trees in fair to good biological health and condition and no trees of high landscape value present.
3. Unit straddles remnant farm wire fence. Soya bean cultivation abuts north and corn cultivation to south.

Abbreviations:

D - Dominant (51 - 100% spp. comp.)

A - Abundant (21-50% spp. comp.)

F - Frequent (11-20% spp. comp.)

O - Occasional (5 - 10% spp. comp.)

S - Scarce (less than 5% spp. comp.)

Woodland No: DW-06

Woodland Type: Deciduous Woodland

Overstorey Composition and Species Abundance:

- Shagbark Hickory	D
- Basswood	O
- Eastern Hop-hornbeam	O
- White Oak	S
- Bur Oak	S
- Red Oak	S
- American Elm	
- Crabapple	S
- Hawthorn	S

Woody Shrubs and Vines:

- Black Raspberry
- Tatarian Honeysuckle
- Wild Rose

Overstorey Tree Diameter (centimetres):

Average 16-18 cm , up to 85cm Dbh

Overstorey Tree Height (metres):

Average 10-13 m, up to 20 m height

History of Disturbances and Comments:

1. Large tableland woodland is characterized by moderate species diversity, no coniferous species present, several high landscape value tree specimens, trees in good biological health and condition and high scenic quality.
2. Unit extends to east along south boundary for 30 metres.
3. Occasional standing dead tree snags and woody debris on forest floor provide wildlife habitat.
4. Small low depression and pool at southwest corner of unit.
5. Raised wooden roosting structures (5) installed to west of unit.

Abbreviations:

D - Dominant (51 - 100% spp. comp.)

A - Abundant (21-50% spp. comp.)

F - Frequent (11-20% spp. comp.)

O - Occasional (5 - 10% spp. comp.)

S - Scarce (less than 5% spp. comp.)

Woodland No: NH-07

Woodland Type: Naturalized Hedgerow

Overstorey Composition and Species Abundance:

- Bur Oak	A
- Shagbark Hickory	O
- European Buckthorn	O
- Hawthorns	O
- Crabapple	S

Woody Shrubs and Vines:
- Wild Grape
- no significant woody understorey

Overstorey Tree Diameter (centimetres):
Average 12-15 cm , up to 70cm Dbh

Overstorey Tree Height (metres):
Average 4-6 m, up to 18 m height

History of Disturbances and Comments:

1. Short, discontinuously vegetated hedgerow is characterized by low species diversity, trees in fair to good biological health and condition, moderate scenic quality and isolated trees of high landscape value.
2. Unit abuts soya bean cultivation to west.

Abbreviations:

D - Dominant (51 - 100% spp. comp.)

A - Abundant (21-50% spp. comp.)

F - Frequent (11-20% spp. comp.)

O - Occasional (5 - 10% spp. comp.)

S - Scarce (less than 5% spp. comp.)

Woodland No: NH-08

Woodland Type: Naturalized Hedgerow

Overstorey Composition and Species Abundance:

- European Buckthorn	A	-Manitoba Maple	S
- Bur Oak	O	- Hawthorns	S
- American Elm	O	- Crabapple	S
- Slippery Elm	S	- Jack Pine	S
- Silver Maple	S	- White Oak	S

Woody Shrubs and Vines:

- Wayfairing Tree
- European Spindletree
- Upright Ornamental Juniper

Overstorey Tree Diameter (centimetres):

Average 14-16 cm , up to 1.3cm Dbh

Overstorey Tree Height (metres):

Average 9-11 m, up to 20 m height

History of Disturbances and Comments:

1. Long, discontinuously vegetated unit is characterized by high species diversity, low to moderate scenic quality, trees in fair to good biological health and condition and isolated tree specimens of high landscape value.
2. Unit straddles remnant farm wire fence. Soya bean cultivation to north and corn to south.
3. Gypsy moth invasion on Oaks in unit.

Abbreviations:

D - Dominant (51 - 100% spp. comp.)

A - Abundant (21-50% spp. comp.)

F - Frequent (11-20% spp. comp.)

O - Occasional (5 - 10% spp. comp.)

S - Scarce (less than 5% spp. comp.)

Woodland No: CP-09

Woodland Type: Coniferous Plantation

Overstorey Composition and Species Abundance:

- Colorado Spruce D

Woody Shrubs and Vines:
- Red-osier dogwood
- Wild Grape

Overstorey Tree Diameter (centimetres):
Average 12-14 cm , up to 16cm Dbh

Overstorey Tree Height (metres):
Average 4-6 m, up to 8 m height

History of Disturbances and Comments:

1. Four individual planted conifers in R.O.W. are in good biological health and condition.
2. Trees have high landscape value.

Abbreviations:

D - Dominant (51 - 100% spp. comp.)
A - Abundant (21-50% spp. comp.)
F - Frequent (11-20% spp. comp.)
O - Occasional (5 - 10% spp. comp.)
S - Scarce (less than 5% spp. comp.)

Woodland No: RP-10

Woodland Type: Residential Planting

Overstorey Composition and Species Abundance:

- Manitoba Maple	A	- White Willows	S
- European Buckthorn	A	- Crabapple	S
- Norway Spruce	O	- Silver Maple	S
- Bur Oak	S	- Amur Maple	S
- Common Horsechestnut	S	- White Oak	S

Woody Shrubs and Vines:

- Upright Ornamental Juniper
- Common Lilac
- Tatarian Honeysuckle

Overstorey Tree Diameter (centimetres):

Average 25-30 cm , up to 1.4 m Dbh

Overstorey Tree Height (metres):

Average 11-14 m, up to 17 m height

History of Disturbances and Comments:

1. Off site residential plantings in fair to good biological health and condition abut abandoned remnant residence
2. Unit is characterized by moderate scenic quality, trees in fair to good biological health and condition, isolated tree specimens of high landscape value.
3. Unit has not been subject to any maintenance of recent

Abbreviations:

D - Dominant (51 - 100% spp. comp.)

A - Abundant (21-50% spp. comp.)

F - Frequent (11-20% spp. comp.)

O - Occasional (5 - 10% spp. comp.)

S - Scarce (less than 5% spp. comp.)

Woodland No: NH-11

Woodland Type: Naturalized Hedgerow

Overstorey Composition and Species Abundance:

- Blue Colorado Spruce A

Woody Shrubs and Vines:
- Wayfaring tree
- Upright Ornamental Juniper

Overstorey Tree Diameter (centimetres):
Average 11-13 cm , up to 15 cm Dbh

Overstorey Tree Height (metres):
Average 8-10, up to 12 m height

History of Disturbances and Comments:

1. Discontinuously vegetated, short hedgerow is characterized by low species diversity, isolated tree specimens of high landscape value, trees in good biological health and condition and low to moderate scenic quality.

