

# Appendix E – Terrestrial Report



**407 TRANSITWAY – WEST OF BRANT STREET TO WEST OF HURONTARIO STREET**  
**MINISTRY OF TRANSPORTATION - CENTRAL REGION**

# **TERRESTRIAL ECOSYSTEMS EXISTING CONDITIONS AND IMPACT ASSESSMENT REPORT**

**PLANNING, PRELIMINARY DESIGN AND TPAP**

**407 TRANSITWAY**

**FROM WEST OF BRANT STREET TO WEST OF HURONTARIO STREET, CITY OF  
BURLINGTON, TOWN OF OAKVILLE, TOWN OF MILTON AND TOWN OF HALTON  
HILLS (HALTON REGION) AND CITY OF MISSISSAUGA AND CITY OF BRAMPTON  
(PEEL REGION)**

**G.W.P. 16/20003**

*prepared for:*

**MINISTRY OF TRANSPORTATION  
CENTRAL REGION**

*prepared by:*



**JULY 2020**

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(PEEL REGION)

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**JULY 2020**

**LGL PROJECT TA8733**

## TABLE OF CONTENTS

<b>1.0 INTRODUCTION .....</b>	<b>3</b>
<b>2.0 EXISTING CONDITIONS.....</b>	<b>2</b>
2.1 PHYSIOGRAPHY AND SOILS.....	2
2.1.1 Purpose.....	2
2.1.2 Data Sources.....	2
2.1.3 Findings.....	3
2.1.4 Sensitivity/Significance.....	4
2.2 VEGETATION AND VEGETATION COMMUNITIES.....	4
2.2.1 Purpose.....	4
2.2.2 Data Sources.....	4
2.2.3 Findings.....	5
2.2.3.1 Designated Natural Areas.....	5
2.2.3.2 Vegetation Communities.....	10
2.2.3.3 Flora.....	44
2.2.3.4 Species at Risk.....	44
2.2.3.5 Sensitivity/Significance.....	45
2.3 WILDLIFE AND WILDLIFE HABITAT.....	48
2.3.1 Purpose.....	48
2.3.2 Data Sources.....	48
2.3.3 Findings.....	49
2.3.3.1 Wildlife Habitat Summary.....	49
2.3.3.2 Wildlife Species.....	60
2.3.3.3 Wildlife Species at Risk.....	72
<b>3.0 IMPACT ASSESSMENT AND MITIGATION .....</b>	<b>89</b>
3.1 PHYSIOGRAPHY AND SOILS.....	89
3.2 VEGETATION AND VEGETATION COMMUNITIES.....	89
3.2.1 Runningway Impacts.....	97
3.2.2 Station Impacts.....	109
3.2.3 Displacement of Rare, Threatened or Endangered Vegetation and Vegetation Communities.....	112
3.2.4 Vegetation Community Offsets.....	115
3.3 WILDLIFE AND WILDLIFE HABITAT.....	120
3.3.1 Runningway Impacts.....	121
3.3.2 Station Impacts and The Bronte Road Bus Storage Yard.....	125
3.3.3 Displacement of Rare, Threatened or Endangered Wildlife or Significant Wildlife Habitat.....	127
3.3.4 Barrier Effects on Wildlife Passage.....	131
3.3.5 Wildlife/Vehicle Conflicts.....	132
3.3.6 Wildlife Passage Considerations for Enhanced Functionality.....	132
3.3.7 Disturbance to Wildlife from Noise, Light and Visual Intrusion.....	133
3.3.8 Potential Impacts to Migratory Birds.....	133
<b>4.0 CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>135</b>
<b>5.0 REFERENCES .....</b>	<b>137</b>

## LIST OF FIGURES

Figure 1. Key Plan of Study Area.....	3
Figure 2a. 407 Transitway West - Natural Heritage Existing Conditions.....	21
Figure 2b. 407 Transitway West - Natural Heritage Existing Conditions.....	22
Figure 2c. 407 Transitway West - Natural Heritage Existing Conditions.....	23
Figure 2d. 407 Transitway West - Natural Heritage Existing Conditions.....	24
Figure 2e. 407 Transitway West - Natural Heritage Existing Conditions.....	25
Figure 2f. 407 Transitway West - Natural Heritage Existing Condition.....	26

Figure 3a. 407 Transitway West - Natural Heritage Impact Assessment .....	91
Figure 3b. 407 Transitway West - Natural Heritage Impact Assessment .....	92
Figure 3c. 407 Transitway West - Natural Heritage Impact Assessment .....	93
Figure 3d. 407 Transitway West - Natural Heritage Impact Assessment .....	94
Figure 3e. 407 Transitway West - Natural Heritage Impact Assessment .....	95
Figure 3f. 407 Transitway West - Natural Heritage Impact Assessment.....	96

## LIST OF TABLES

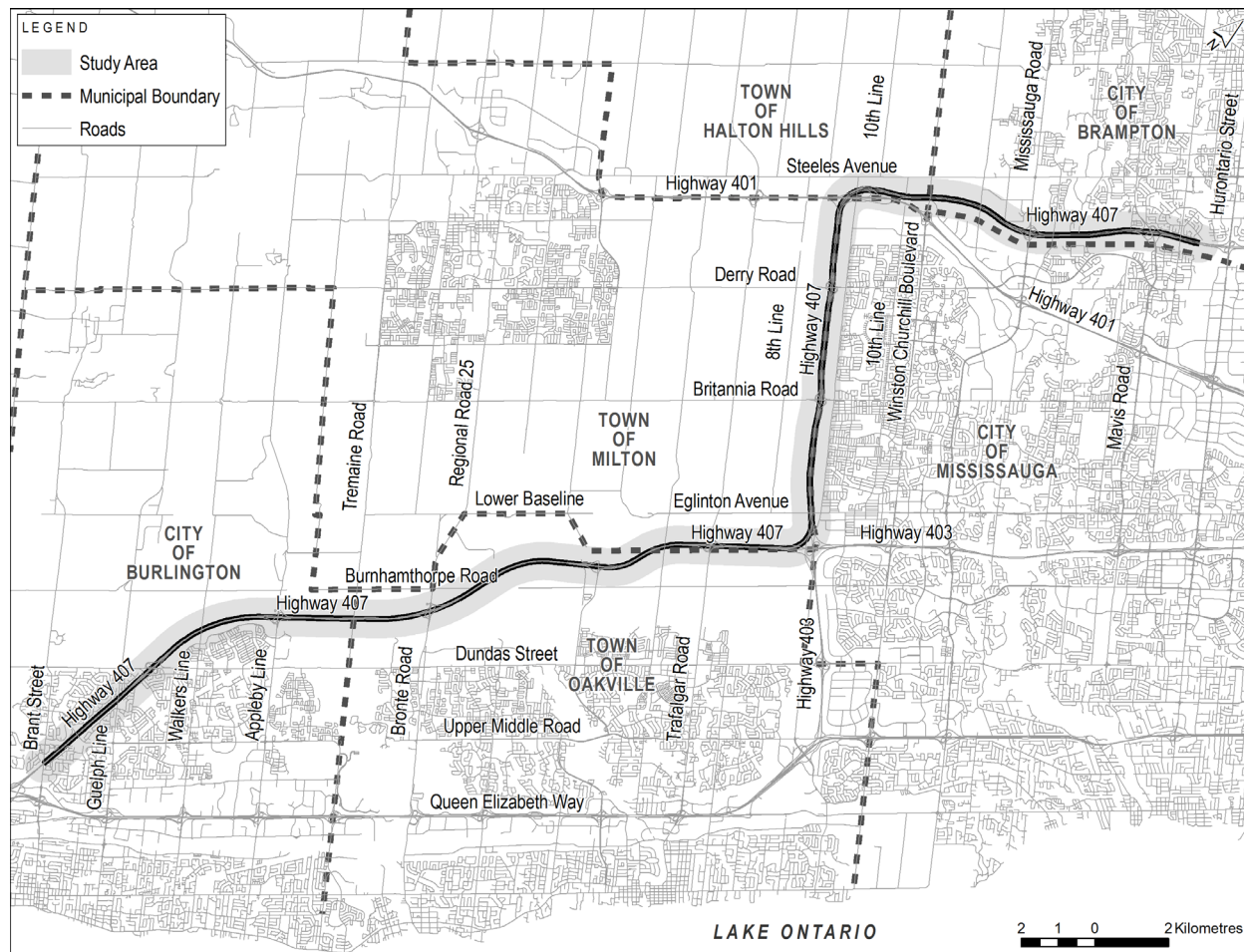
Table 1. Summary of Ecological Land Classification Communities.....	12
Table 2. Regionally Rare Plant Species Recorded within the Study Area.....	46
Table 3. Wildlife Species Documented within the Study Area by LGL and Secondary Source Data.....	62
Table 4. Amphibian Survey of Study Area and Adjacent Lands by LGL Limited.....	71
Table 5. Summary of Wildlife Species at Risk Element Occurrence Records Based on the NHIC Database.....	72
Table 6. Wildlife Species at Risk Summary .....	75
Table 7. Location and description of underground tunnel entrances potentially suitable as bat hibernacula .....	87
Table 8. Summary of Vegetation Removals Within the Transitway Runningway .....	97
Table 9. Summary of Vegetation Removals within the Transitway Stations and Bronte Road Bus Storage Yard Impacts .....	109
Table 10. Impacts to Designated Natural Areas and Plan Policy Areas .....	113