Abbreviations:

D - Dominant (51 - 100% spp. comp.)

A - Abundant (21-50% spp. comp.)

F - Frequent (11-20% spp. comp.)

O - Occasional (5 - 10% spp. comp.)

S - Scarce (less than 5% spp. comp.)

Woodland No: NH-12

Woodland Type: Naturalized Hedgerow

Overstorey Composition and Species Abundance:

- Basswood	A
- Paper Birch	S
- Silver Maple	S
- Thornless Honeylocust	S

Woody Shrubs and Vines:
- no significant woody understorey

Overstorey Tree Diameter (centimetres):
Average 12-14 cm , up to 30 cm Dbh

Overstorey Tree Height (metres):
Average 3-5, up to 10 m height

History of Disturbances and Comments:

1. Short, discontinuously vegetated hedgerow is characterized by low species diversity, trees in fair to good biological health and condition, low scenic quality and isolated specimens of moderate to high landscape value.

Abbreviations:

D - Dominant (51 - 100% spp. comp.)

A - Abundant (21-50% spp. comp.)

F - Frequent (11-20% spp. comp.)

O - Occasional (5 - 10% spp. comp.)

S - Scarce (less than 5% spp. comp.)

APPENDIX ii)
References

APPENDIX ii

REFERENCES

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Matheny, N.P. and Clark, J.R., A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas, International Society of Arboriculture, Urbana, Illinois, 1994

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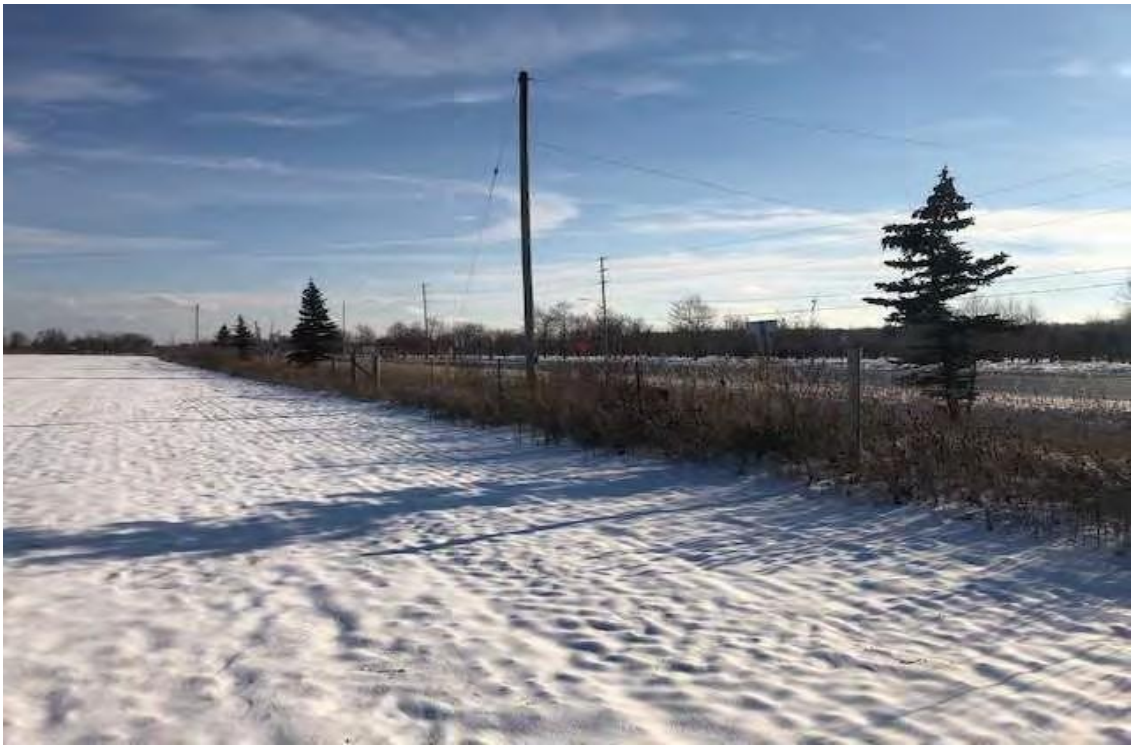
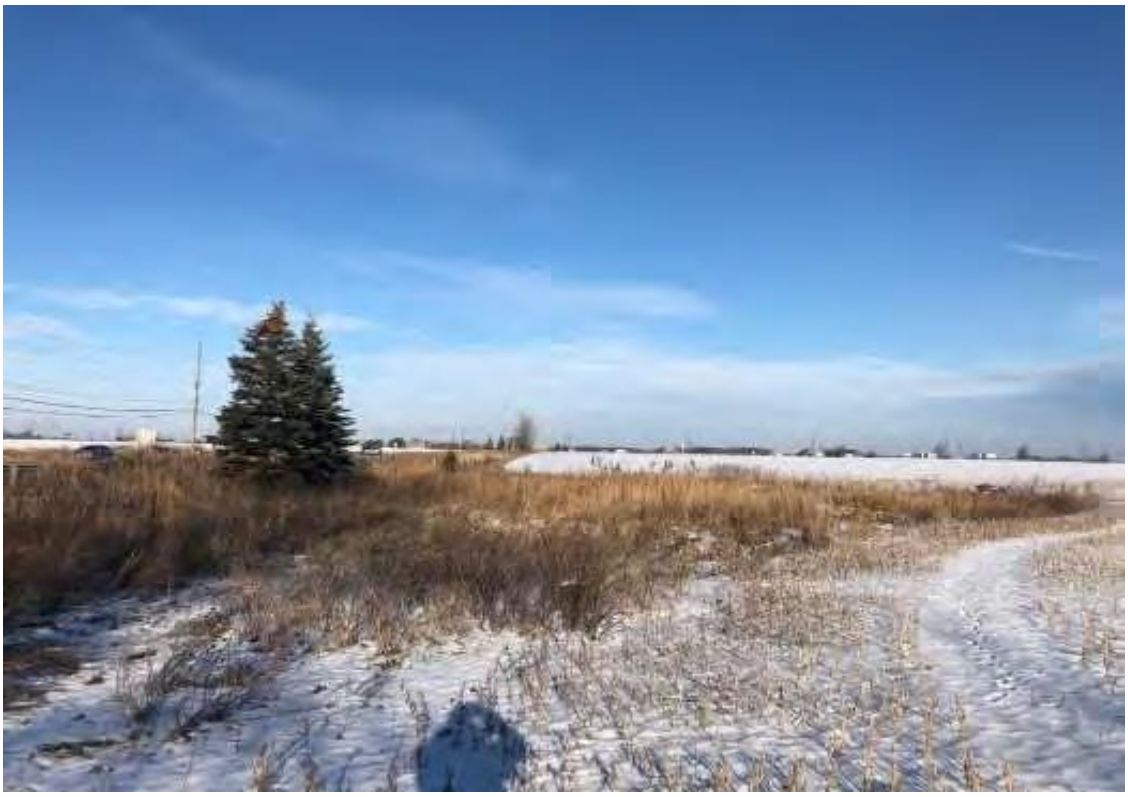
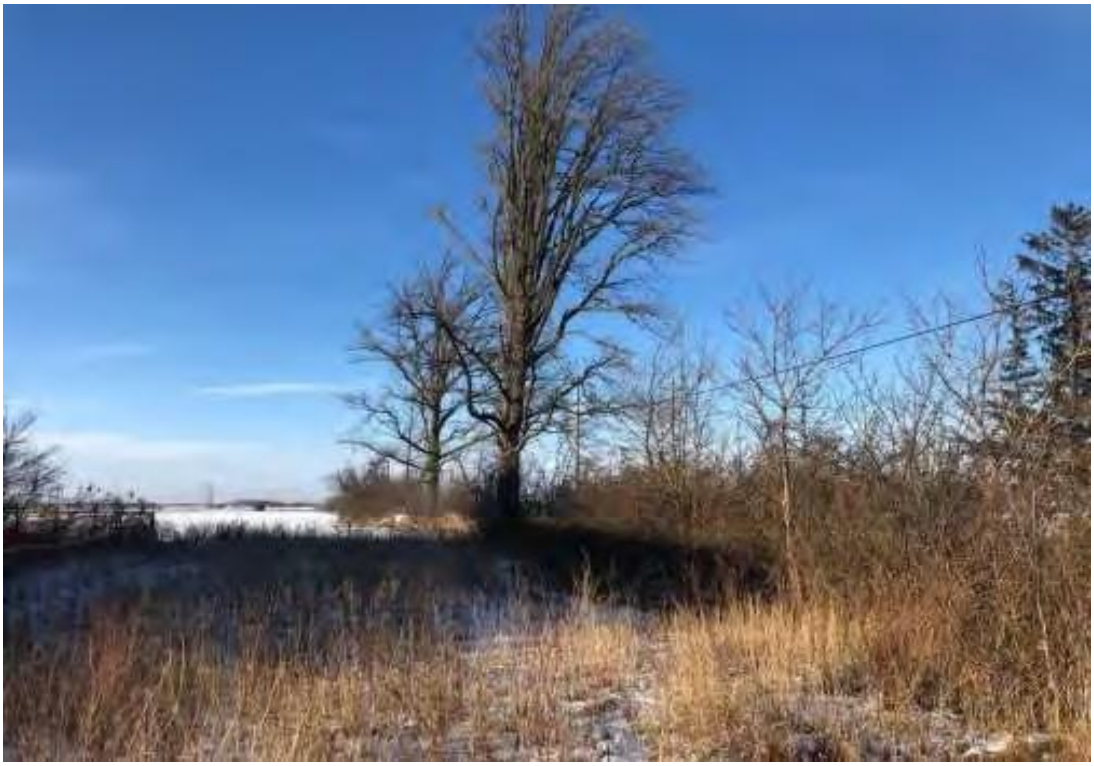
APPENDIX iii)
Tree Photographs



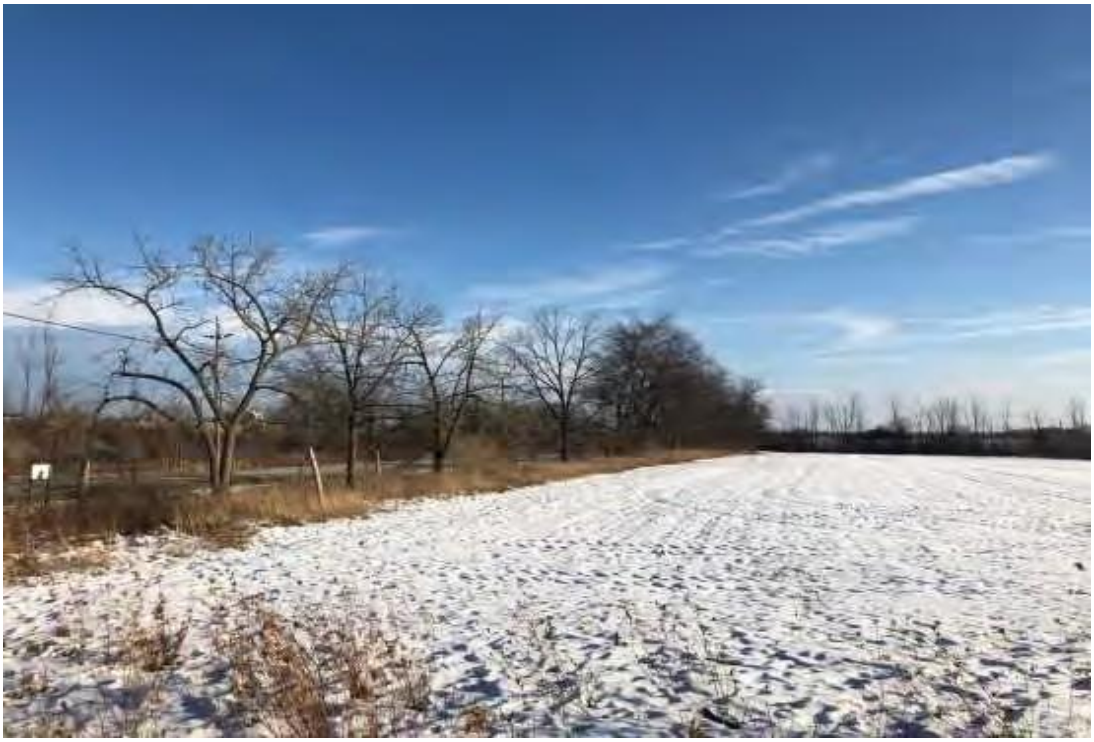
Photograph No. 1 – View south towards unit CP-09