## LIST OF APPENDICES

Appendix A. Municipal Official Plan Natural Heritage Schedules/Maps
Appendix B. Ecological Land Classification Field Sheets
Appendix C. Photographic Record
Appendix D. Vascular Plant Lists
Appendix E. Acronyms and Definitions Used in Species Lists
Appendix F. Correspondence with MNRF, TRCA and CVC
Appendix G. Breeding Bird Atlas Data
Appendix H. Breeding Bird Species Documented in the Study Area by LGL

## 1.0 INTRODUCTION

The Ontario Ministry of Transportation (MTO) is undertaking the Transit Project Assessment Process (TPAP) for the 407 Transitway from west of Brant Street to west of Hurontario Street, in the City of Burlington, Town of Oakville, Town of Milton, and Town of Halton Hills, Regional Municipality of Halton, and in the City of Mississauga and City of Brampton, Regional Municipality of Peel. The study area is presented in **Figure 1**.



**FIGURE 1. KEY PLAN OF STUDY AREA**

The study is following the requirements prescribed in *Ontario Regulation 231/08, Transit Projects and Metrolinx Undertakings* under the *Environmental Assessment Act*. The 407 Transitway will be a two-lane, fully grade-separated transit facility on an exclusive right-of-way, running along the Highway 407 Corridor. This section of the transitway facility consists of 43 km of runningway and several stations whose locations will be determined as part of this study. The station layouts will include vehicular and pedestrian access(es), park and ride, passenger pick-up/drop off (PPUDO) facilities, bus lay-by facilities, on street integration with local transit, shelters, buildings and other amenities. The transitway and the stations will initially be designed to support a two-lane busway service with provisions for future conversion to a two-track, light-rail transit technology.

This 43 km segment forms part of the 150 km long high-speed interregional facility planned to be ultimately constructed on a separate right-of-way that parallels the 407 ETR from Burlington to Highway

35/115, with stations, parking and access connections. This transitway is a component within the official plans of the stakeholder municipalities and the Province's commitment to support transit initiatives in the Greater Golden Horseshoe through the Metrolinx Regional Transportation Plan.

This is a total project management (TPM) assignment, where the consultant delivers all aspects of the study on behalf of MTO. The TPM prime consultant is Parsons. Parsons has assembled a team of engineering and environmental specialists to provide the services required for this study. LGL Limited is providing environmental design and planning services on behalf of Parsons.

This report has been prepared in accordance with the requirements of the MTO *Environmental Reference for Highway Design* (MTO 2013).

## 2.0 EXISTING CONDITIONS

This section describes the existing conditions in the study area related to terrestrial ecosystems, including physiography and soils, vegetation and vegetation communities (including designated natural areas), wildlife and wildlife habitat and species at risk. Information on areas and/or features of environmental sensitivity and/or significance is also provided.

For the planning stage, data was collected from secondary sources for a one-kilometre-wide corridor centred along the 407 ETR from west of Brant Street in the City of Burlington to west of Hurontario Street in the City of Mississauga (see **Figure 1**). During the preliminary design stage, the data presented in this report was updated and augmented through detailed field investigations. Field investigations were conducted along alternative Transitway alignments and station locations, and a detailed impact assessment was carried out for the technically preferred alignment and stations. The results of the studies as part of this TPAP project are documented in this Terrestrial Ecosystems Existing Conditions and Impact Assessment Report.

### 2.1 Physiography and Soils

#### 2.1.1 Purpose

A secondary source investigation was undertaken to identify physiographic regions and soils within the study area.

#### 2.1.2 Data Sources

Information regarding physiography and soils within the study area was obtained from the following sources:

- Chapman, L.J. and D.F. Putnam. 1984. *The Physiography of Southern Ontario*. Published for the Ontario Geological Survey Special Volume 2;
- Gillespie, J.E. and R.E. Wicklund. 1971. *The Soils of Halton County*. Report No. 43 of the Ontario Soil Survey. Experimental Farm Service, Canada Department of Agriculture and the Ontario Agricultural College; and,
- Hoffman, D.W. and N.R. Richards. 1953. *Soil Survey of Peel County*. Report No. 18 of the Ontario Soil Survey. Experimental Farm Service, Canada Department of Agriculture and the Ontario Agricultural College.

### 2.1.3 Findings

According to Chapman and Putnam (1984), the study area is located within the South Slope, Peel Plain and Niagara Escarpment physiographic regions. The majority of the study area is located within the Peel Plain physiographic region, which extends from Hurontario Street in the east to approximately Britannia Road in the west. All of the lands in the study area between Britannia Road and Walkers Line are classified as South Slope. The last portion of the study area, between Walkers Line and Brant Street, are located within the Niagara Escarpment physiographic region.

Both the Peel Plain and South Slope extend through the Region of Peel and Halton. The Peel Plain is a level to an undulating tract of clay soils (Chapman and Putnam 1984). Across the plain, watercourses have cut deep valleys and as such, there is no large undrained depression, swamp or bog in the whole area, although in many of the interstream areas drainage is imperfect (Chapman and Putnam 1984). The South Slope physiographic region is the southern slope of the Oak Ridges Moraine. In the vicinity of the study area, the surface is morainic, consisting of a ground moraine with limited relief (Chapman and Putnam 1984). The Niagara Escarpment physiographic region displays a terrain not found elsewhere in Southern Ontario. The vertical cliffs along the brow mark the edge of the Silurian dolomite formations while the slopes below are carved in red shale (Chapman and Putnam 1984).

Soils surrounding the 407 ETR in the study area are classified as Chinguacousy Clay Loam, Jeddo Clay Loam, Oneida Loam, Tuscola Silt Loam and Bottom Lands. The dominant soil throughout the study corridor is Chinguacousy Clay Loam broken up by bottom lands associated with area watercourses, a series of pockets of Jeddo Clay Loam, Oneida Loam, Tuscola Silt Loam.

#### **Chinguacousy Clay Loam**

Chinguacousy clay loam soils are imperfectly drained and exhibit a smooth, gently sloping topography. This soil type developed on clay till derived dominantly from shale and, to a lesser extent, from limestone materials. Erosion with this type of soil is slight. Chinguacousy clay loam soils are slightly acidic to neutral and contain few stones (Hoffman and Richards 1953).

#### **Jeddo Clay Loam**

Jeddo soils are the poorly drained member of the Oneida catena (Gillespie and Wicklund 1971). These soils are found below the escarpment in Burlington and Oakville, occupying depressional areas in association with Oneida and Chinguacousy soils (Gillespie and Wicklund 1971). Jeddo soils are mainly found in narrow, shallow drainage basins or in the depressional areas associated with undulating or rolling topography (Gillespie and Wicklund 1971).

#### **Oneida Loam**

Oneida soils are the moderately well-drained member of the Oneida catena, and generally occur in association with the imperfectly drained Chinguacousy and poorly drained Jeddo soils (Gillespie and Wicklund 1971). The landscapes associated with the Oneida soils vary from immediately below the escarpment having slopes up to 10%, to the smooth plain in Oakville having slopes generally less than 7% (Gillespie and Wicklund 1971).

#### **Tuscola Silt Loam**

Tuscola soils are derived from fine sandy loam or silt loam lacustrine materials and are imperfectly drained. The topography is gently sloping, permitting a moderate amount of surface runoff (Gillespie and Wicklund 1971).



## Bottom Lands

Bottom lands consist of the low-lying soils along watercourses that are subject to flooding. Drainage varies in these areas but is generally poor (Hoffman and Richards 1953). All watercourses located within the study area are classified as bottom lands.

### 2.1.4 Sensitivity/Significance

Generally, the soils within the study area have imperfect or poor drainage. Implementation of an erosion and sedimentation control strategy during construction will be required.

## 2.2 Vegetation and Vegetation Communities

### 2.2.1 Purpose

The geographical extent, composition, structure and function of vegetation communities were identified through air photo interpretation, a review of secondary source data and field investigations. Air photos were interpreted by LGL Limited to determine the limits and characteristics of the vegetation communities in the study area with the exception of the lands for which the Credit Valley Conservation Authority (CVC) and Conservation Halton (CH) provided Ecological Land Classification (ELC) data. Detailed field investigations were conducted in late spring, summer, and early fall of 2018 and 2019. Investigations focused on the facility footprint, including runway Alignment Options 1 and 2, stations and the bus storage yard (see **Figures 2a to 2f**), with portions of the footprint both north and south of the Highway 407 ETR (407 ETR), in order to confirm existing conditions as these relate to vegetation and vegetation communities.

The vegetation communities were classified according to the *Ecological Land Classification for Southern Ontario: First Approximation and Its Application* (Lee et al. 1998), to the extent possible.

### 2.2.2 Data Sources

Species at risk guidelines and datasets were consulted including the National Heritage Centre Information Centre. This and other information relating to terrestrial habitat features was obtained from the following published and non-published sources:

- City of Brampton. 2015. *Official Plan Office Consolidation September 2015*;
- City of Burlington. 2017. *Official Plan Office Consolidation April 2018*;
- City of Mississauga. 2019. *Official Plan Office Consolidation March 2019*;
- Conservation Halton. 2010. *Master Plan for Glenorchy Conservation Area*. Stage 3 Report.
- Crins, William J., Paul A. Gray, Peter W.C. Uhlig, and Monique C. Wester. 2009. *The Ecosystems of Ontario, Part I: Ecozones and Ecoregions*. Ontario Ministry of Natural Resources, Peterborough Ontario, Inventory, Monitoring and Assessment, SIB TER IMA TR- 01, 71pp;
- Halton Region and North-South Environmental Inc. 2005. *Halton Region Environmentally Sensitive Areas Consolidation Report*. Unpublished report prepared by Halton Region Planning and Public Works Department in conjunction with North-South Environmental Inc. 222 pp. + app;
- Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. *Ecological Land Classification for Southern Ontario: First Approximation and Its Application*. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Department and Transfer Branch. SCSS Field Guide FG-02 North Bay, Ontario. 225 pp.;

- LGL Limited Environmental Research Associates. Final Report May 1999, revised November 2000. *North Oakville Natural Heritage Inventory and Analysis*. Town of Oakville;
- Natural Heritage Information Centre. 2017. Biodiversity Explorer. Ontario Ministry of Natural Resources. Available online at: <http://nhic.mnr.gov.on.ca/>. Accessed October 2017;
- Natural Heritage Information Centre. 2011. Biodiversity Explorer. Ontario Ministry of Natural Resources. Available online at: <http://nhic.mnr.gov.on.ca/>;
- Ministry of the Environment, Conservation and Parks. 2019. Species at Risk Guides and Resources. Available online at: <https://www.ontario.ca/page/species-risk-guides-and-resources>;
- Ministry of Natural Resources and Forestry (MNRF). 2006a. *Provincially Significant North Oakville-Milton East Wetland Complex*. Aurora District;
- Ministry of Natural Resources and Forestry (MNRF). 2006b. *Provincially Significant North Oakville-Milton West Wetland Complex*. Aurora District;
- Ministry of Natural Resources and Forestry (MNRF). 2006c. *Candidate Trafalgar Moraine Earth Science Area of Natural and Scientific Interest*. Aurora District;
- Ministry of Natural Resources and Forestry (MNRF). 2006d. *Candidate Oakville-Milton Wetlands and Uplands Life Science Area of Natural and Scientific Interest*. Aurora District;
- Ministry of Natural Resources and Forestry (MNRF). 2006e. *Candidate Sixteen Mile Creek Valley Life Science Area of Natural and Scientific Interest*. Aurora District;
- Ministry of Municipal Affairs and Housing. 2017. *Greenbelt Plan*;
- Region of Peel. 2018. *Official Plan Office Consolidation December 2018*;
- Region of Halton. 2015. Interim Office Consolidation of the Regional Official Plan. September 28, 2015. Regional Official Plan Amendment 38, as partially approved by the Ontario Municipal Board;
- Town of Halton Hills. 2017. *Official Plan Office Consolidation January 2017*;
- Town of Oakville. 2017. *Official Plan Office Consolidation April 2017*; and;
- Town of Milton. 2008. *Official Plan Office Consolidation August 2008*.

## 2.2.3 Findings

### 2.2.3.1 Designated Natural Areas

Designated natural areas include areas identified for protection by the Ontario Ministry of Natural Resources and Forestry, CVC, CH and upper tier and lower tier municipalities.

#### Provincially Significant Wetlands

Three Provincially Significant Wetland (PSW) complexes are located within 120 m of the study area, including the North Oakville-Milton East PSW, the North Oakville-Milton West PSW and the Churchville-Norval PSW Complex. The locations of the PSW complexes are presented in **Figure 2a to 2f**.

The North Oakville-Milton West Wetland Complex is located within the Oakville-Milton Wetlands and Uplands, Candidate ANSI. The North Oakville Milton East Wetland Complex is located within the Oakville-Milton Wetlands and Uplands Candidate ANSI.

#### *North Oakville-Milton East PSW*

The North Oakville-Milton East PSW is located within the headwaters of Sixteen Mile Creek and Joshua Creek. The wetland complex is comprised of 104 wetlands, which covers a total of 35 hectares. This wetland complex supports 45 significant species including 41 locally rare plant species, four regionally rare plant species and the locally rare Northern Ribbon snake (Ministry of Natural Resources 2006a).

#### *North Oakville-Milton West PSW*

The North Oakville-Milton West PSW is located within the headwaters of Sixteen Mile Creek, Fourteen Mile Creek, and Taplow Creek. The complex is comprised of 147 wetlands covering a total of 20 hectares. This wetland complex supports 42 significant species including one provincially rare plant species, four regionally rare plant species and 36 locally rare plant species (Ministry of Natural Resources 2006b).

#### *Churchville-Norval PSW*

The Churchville-Norval PSW complex is located between Financial Drive and Mavis Road. This complex covers an area of 15.57 ha and consists of 48 evaluated communities most of which are associated with riparian areas of the Credit River. Of these communities, there are 26 marshes, 3 open water and 19 swamps varying in size from 0.017 ha to 3.02 ha.

### **Unevaluated Wetlands**

#### *Drumquin Unevaluated Wetland*

One unevaluated wetland, the Drumquin Wetland is located over 120 m west of the study area. The Drumquin Wetland has not been evaluated and is not identified as provincially significant. This wetland is located on the north and south sides of Britannia Road, and west of 407 ETR. A major part of the forest is a swamp dominated by large silver maple, some of which have attained girths of 110-120 cm DBH. The swamp is an uncommon vegetation type within the Peel Plain physiographic region. In areas of better drainage, such as along the wooded section of the terrace adjacent to the small tributary to Sixteen Mile Creek, upland species such as red oak, American beech, white ash, black cherry and hop hornbeam occur (Halton Region and North-South Environmental Inc. 2005).

### **Areas of Natural and Scientific Interest**

There are three Areas of Natural and Scientific Interest (ANSI) identified within the study area, the Nelson Slope Forest Life Science ANSI, Zimmerman Valley Life Science ANSI, and the Trafalgar Moraine Earth Science ANSI. In addition, two candidate ANSIs, Sixteen Mile Creek Candidate Life Science and Oakville-Milton Wetlands and Uplands Candidate Life Science ANSI are found within the study area. A description of each ANSI is provided below, and the locations are presented on **Figures 2a to 2f**.