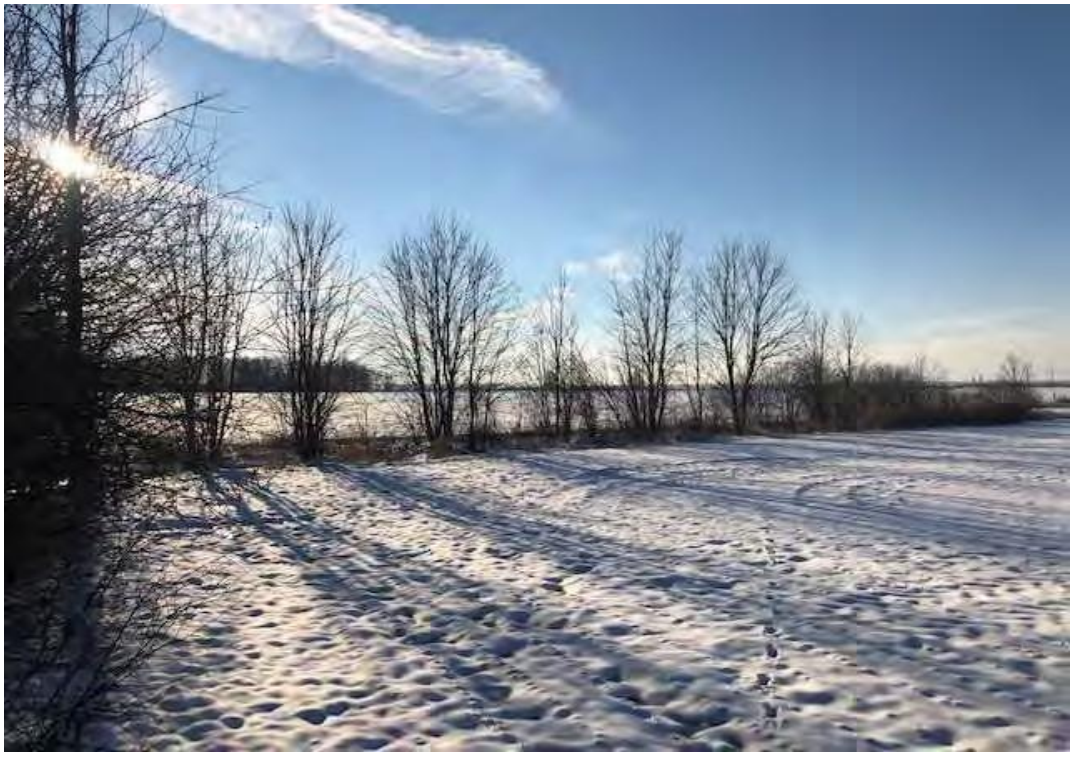
Photograph No. 2 -View east towards units NH 11 and NH-12



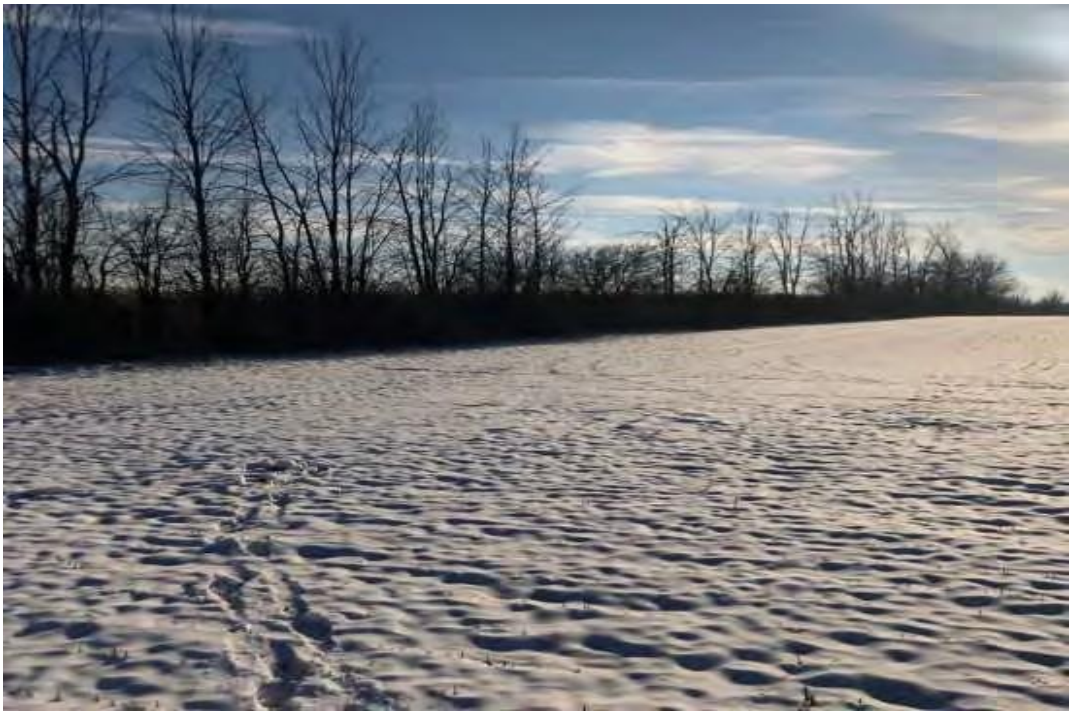
Photograph No. 3 - View north towards unit NH-01