#### *Nelson Slope Forest Life Science ANSI*

The Nelson Slope Forest Life Science ANSI is located within the eastern portion of the Nelson Escarpment Woods. The Nelson Escarpment Woods is located on the north side of the 407 ETR between Walkers Line and Cedar Springs Road and is approximately 221 ha in size. The Nelson Escarpment Woods span a series of valleys and ridges along the edge of the Niagara Escarpment. The dominant forest cover is sugar maple and American beech with several small ponds in the eastern portion.

A small portion of the Nelson Slope Forest Area of Natural and Scientific Interest (ANSI) Life Science (regionally significant) is located west of Walkers Line and the 407 ETR and is over 250 m north of the study area. This feature is located within the Niagara Escarpment Plan area.

#### *Zimmerman Valley Life Science ANSI*

The Zimmerman Valley Life Science ANSI encompasses the Bronte Creek valley and was designated as a regionally significant life science ANSI because it is a good representation of the Ontario-Peel plain valley. The ANSI contains a large meander valley with representative patterns and contains local geomorphological and floristic significance (Natural Heritage Information Centre 2011). Valley rim/bluff prairie vegetation is reported from the Zimmerman Valley ANSI (Ministry of Natural Resources 2006c) and is located on an open bluff and eroding valley rim dominated by big bluestem (*Andropogon gerardii*) (Natural Heritage Information Centre 2011).

#### *Trafalgar Moraine Earth Science ANSI*

The Trafalgar Moraine Earth Science ANSI is comprised of three distinct morphologies including fluted till with the moraine crest preserved, a ridged smooth till moraine and a ridged, slightly hummock till moraine east of Sixteen Mile Creek (Halton Region and North-South Environmental Inc. 2005). The Trafalgar Moraine encompasses the upper reaches of Sixteen Mile Creek, Glenrochy Conservation Area and a portion of the Oakville-Milton East and West Wetland Complexes. Existing land uses have not significantly impacted the landforms identified in the ANSI, but the Trafalgar Moraine would be highly sensitive to any activities that alter the natural contours of the identified features through grading and/or covering of the landforms (Ministry of Natural Resources 2006c).

#### *Oakville-Milton Wetlands and Uplands Life Science Candidate ANSI*

The Oakville-Milton Wetlands and Uplands Life Science Candidate ANSI is approximately 290 ha in size and is comprised of 11 woodlots (Ministry of Natural Resources 2006d). The ANSI supports a diversity of 115 vegetation communities including a number of wetland communities that are rare in site district 7EA (Natural Heritage Information Centre 2011). In particular, the ANSI supports three provincially rare wetland types: buttonbush thicket, bur oak and swamp white oak swamp. The ANSI supports a high concentration of 59 significant plant species and 46 significant faunal species. The Oakville-Milton Uplands ANSI is part of a larger matrix of forest communities within northern Oakville that includes the Sixteen Mile Creek Valley Candidate ANSI.

#### *Sixteen Mile Creek Valley Life Science Candidate ANSI*

The Sixteen Mile Creek Valley Life Science Candidate ANSI supports a high concentration of plant species including 105 significant plant species (Natural Heritage Information Centre 2011). This ANSI supports a number of vegetation community types that are provincially and regionally rare including provincially rare tall-grass prairie bluffs, three provincially rare wetland community types and seven wetland types that are locally rare (Natural Heritage Information Centre 2011).

### **Greenbelt Plan**

Lands on the north side of the 407 ETR between 6<sup>th</sup> Line and Dundas Street, and a small area of lands on the south side of the 407 ETR are primarily within the Greenbelt Plan area, under the 'Protected Countryside' and 'Urban River Valley' designations. Apart from the lands associated with Bronte Creek, most of the Greenbelt Plan 'Protected Countryside' is located on the north side of the 407 ETR.

A number of watercourses are designated as 'Urban River Valley' within the study area. The 'Urban River Valleys' includes Fourteen Mile Creek, west of Bronte Road, the Glenrochy Conservation Area and Sixteen Mile Creek, east of Bronte Road. Bronte Creek is not identified as 'Urban River Valley' as it is already included in the Greenbelt Natural Heritage System.

The Zimmerman Valley Life Science ANSI and Bronte Creek Valley are located within the valleylands of Bronte Creek, east of Appleby Line. This ANSI is identified within the Greenbelt Plan area under the 'Protected Countryside' designation.

### **Niagara Escarpment Plan**

A portion of the study area on the north side of the 407 ETR between Dundas Street and Walkers Line is found within the Niagara Escarpment Plan area. The lands are primarily designated 'Escarpment Protection Area', 'Escarpment Natural Area' and a small section is designated 'Escarpment Rural Area.'

### **Natural Heritage System**

#### **City of Burlington**

According to the City of Burlington's Official Plan (2017), the lands located immediately north of the 407 ETR are designated 'Agricultural Rural Area' and lie adjacent to the 'Niagara Escarpment Plan Area'. Bronte Creek and its associated habitat are classified as 'Greenlands (Non-Escarpment Plan Area)' and 'Environmentally Sensitive Area'. **Appendix A: Schedule C** presents the locations of these areas/features.

The Halton Region Official Plan (2018) identifies lands and most watercourses and their associated habitats under 'Prime Agricultural Areas in NHS Enhancement/Linages/Buffers', 'Key Features', and 'Greenbelt Natural Heritage System' (**Appendix A: Map 1G**). The Regional Structure of Halton Region identifies the lands northeast of Trafalgar Road within the 'Agricultural Area', while the remaining lands north of the 407 ETR are identified within the 'Regional Natural Heritage System,' 'Greenbelt Natural Heritage System', and the 'Greenbelt Plan Protected Countryside Boundary'.

Watercourses through the corridor include Rambo Creek, Roseland Creek, Tuck Creek, Tributary of Shoreacres Creek, Appleby Creek, Tributary of Sheldon Creek, Bronte Creek, and Tributary of Fourteen Mile Creek.

#### **Town of Oakville**

Within the Town of Oakville, the Livable Oakville Plan applies to lands south of the Dundas Street and north of the 407 ETR. The North Oakville East and West Secondary Plans apply to lands north of Dundas Street and south of the 407 ETR. There are several natural heritage features located within the Town of Oakville. The natural heritage features and the majority of the watercourses found within the study area are classified 'Area of Natural and Scientific Interest', 'Woodlands', 'Wetlands', and 'Floodplain' as part of the City's Natural Features and Hazard Lands in the Livable Oakville Plan (**Appendix A: Schedule B**).

The natural features and watercourse that exist within the North East Oakville Secondary Plan area are all identified under the 'Natural Heritage System Area' designation. The watercourses that flow through this corridor include Fourteen Mile Creek, Sixteen Mile Creek, and East Sixteen Mile Creek. The majority of the watercourses and their associated habitat found within the study area are designated as 'Linkage Preserve Area' 'Optional Linkage Preserve Area', with tributaries designated as 'High Constraint Stream Corridors', 'Medium Constraint Stream Corridors', 'Low Constraint Stream Corridors', 'Hydrological Features A' and 'Hydrological Features B', in North East Oakville Secondary Plan area (**Appendix A: Figure NOE 3**).

There are a number of designated natural areas located within the Town of Oakville, including Trafalgar Moraine ANSI, Earth Science (provincially significant), Oakville-Milton Wetlands and Uplands Candidate ANSI, Life Science (provincially significant), Sixteen Mile Creek Candidate ANSI, Life

Science (provincially significant), North Oakville-Milton East Provincially Significant Wetland (PSW), and North Oakville-Milton West Provincially Significant Wetland (PSW).

In addition, all of the lands situated on the north side of the 407 ETR are part of the Greenbelt Plan 'Protected Countryside'. On the south side of the 407 ETR, Fourteen Mile Creek, Glenorchy Conservation Area, and Sixteen Mile Creek are designated as 'Urban River Valleys' in the Greenbelt Plan.

### **Town of Milton**

The natural heritage features are generally limited to blocks or small pockets of forest, meadow, thicket, swamp, and marsh. The Tributaries of East Sixteen Mile Creek are identified under the 'Greenlands A Area' and 'Environmentally Sensitive Area' land use designation in Town of Milton Official Plan (**Appendix A: Schedule A**). Designated natural areas found within the Town of Milton include the Drumquin Non-Provincially Significant Wetland, located north and south of Britannia Road. Portions of a number of the designated natural areas (i.e. PSWs) described for the Town of Oakville also are located in the Town of Milton.

### **Town of Halton Hills**

Within the Town of Halton Hills, natural heritage features are generally characterized as meadow, marsh and swamp habitats. Tributaries of East Sixteen Mile Creek are located through this area and are identified under the 'Greenlands' land use designation.

### **City of Mississauga**

The Ninth Line Lands are predominantly rural in nature, with agricultural fields, meadows and areas of forest. The Tributary of East Sixteen Mile Creek is located within these lands. There are a number of large woodlots and natural areas within the Ninth Line Neighbourhood.

In the City of Mississauga Official Plan (2019) the majority of watercourses and their associated habitat within the study area are designated 'Greenlands', 'Natural Hazard Area', and 'Public Open Space'. In addition, within the City's Natural System, areas of 'Significant Natural Areas and Natural Green Spaces' and 'Special Management Areas' are identified typically associated with the watercourses. These areas include the Tributary of East Sixteen Mile Creek, the Credit River, and the Tributary of Fletchers Creek. Although the Churchville-Norval Wetland lies within the City of Brampton, it is associated with the Credit River watershed and recognized within the City of Mississauga's Natural System **Appendix A (Schedule 3 and 10)** presents the locations of these areas/features.

### **City of Brampton**

The 407 ETR travels adjacent to natural heritage features in several areas. According to the City of Brampton Official Plan (2015), the majority of the watercourses and their associated habitat found within the study area are classified as 'Open Space' and as 'Valleyland/Watercourse Corridor' as part of the City's Natural Heritage System. In addition, areas of 'Woodland' and 'Provincially Significant Wetland' are identified in the study area, typically associated with the valleylands of study area watercourses. **Appendix A: Schedule A and D** presents the locations of these areas/features. Under the Region of Peel Official Plan (2018), several areas within the City of Brampton are located within the 'Core Areas of the Greenlands System in Peel'. These areas include lands associated with Fletchers Creek, Credit River, Levis Creek, and the Tributary of Mullet Creek (see **Appendix A: Schedule A**).

The Region of Peel's current 'Greenbelt Plan Area' is located well north of the study area, although there are two 'River Valley Connections Outside the Greenbelt' that cross through the study area in association with the Credit River (**Appendix A: Schedule D3**). The 'River Valley Connections Outside the Greenbelt' is also identified as 'Selected Areas of Provincial Interest' in the Region of Peel's Official

Plan (see **Appendix A: Figure 2**). The Greenbelt Plan was updated by the Ministry of Municipal Affairs in May 2017 and designates the Credit River under 'Urban River Valleys'. The City of Brampton and Region of Peel's Official Plans have not yet been updated to address these changes to the Greenbelt Plan.

### 2.2.3.2 Vegetation Communities

Vegetation communities found within the study area consist of a mixture of terrestrial, wetland and cultural communities. Forest communities identified within the study area are generally part of larger vegetation communities that extend beyond the study area, typically associated with watercourses that cross 407 ETR and the transitway lands, with a few more isolated forest patches observed on the tableland. Forest and wetland communities are also associated with valley slopes (upland) and riparian habitat (bottomlands). A large portion of the study area is associated with cultural communities that contain a high proportion of invasive and non-native plant species that are disturbance tolerant. Overall, vegetation communities were observed to be in a disturbed state associated with existing land use practices; this was particularly notable along community edges. Portions of several forested communities observed were in good condition with minimal disturbance observed.

Eleven Ecological Land Classification (ELC) ecosites were identified within the study area. These communities include Coniferous Forest (FOC), Deciduous Forests (FOD), Mineral Cultural Woodlands (CUW1), Deciduous Plantations (CUP1), Mineral Cultural Meadows (CUM1), Mineral Cultural Thickets (CUT1), Mineral Meadow Marshes (MAM2), Mineral Shallow Marshes (MAS2), Swamp Thicket (SWT), Deciduous Swamps (SWD), and Open Aquatic (OAO).

Thirty vegetation communities were identified within the study area based on field surveys undertaken by LGL staff throughout the spring, summer and fall of 2018 and 2019. Field surveys were undertaken on June 18, July 13 and 20, and August 3, 2018, and June 3, 11, July 3, 10, 12, 15, 16, 26, 31, and August 7, 8, 2019. The communities identified include numerous combined vegetation communities including Mineral Cultural Meadow/Mineral Cultural Thicket (CUM1-1/CUT1), Mineral Cultural Thicket/Mineral Cultural Woodland (CUT1/CUW1), Mineral Meadow Marsh/Mineral Shallow Marsh (MAM2/MAS2) and Mineral Shallow Marsh/Mineral Swamp Thicket (MAS2/SWT2). These communities were either very small and/or boundaries were difficult to distinguish often because communities were in successional transition (i.e., changes in species structure within an ecological community made it difficult to identify or define a hard boundary). The range of vegetation communities present within the study area includes several Deciduous Forests (FOD) and a Coniferous Forest (FOC). Wetland communities were also observed including Mineral Meadow Marsh (MAM2), Reed-Canary Grass Mineral Meadow Marsh (MAM2-2), Forb Mineral Meadow Marsh (MAM2-10), Mineral Shallow Marsh (MAS2), Cattail Mineral Shallow Marsh (MAS2-1), Forb Mineral Shallow Marsh (MAS2-9), Willow Mineral Thicket Swamp (SWT2-2), Green Ash Mineral Deciduous Swamp (SWD2-2), Maple Mineral Deciduous Swamp (SWD3), and a Willow Mineral Deciduous Swamp (SWD4-1). Several Mineral Open Bluff (BLO1) areas were observed associated with Bronte Creek and Sixteen Mile Creek. Cultural community types were also identified including Dry-Moist Old Field Meadow (CUM1-1), Mineral Cultural Thicket (CUT1), Sumac Cultural Thicket (CUT1-1), Gray Dogwood Cultural Thicket (CUT1-4), Mineral Cultural Woodland (CUW1), Deciduous Plantation (CUP1), and a Black Walnut Deciduous Plantation (CUP1-3). Numerous very small wetland patches, typically less than 0.1 to 0.2 ha and dominated by common reed (*Phragmites australis*), were identified as inclusions within cultural meadow communities identified adjacent to the 407 ETR. Many of these inclusions were very dry in 2018 and 2019, and likely established due to seasonal runoff from the 407 ETR.

The Fresh-Moist Sugar Maple-Black Maple Deciduous Forest (FOD6-4) associated with Bronte Creek, is a vulnerable community type provincially ranked as S3. This community contained several regionally rare species.

Several areas observed not identified as ELC vegetation communities included manicured areas, hedgerows and stormwater ponds. Manicured areas (M) include mown lawns, gardens and planted trees. A few of the berms surrounding storm water ponds were observed to either have been planted with a low density of shrubs and trees or these have colonized naturally, and ground flora within these areas were comprised of disturbance tolerant species typically found within the surrounding landscape. Common reed and/or cattails (*Typha* sp.) were observed to have established as dominant along the water's edge in most storm water ponds. Hedgerows (H) include planted trees or linear strips of trees that have been maintained for the purposes of preserving windbreaks between agricultural fields and screening between residential areas and local roads.

There were several instances across the study area where sites could only be surveyed partially along an edge from within the right-of-way (ROW) where access was not permitted, or areas were gated and access was not possible. Plant lists presented on the data sheets, presented in **Appendix B**, represent the fullest plant list possible based on full or limited property access. Where possible, plant lists were augmented through secondary source information. It should also be noted that where ash (*Fraxinus* sp.) trees were identified, these were typically in poor condition or dead due to the effects of Emerald Ash Borer (*Argrilus planipennis*).

The ELC vegetation communities identified during field surveys undertaken by LGL staff are described in **Table 1** and presented in **Figures 2a to 2f** which includes the runningway for both Alignment Options 1 and 2, transitway stations, and the bus storage yards Options A and B, where two options were identified. The ELC Field Sheets are presented in **Appendix B**. A photographic record of the vegetation communities is presented in **Appendix C**.

The discussion following **Table 1** and **Figures 2** provides a more detailed summary of existing conditions and vegetation communities identified within smaller sections (Segments S1 to S11) across the study area for both runningway Alignment Options 1 and 2, and transitway stations, and the bus storage yard Options A and B, where two options were identified.