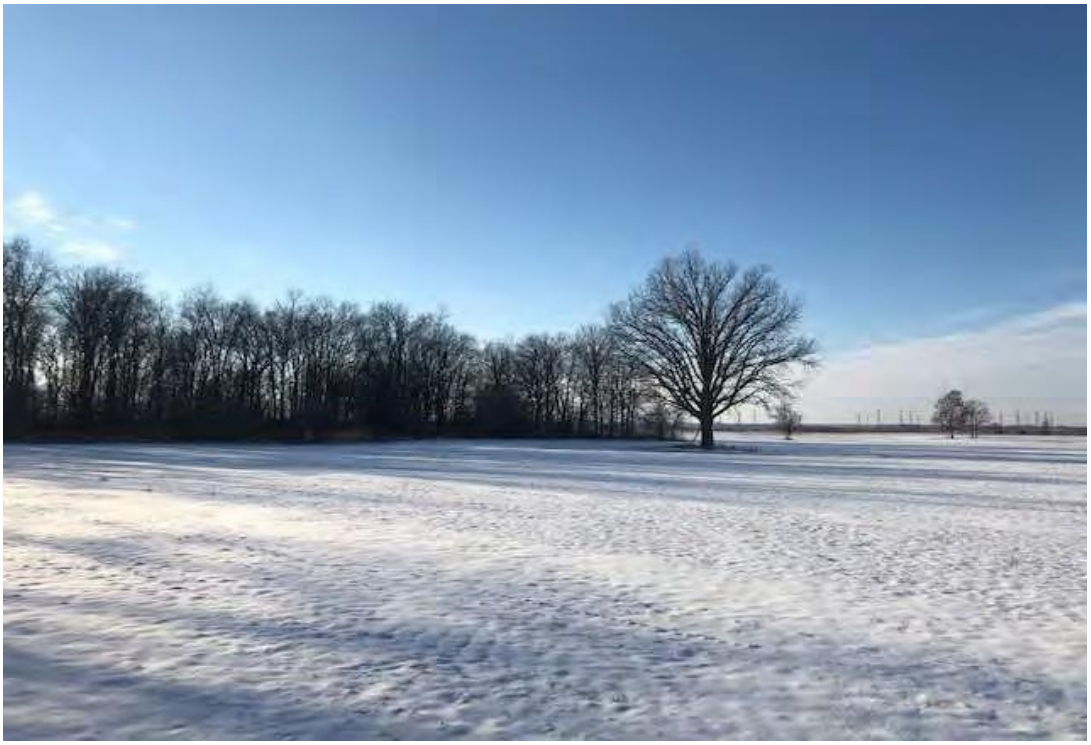
Photograph No.4 -View south towards Units NH-03 and NH-05



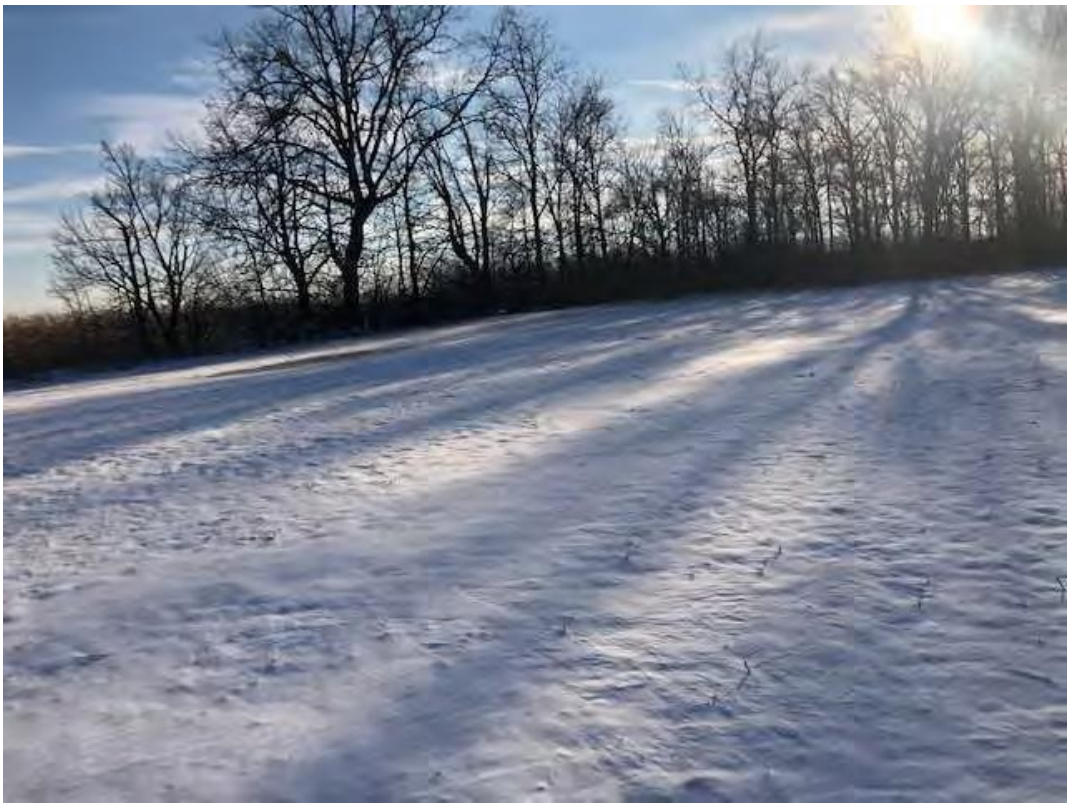
Photograph No. 5 -View west towards Unit RIP-04



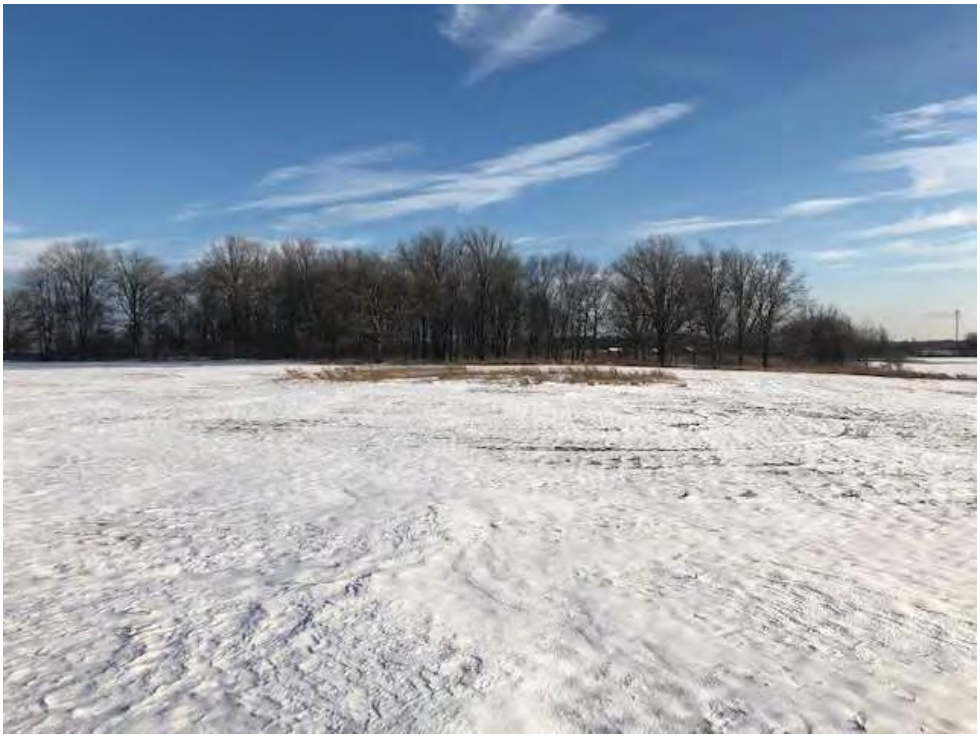
Photograph No.6 – View east towards unit NH-05