**TABLE 1.**  
**SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES**

ELC Code	Vegetation Type	Species Association	Community Characteristics
<b>TERRESTRIAL – NATURAL/SEMI-NATURAL</b>			
BLO	Open Bluff		
BLO1	Mineral Open Bluff	<b>Ground Cover:</b> examples include swallow-wort ( <i>Cynanchum rossicum</i> ), Canada goldenrod ( <i>Solidago canadensis</i> ), and garlic mustard ( <i>Alliaria petiolata</i> ).	<ul style="list-style-type: none"> <li>• Tree cover ≤ 10% (BL).</li> <li>• Tree cover ≤ 25%, shrub cover ≤ 25% (O).</li> <li>• Mineral soils (1).</li> <li>• Plant cover restricted by erosion related disturbances.</li> <li>• Vegetation cover varies from patchy and barren to continuous herbaceous and shrub cover.</li> </ul>
FOC	Coniferous Forest		
FOC2-2	Dry-Fresh White Cedar Coniferous Forest	<p><b>Canopy:</b> dominated by eastern white cedar (<i>Thuja occidentalis</i>). Includes white pine (<i>Pinus strobus</i>) and Manitoba maple (<i>Acer negundo</i>).</p> <p><b>Understorey:</b> includes eastern white cedar, white pine, and Manitoba maple.</p> <p><b>Ground Cover:</b> examples include swallow-wort (<i>Cynanchum rossicum</i>), Canada goldenrod (<i>Solidago canadensis</i>), and garlic mustard (<i>Alliaria petiolata</i>).</p>	<ul style="list-style-type: none"> <li>• Tree cover &gt; 60% (FO).</li> <li>• Coniferous trees &gt; 75% of canopy cover (C).</li> <li>• Soil moisture dry to fresh.</li> <li>• Upper to middle slopes and tableland.</li> </ul>
FOD	Deciduous Forest		
FOD2-4a - b	Dry-Fresh Oak-Hardwood Deciduous Forest	<p><b>Canopy:</b> includes red oak, shagbark hickory, sugar maple and basswood.</p> <p><b>Understorey:</b> includes sugar maple, shagbark hickory, red ash, (<i>Fraxinus pennsylvanica</i>), black walnut (<i>Juglans nigra</i>), ironwood (<i>Ostrya virginiana</i>), chokecherry and red raspberry (<i>Rubus idaeus</i>).</p> <p><b>Ground Cover:</b> includes herb robert, enchanter's nightshade, Canada anemone (<i>Anemone canadensis</i>), and pointed broom sedge (<i>Carex scoparia</i>).</p>	<ul style="list-style-type: none"> <li>• Tree cover &gt; 60% (FO).</li> <li>• Deciduous trees &gt; 75% of canopy cover (D).</li> <li>• Oak species dominant (2).</li> <li>• Oak dominant with Sugar Maple, ash, beech, basswood associates (-4).</li> </ul>
FOD5a - b	Dry-Fresh Sugar Maple Deciduous Forest	<p><b>Canopy:</b> includes shagbark hickory, black ash (<i>Fraxinus nigra</i>), sugar maple, black walnut, American beech (<i>Fagus grandifolia</i>) and eastern cottonwood (<i>Populus deltoides</i>).</p> <p><b>Understorey:</b> includes Manitoba maple, black walnut, basswood, American beech, sugar maple, common buckthorn and staghorn sumac (<i>Rhus typhina</i>).</p> <p><b>Ground Cover:</b> includes Canada goldenrod, enchanter's nightshade, sugar maple, shagbark hickory and riverbank grape.</p>	<ul style="list-style-type: none"> <li>• Tree cover &gt; 60% (FO).</li> <li>• Deciduous trees &gt; 75% of canopy cover (D).</li> <li>• Sugar maple with Beech, Oaks, Ironwood, Basswood, Hickory, Aspen associates (5).</li> <li>• Heavily managed, grazed or disturbed sites.</li> </ul>

**TABLE 1.**  
**SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES**

ELC Code	Vegetation Type	Species Association	Community Characteristics
FOD5-1a – b	Dry-Fresh Sugar Maple Deciduous Forest	<p><b>Canopy:</b> includes sugar maple, red oak, shagbark hickory and black cherry (<i>Prunus serotina</i>).</p> <p><b>Understorey:</b> includes sugar maple, red ash, American beech, and alleghany blackberry (<i>Rubus allegheniensis</i>).</p> <p><b>Ground Cover:</b> includes sugar maple, red ash, coltsfoot (<i>Tussilago farfara</i>), small jack-in-the-pulpit (<i>Arisaema triphyllum</i> ssp. <i>triphyllum</i>), zig-zag goldenrod (<i>Solidago flexicaulis</i>), herb robert, and garlic mustard (<i>Alliaria petiolata</i>).</p>	<ul style="list-style-type: none"> <li>• Tree cover &gt; 60% (FO).</li> <li>• Deciduous trees &gt; 75% of canopy cover (D).</li> <li>• Sugar maple with Beech, Oaks, Ironwood, Basswood, Hickory, Aspen associates (5).</li> <li>• Almost entirely dominated by Sugar Maple (-1).</li> </ul>
FOD5-2	Dry-Fresh Sugar Maple –Beech Deciduous Forest Type	<p><b>Canopy:</b> includes sugar maple, shagbark hickory, red oak, and Freeman’s maple (<i>Acer X freemanii</i>).</p> <p><b>Understorey:</b> sugar maple, shagbark hickory, chokecherry, red ash, and scarlet hawthorn (<i>Crataegus pedicellata</i>).</p> <p><b>Ground Cover:</b> includes poison ivy (<i>Rhus radicans</i> ssp. <i>negundo</i>), sugar maple, enchanter’s nightshade, garlic mustard and yellow avens (<i>Geum aleppicum</i>).</p>	<ul style="list-style-type: none"> <li>• Tree cover &gt; 60% (FO).</li> <li>• Deciduous trees &gt; 75% of canopy cover (D).</li> <li>• Sugar maple with Beech, Oaks, Ironwood, Basswood, Hickory, Aspen associates (5).</li> <li>• Almost entirely dominated by Sugar Maple with Beech (-2).</li> </ul>
FOD5-3a – e	Dry Fresh Sugar Maple-Oak Deciduous Forest	<p><b>Canopy:</b> includes red oak, white oak (<i>Quercus alba</i>), sugar maple, shagbark hickory, and basswood.</p> <p><b>Understorey:</b> includes shagbark hickory, sugar maple, white ash, common buckthorn, chokecherry, and gray dogwood (<i>Cornus foemina</i> ssp. <i>racemosa</i>).</p> <p><b>Ground Cover:</b> includes enchanter’s nightshade, yellow avens, false Solomon’s seal (<i>Maianthemum racemosum</i>), and Pennsylvania sedge (<i>Carex pennsylvanica</i>), zig-zag goldenrod, Virginia stickweed (<i>Hackelia virginiana</i>), and inserted Virginia-creeper (<i>Parthenocissus inserta</i>).</p>	<ul style="list-style-type: none"> <li>• Tree cover &gt; 60% (FO).</li> <li>• Deciduous trees &gt; 75% of canopy cover (D).</li> <li>• Sugar maple with Beech, Oaks, Ironwood, Basswood, Hickory, Aspen associates (5).</li> <li>• Sugar Maple with Red Oak &gt;&gt; White Oak (-3).</li> </ul>
FOD5-5	Dry-Fresh Sugar Maple Hickory Deciduous Forest	<p><b>Canopy:</b> includes shagbark hickory, red oak, basswood and sugar maple.</p> <p><b>Understorey:</b> includes shagbark hickory, sugar maple, red ash, ironwood, common buckthorn, chokecherry and gray dogwood.</p> <p><b>Ground Cover:</b> includes shagbark hickory, sugar maple, red ash, Canada goldenrod, poison ivy, and riverbank grape.</p>	<ul style="list-style-type: none"> <li>• Tree cover &gt; 60% (FO).</li> <li>• Deciduous trees &gt; 75% of canopy cover (D).</li> <li>• Sugar maple with Beech, Oaks, Ironwood, Basswood, Hickory, Aspen associates (5).</li> <li>• Sugar Maple with Hickory (-5).</li> </ul>

**TABLE 1.**  
**SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES**

ELC Code	Vegetation Type	Species Association	Community Characteristics
FOD6-2	Fresh-Moist Sugar Maple- Black Maple Deciduous Forest	<b>Canopy:</b> includes sugar maple, black maple, red ash, red maple ( <i>Acer rubrum</i> ), and American beech. <b>Understorey:</b> includes sugar maple, basswood, black maple, red ash and wild black currant ( <i>Ribes americanum</i> ). <b>Ground Cover:</b> enchanter's nightshade, false nettle ( <i>Boehmeria cylindrical</i> ), pale touch-me-not ( <i>Impatiens pallida</i> ), ostrich fern ( <i>Matteuccia struthiopteris</i> var. <i>pennsylvanica</i> ), garlic mustard, and hog peanut ( <i>Amphicarpaea bracteata</i> ).	<ul style="list-style-type: none"> <li>• Tree cover &gt; 60% (FO).</li> <li>• Deciduous trees &gt; 75% of canopy cover (D).</li> <li>• Sugar maple with ash, red maple, white elm, yellow birch, basswood and beech associates (6).</li> <li>• Black Maple present (-2).</li> <li>• Moist well drained sites, often along floodplains.</li> </ul>
FOD6-4	Fresh-Moist Sugar Maple- White Elm Deciduous Forest	<b>Canopy:</b> includes sugar maple, white elm ( <i>Ulmus americana</i> ), green ash, shagbark hickory and Manitoba maple. <b>Understorey:</b> includes common buckthorn and green ash. <b>Ground Cover:</b> river bank grape ( <i>Vitis riparia</i> ).	<ul style="list-style-type: none"> <li>• Tree cover &gt; 60% (FO).</li> <li>• Deciduous trees &gt; 75% of canopy cover (D).</li> <li>• Sugar maple with ash, red maple, white elm, yellow birch, basswood and beech associates (6).</li> <li>• White elm present (-4).</li> <li>• Moist well drained sites, often along floodplains.</li> </ul>
FOD7-2a – b	Fresh-Moist Ash Lowland Deciduous Forest	<b>Canopy:</b> includes red ash, black ash, black walnut, sugar maple and red oak. <b>Understorey:</b> includes red ash, sugar maple, staghorn sumac and bur oak. <b>Ground Cover:</b> includes broad-leaved reed grass ( <i>Cinna latifolia</i> ), enchanter's nightshade, Pennsylvania sedge, inserted Virginia-creeper, reed-canary grass and Canada goldenrod.	<ul style="list-style-type: none"> <li>• Tree cover &gt; 60% (FO).</li> <li>• Deciduous trees &gt; 75% of canopy cover (D).</li> <li>• Elms, Willows, Black Walnut, Black Maple Basswoods dominate separately or in variable mixtures (7).</li> <li>• Ash dominant (-2).</li> </ul>
FOD7-3a – b	Fresh-Moist Willow Lowland Deciduous Forest	<b>Canopy:</b> includes silver maple ( <i>Acer saccharinum</i> ), eastern cottonwood, crack willow ( <i>Salix fragilis</i> ), Manitoba maple, and sycamore ( <i>Platanus occidentalis</i> ). <b>Understorey:</b> includes common buckthorn, staghorn sumac, Manitoba maple, tartarian honeysuckle ( <i>Lonicera tatarica</i> ), and riverbank grape. <b>Ground Cover:</b> includes inserted Virginia-creeper, riverbank grape, goldenrods ( <i>Solidago</i> sp.), Canada rush ( <i>Juncus canadensis</i> ), and wild teasel.	<ul style="list-style-type: none"> <li>• Tree cover &gt; 60% (FO).</li> <li>• Deciduous trees &gt; 75% of canopy cover (D).</li> <li>• Elms, Willows, Black Walnut, Black Maple Basswoods dominate separately or in variable mixtures (7).</li> <li>• Willow dominant (-3).</li> <li>• Resulting from cultural influences (i.e., historical clearing and planting or other disturbances).</li> <li>• Typically associated with riparian zones.</li> </ul>

**TABLE 1.**  
**SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES**

ELC Code	Vegetation Type	Species Association	Community Characteristics
<b>TERRESTRIAL – CULTURAL</b>			
CUM	Cultural Meadow		
CUM1-1a – i	Dry-Moist Old Field Meadow	<p><b>Emergent Trees/Shrubs:</b> includes black walnut, black locust (<i>Robinia pseudo-acacia</i>), hybrid willow (<i>Salix X pendulina</i>), Manitoba maple, sugar maple, red ash, Norway and Colorado spruce (<i>Picea abies</i> and <i>P. pungens</i>), white pine (<i>Pinus strobus</i>), Russian olive (<i>Elaeagnus angustifolia</i>), tartarian honeysuckle, hawthorn (<i>Crataegus</i> spp.), riverbank grape, and common buckthorn.</p> <p><b>Ground Cover:</b> includes smooth brome (<i>Bromus inermis</i>), red fescue (<i>Festuca rubra</i> ssp. <i>rubra</i>) clovers (<i>Trifolium</i> spp.), bluegrasses (<i>Poa</i> spp.), orchard grass (<i>Dactylis glomerata</i>), reed-canary grass, common reed (<i>Phragmites australis</i>), wild teasel, and New England aster (<i>Aster novae-angliae</i>).</p>	<ul style="list-style-type: none"> <li>• Cultural community (CU).</li> <li>• Tree cover and shrub cover ≤ 25% (M).</li> <li>• Mineral soil (1).</li> <li>• This community can occur on a wide range of soil moisture regimes (Dry-Moist) (-1).</li> </ul>
CUT1	Cultural Thicket		
CUT1a - e	Mineral Cultural Thicket	<p><b>Emergent:</b> includes trembling aspen, red oak, bur oak, basswood, and Manitoba maple.</p> <p><b>Understory:</b> includes common buckthorn, gray dogwood, staghorn sumac, scarlet hawthorn, willows, sugar maple and American ash.</p> <p><b>Ground Cover:</b> includes Canada goldenrod, smooth brome, orchard grass, bluegrasses, asters (<i>Symphyotrichum</i> sp.), thistles (<i>Cirsium arvense</i> and <i>C. vulgare</i>), bird’s-foot trefoil (<i>Lotus corniculata</i>), and field sow-thistle (<i>Sonchus arvensis</i>).</p>	<ul style="list-style-type: none"> <li>• Cultural community (CU).</li> <li>• Tree cover &lt;25%; shrub cover &gt;25% (T).</li> <li>• Mineral soil (1).</li> </ul>
CUT1-1	Sumac Cultural Thicket	<p><b>Understorey:</b> includes staghorn sumac and red ash.</p> <p><b>Ground Cover:</b> includes smooth brome, daisy fleabane (<i>Erigeron annuus</i>), ox-eye daisy (<i>Chrysanthemum leucanthemum</i>) and garlic mustard.</p>	<ul style="list-style-type: none"> <li>• Cultural community (CU).</li> <li>• Tree cover &lt;25%; shrub cover &gt;25% (T).</li> <li>• Mineral soil (1).</li> <li>• Sumac dominates (-1).</li> </ul>