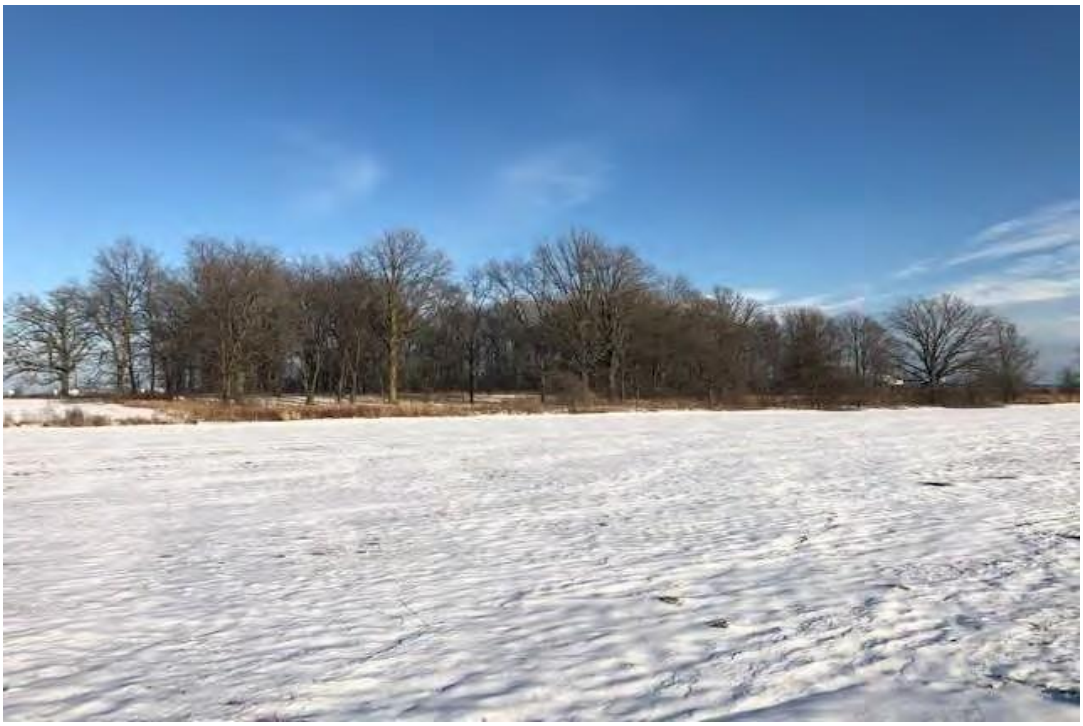
Photograph No. 7- View north towards unit DW-06



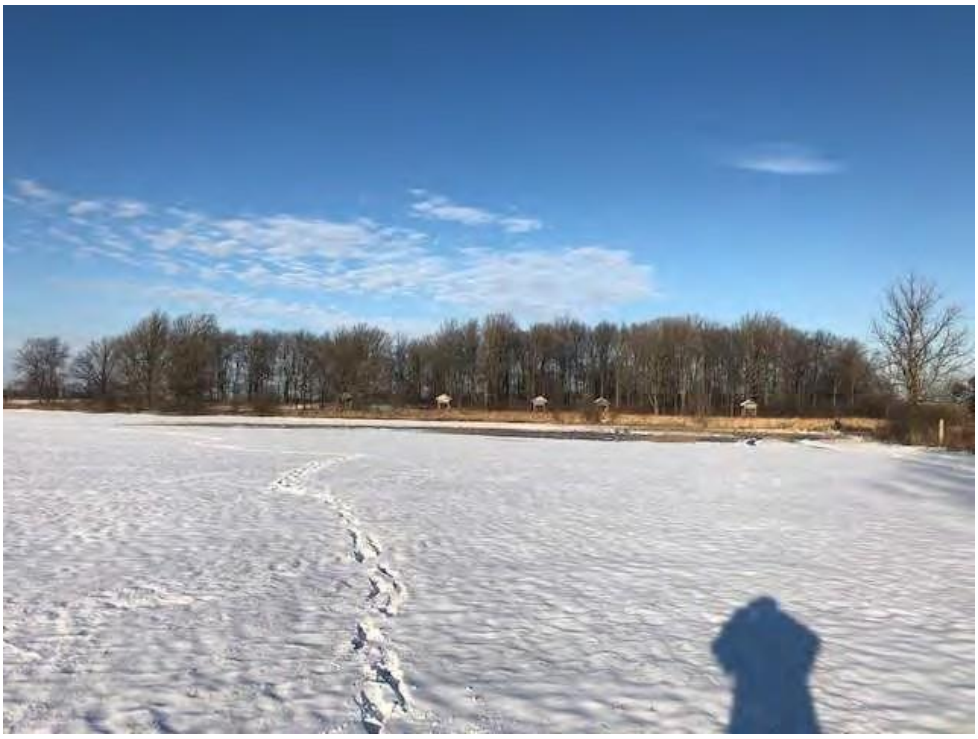
Photograph No.8 – View west towards unit DW-06



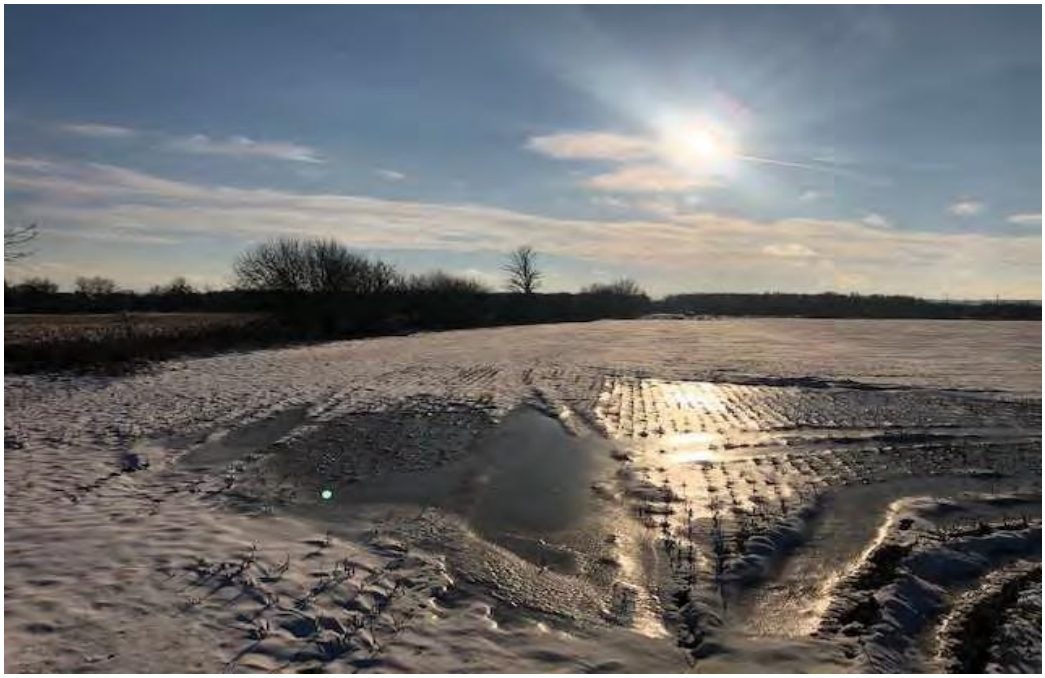
Photograph No.9 – View south towards unit DW-06



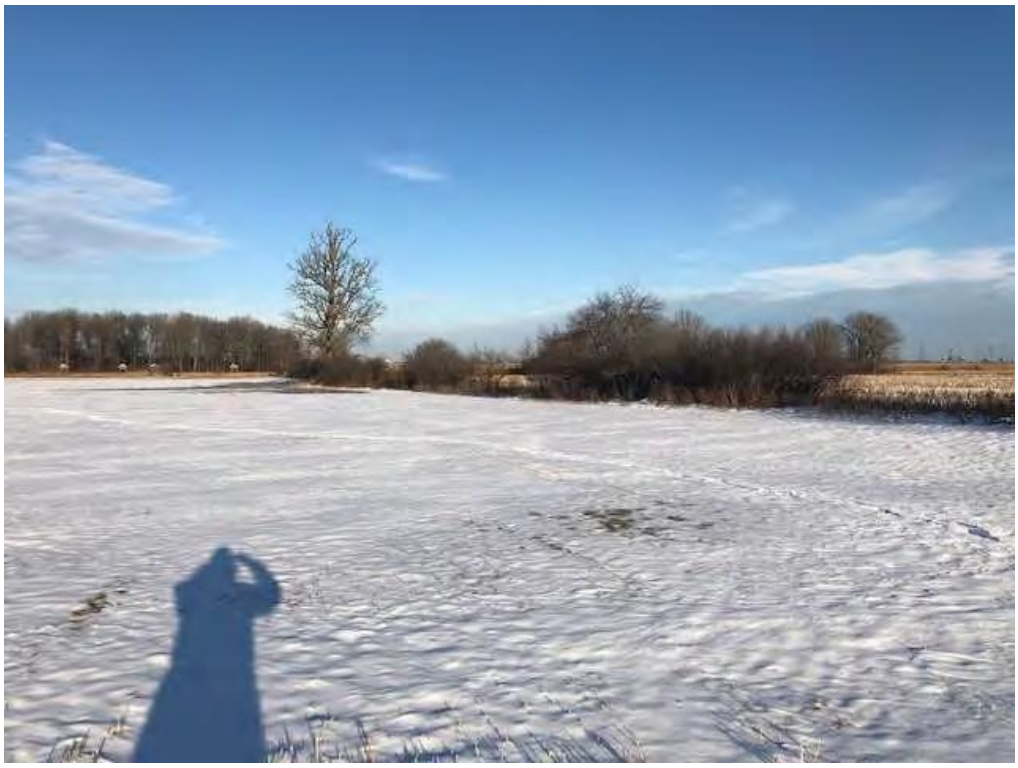
Photograph No.10 -View southeast towards units NH-07 and DW-06



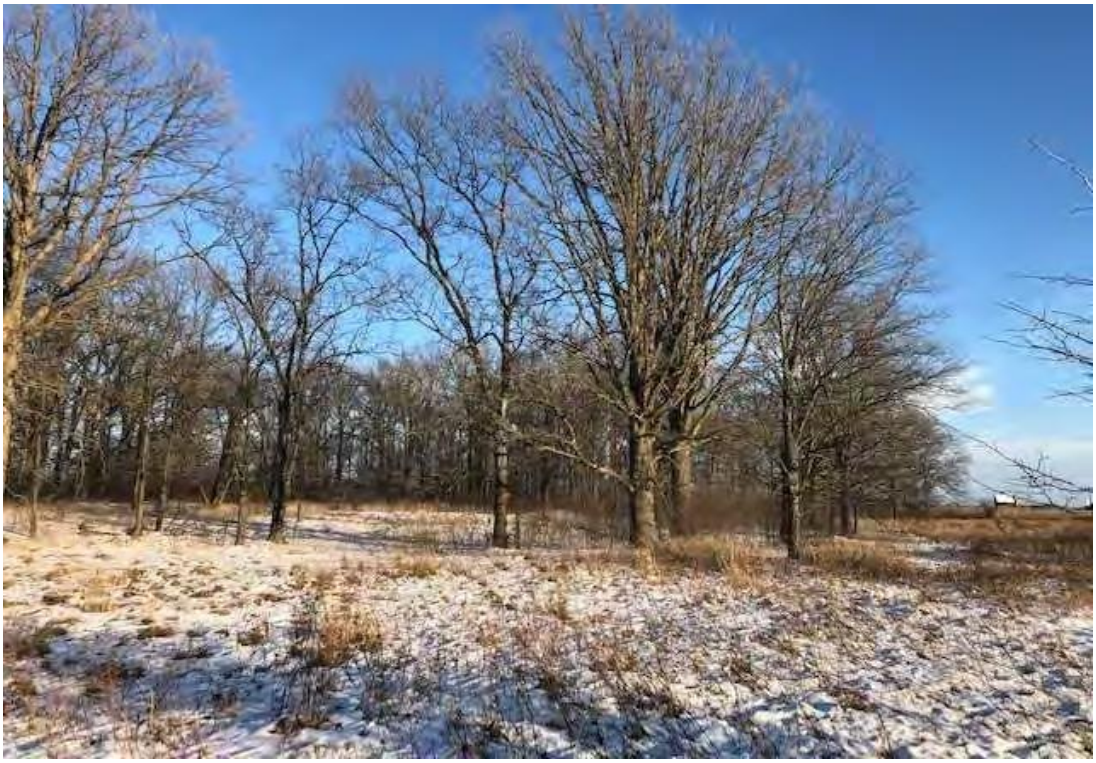
Photograph No. 11 -View east towards unit DW-06



Photograph No. 12 – View west towards unit NH-08



Photograph No. 13 - View east towards unit NH-08 and DW-06



Photograph No.14 – View southeast towards unit DW-06

APPENDIX iv)
Tree Preservation Guidelines

APPENDIX iv TREE PRESERVATION GUIDELINES

The following are general guidelines for the preservation and avoidance of injuries to trees within construction projects. The guidelines should be applied subject to such adjustments as may be deemed reasonable and appropriate due to the proximity and number of trees involved and site specific servicing requirements.

1. The General Contractor should be carefully and thoroughly informed of his contractual obligations regarding tree avoidance and preservation, as well as maintenance measures to be undertaken.

2. The Landscape Architect should be retained on site during construction to supervise those elements of the project that relate to the preservation of the trees.

3. Contractor to make good, to the satisfaction of the Landscape Architect all the protection techniques set out in this report. Where directed by the Landscape Architect, the Contractor shall replace all existing plant material damaged or destroyed during the course of construction to the satisfaction of the Landscape Architect.

4. The Contractor will install farm wire fencing including orange plastic mesh on steel T-rails at 2400mm on centre minimum, around the drip line of each tree to be preserved or as close as practically possible depending on the extent of construction of the drip line. In cases where drip lines are close or touching, the Contractor will install a line of farm wire fencing between including orange plastic mesh construction activity and the tree trunk, in order to minimize construction activity within the drip line.

5. Pruning Practices

   All limbs damaged or broken during the course of construction should be pruned cleanly, utilizing clean, scissor action (not anvil type) secateurs in accordance with approved horticultural practices.

   Roots of existing trees disturbed by excavation should be cleanly pruned, as directed by the Landscape Architect. Should there be a potential risk of transfer of disease from infected to non-infected trees, tools must be disinfected after pruning periods of tree stress and when pruning many members of the same genera, where a disease could be spread quickly (i.e. Verticillium Wilt on Maples or Firelight on genera of the Rosaceae family).

   All pruning cuts should be made to a growing point such as a bud, twig or branch. No stubs should be left. Poor cut location, poor cut angle and torn cuts are not acceptable.

   Pruning should include to the careful removal of:
   - deadwood
   - branches that are weak, damaged, diseased which will interfere with construction activity
   - secondary leaders of conifers
   - trunk and root suckers
   - trunk waterspouts
   - tight V- shaped or weak crotches

6. The Contractor, on direction from the Consultant, shall be required to water selected large trees a minimum of three (3) times during the summer.

7. Any smaller trees and plants to be relocated shall be moved prior to construction by a reputable Contractor and guaranteed for a period of one year.

8. Tree roots should under no circumstances be excavated closer to the trunk than 4m (on three sides of the tree).

9. Any injury to the above ground portion of trees due to any cause during the period of the construction project will be treated as directed by the Landscape Architects.

10. In the event that it is essential for large (7 to 8 cm diameter) roots to be cut, excavated or injured during contraction, the roots will be properly cut and coated with anti-desiccant under the Landscape Architects supervision.

11. Filling around Existing Trees

    This procedure is to be undertaken only on approval of the Landscape Architect.

    Install subsurface drainage tile on existing grade so as to allow drainage away from the tree trunk. This system is to consist of spokes radiating out from the trunk to the drip line. Slope drain piping slightly away from trunk and connect ends around the circumference of the tree canopy.

    After obtaining approval of Landscape Architect, backfill drain tile area with suitable material to a minimum depth of 100mm. Use selected, native topsoil from surrounding excavation, approved by the Landscape Architect, to raise grade to the required level (min. Depth of topsoil to be 100mm). Compact fill material to 80% Standard Proctor Density without disturbing or damaging buried drain tile.

12. Excavating Around Existing Trees

    This procedure is to be undertaken only of the approval of the Landscape Architect.

    Excavation to be performed on only one side of the tree. All other grade changes shall be made outside of the drip line. Cut slope from edge of branch spread to new grade level. Build a topsoil dyke around drip lines to retain water as required.

    If excavation through roots is required, excavate by hand and prune roots with a sharp axe, tree lopper or saw. Conduct root pruning according to aforementioned guidelines on pruning.

    Once grading is complete fertilizer may be applied.

APPENDIX v)
Tree Clearing Guidelines

APPENDIX v) TREE CLEARING GUIDELINES

Tree clearing should be a phased operation and controlled for the purpose of mitigating immediate changes to the vegetation.

These guidelines should be included in the construction contract documents.

Phase I — Clearing operations in areas including building sittings, parking lots, rights of way and cut/fill earthwork zones. Any trees located downhill of water flow shall be protected from siltation by straw bales.

Phase II — After construction, all preservation vegetation should be inspected for its state of health. Where necessary, prune trees and remove dead dying species.

1. All existing trees which are to remain shall be fully protected with protection fence or similar structure erected outside the dripline of trees, prior to the commencement of construction. Groups of trees and other existing plantings to be protected shall be done in a like manner with protective fencing or other similar structure around the entire clump(s). areas within the protective fencing shall remain undisturbed and shall not be used for the storage of building materials or equipment.

2. No rigging cable shall be wrapped around or installed in trees. Surplus soil, equipment, debris or materials shall not be placed over root systems of the trees within the protective fencing area. No contaminants shall be dumped or flushed where feeder roots of trees exist.

3. The contract shall take every precaution necessary to prevent damage to tree or shrubs to be retained.

4. Where limbs or portions of trees are removed to accommodate construction work, they will be cleanly cut.

5. Where root systems of protected trees are exposed directly adjacent to or damaged by construction work, they shall be trimmed neatly. The area shall be back-filled with an appropriate material or sprayed with an approved antidesiccant to prevent drying

6. If grades around trees to be protected are likely to change, the contractor shall be required to take precautions, such as dry welling and root feeding, or any other method approved by the landscape architect in writing.

7. Any trees designated for removal shall have the stumps completely excavated and removed.

8. Tree groups to be preserved, transplanted or removed should be incorporated within the tree preservation plan for the subdivision, thereby ensuring a wee-coordinated design process.

9. All works shall adhere to the Migratory Bird Convention Act. Should vegetation be required within breeding bird season (April 1 to August 31), consultation with a biologist for nesting survey should be carried out prior to any tree removals.