**TABLE 1.**  
**SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES**

ELC Code	Vegetation Type	Species Association	Community Characteristics
CUT1-4a – c	Gray Dogwood Cultural Thicket	<p><b>Emergent:</b> includes red oak, bur oak, and red ash.</p> <p><b>Understorey:</b> dominated by gray dogwood, includes scarlet hawthorn, common buckthorn, red raspberry, and riverbank grape.</p> <p><b>Ground Cover:</b> includes smooth brome, bluegrasses, reed canary grass (<i>Phalaris arundinacea</i>), perfoliate thoroughwort (<i>Eupatorium perfoliatum</i>), tufted vetch (<i>Vicia cracca</i>), Canada thistle, white clover (<i>Trifolium repens</i>), Canada goldenrod, giant goldenrod (<i>Solidago gigantea</i>).</p>	<ul style="list-style-type: none"> <li>• Cultural community (CU).</li> <li>• Tree cover &lt;25%; shrub cover &gt;25% (T).</li> <li>• Mineral soil (1).</li> <li>• Gray Dogwood dominates (-1).</li> </ul>
CUM1-1a/CUT1a to CUM1-1c/ CUT1c	Mineral Cultural Meadow/Mineral Cultural Thicket	<p><b>Emergent:</b> includes black walnut, eastern cottonwood, shagbark hickory, sugar maple and Austrian pine (<i>Pinus nigra</i>).</p> <p><b>Understorey:</b> includes Manitoba maple, black walnut, red ash, trembling aspen, common buckthorn, staghorn sumac, and Russian olive.</p> <p><b>Ground Cover:</b> includes reed-canary grass, common reed, Canada goldenrod, purple loosestrife (<i>Lythrum salicaria</i>), common wormwood (<i>Artemisia absinthium</i>), glandular touch-me-not (<i>Impatiens glandulifera</i>), Indian hemp (<i>Apocynum cannabinum</i> var. <i>cannabinum</i>), common St. John's-wort (<i>Hypericum perforatum</i>) and riverbank grape.</p>	<ul style="list-style-type: none"> <li>• Cultural communities (CU).</li> <li>• Tree cover and shrub cover &lt; 25% (M).</li> <li>• Tree cover &lt;25%; shrub cover &gt;25% (T).</li> <li>• Mineral soil (1).</li> <li>• These communities can occur on a wide range of soil moisture regimes (Dry-Moist) (-1).</li> </ul>
CUP	Cultural Plantation		
CUP1	Deciduous Plantation	<p><b>Canopy:</b> includes Norway maple, red ash, basswood, sugar maple and American beech.</p> <p><b>Understorey:</b> includes red ash, staghorn sumac, common buckthorn, black walnut, American beech and shagbark hickory.</p> <p><b>Ground Cover:</b> includes red ash, Canada goldenrod, and riverbank grape.</p>	<ul style="list-style-type: none"> <li>• Cultural community (CU).</li> <li>• Plantation (P).</li> <li>• Deciduous tree species &gt;75% of canopy cover (1).</li> </ul>
CUP1-3	Black Walnut Deciduous Plantation	<p><b>Canopy:</b> includes black walnut, basswood, shagbark hickory and sugar maple.</p> <p><b>Understorey:</b> includes red ash, black walnut, sugar maple and riverbank grape.</p> <p><b>Ground Cover:</b> includes inserted Virginia-creeper, riverbank grape, enchanter's nightshade, Pennsylvania sedge, and orchard grass.</p>	<ul style="list-style-type: none"> <li>• Cultural community (CU).</li> <li>• Plantation (P).</li> <li>• Deciduous tree species &gt;75% of canopy cover (1).</li> <li>• Black Walnut abundant (-3).</li> </ul>

**TABLE 1.**  
**SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES**

ELC Code	Vegetation Type	Species Association	Community Characteristics
CUW	Cultural Woodland		
CUW1a – j	Mineral Cultural Woodland	<p><b>Canopy:</b> includes black walnut, sugar maple, shagbark hickory, bur oak, black locust, and Manitoba maple.</p> <p><b>Understorey:</b> includes common buckthorn, black walnut, bur oak, red ash, Manitoba maple, black locust, and riverbank grape.</p> <p><b>Ground Cover:</b> includes reed canary grass, riverbank grape, Canada goldenrod, red ash, common ragweed (<i>Ambrosia artemisiifolia</i>), horseweed (<i>Conyza canadensis</i>), and smooth brome.</p>	<ul style="list-style-type: none"> <li>• Cultural communities (CU).</li> <li>• 35% &lt; tree cover ≤ 60% (W).</li> <li>• Mineral Soil (1).</li> </ul>
CUT1/ CUW1	Mineral Cultural Thicket/Mineral Cultural Woodland	<p><b>Canopy:</b> examples include white elm, Manitoba maple, sugar maple, black walnut and basswood.</p> <p><b>Understorey:</b> examples include common buckthorn, honeysuckles, Manitoba maple and black walnut.</p> <p><b>Ground Cover:</b> includes smooth brome, bluegrasses, Canada goldenrod, and wild carrot (<i>Daucus carota</i>).</p>	<ul style="list-style-type: none"> <li>• Cultural communities (CU).</li> <li>• Tree cover &lt;25%; shrub cover &gt;25% (T).</li> <li>• 35% &lt; tree cover ≤ 60% (W).</li> <li>• Mineral soil (1).</li> </ul>
<b>WETLAND</b>			
MAM	Meadow Marsh		
MAM2	Mineral Meadow Marsh	<p><b>Emergent:</b> includes common buckthorn.</p> <p><b>Ground cover:</b> dominated by reed-canary grass and included wild parsnip (<i>Pastinaca sativa</i>) and calico aster (<i>Aster lateriflorus</i> var. <i>lateriflorus</i>).</p>	<ul style="list-style-type: none"> <li>• Tree or shrub cover &lt;25% (MA).</li> <li>• Flooding seasonal, species less tolerant of prolonged flooding (M).</li> </ul>
MAM2-2a – n	Reed-canary Grass Mineral Meadow Marsh	<p><b>Emergent:</b> includes Manitoba maple, white elm, red ash, Missouri willow (<i>Salix eriocephala</i>), white willow (<i>Salix alba</i>) and crack willow.</p> <p><b>Ground cover:</b> dominated by reed-canary grass and includes purple loosestrife (<i>Lythrum salicaria</i>), common reed, cattails, blue vervain (<i>Verbena hastata</i>), American great bulrush (<i>Scirpus validus</i>), elecampane (<i>Inula helenium</i>), and tall white aster (<i>Aster lanceolatus</i> ssp. <i>lanceolatus</i>).</p>	<ul style="list-style-type: none"> <li>• Tree or shrub cover &lt;25% (MA).</li> <li>• Flooding seasonal, species less tolerant of prolonged flooding (M).</li> <li>• Mineral soil (2).</li> <li>• Reed-canary grass dominant (-2).</li> </ul>

**TABLE 1.**  
**SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES**

ELC Code	Vegetation Type	Species Association	Community Characteristics
MAM2-10	Forb Mineral Meadow Marsh	<p><b>Emergent:</b> includes European black alder (<i>Alnus glutinosa</i>) willows, and tartarian honeysuckle.</p> <p><b>Ground cover:</b> includes spotted joe-pye-weed (<i>Eupatorium maculatum</i> ssp. <i>maculatum</i>), purple loosestrife, spotted touch me not, spotted water-hemlock (<i>Cicuta maculate</i>), and reed canary grass.</p> <p><b>Floating-leaved and submerged macrophytes (inclusion):</b> a few floating plants were also observed as rare to occasional and includes common water-plantain (<i>Alisma plantago-aquatica</i>) and broad-leaved arrowhead (<i>Sagittaria latifolia</i>).</p>	<ul style="list-style-type: none"> <li>• Tree or shrub cover &lt;25% (MA).</li> <li>• Flooding seasonal, species less tolerant of prolonged flooding (M).</li> <li>• Mineral soil (2).</li> <li>• Forbs are dominant (-10).</li> </ul>
MAS	Shallow Marsh		
MAS2a – b	Mineral Shallow Marsh	<p><b>Emergent:</b> includes white willow, Manitoba maple, black walnut, eastern white cedar, common buckthorn, gray dogwood and red-osier dogwood.</p> <p><b>Ground cover:</b> includes common reed, reed canary grass, narrow-leaved cattail (<i>Typha angustifolia</i>), purple loosestrife, and common milkweed (<i>Asclepias syriaca</i>).</p>	<ul style="list-style-type: none"> <li>• Tree or shrub cover ≤25% (MA).</li> <li>• Water up to 2 m deep, with standing or flowing water for much of the growing season (S).</li> <li>• Mineral soil (2).</li> <li>• Dominated by emergent hydrophytic macrophytes.</li> </ul>
MAS2-1a - m	Cattail Mineral Shallow Marsh	<p><b>Emergent:</b> includes crack willow, Freeman’s maple, silver maple and white elm.</p> <p><b>Understory:</b> includes white elm and common buckthorn.</p> <p><b>Ground cover:</b> dominated by cattails (<i>Typha anugstifolia</i> and <i>T. latifolia</i>), includes reed canary grass, purple loosestrife, common reed, wild teasel, rough-fruited cinquefoil (<i>Potentilla recta</i>), and blue vervain.</p>	<ul style="list-style-type: none"> <li>• Tree or shrub cover ≤25% (MA).</li> <li>• Water up to 2 m deep, with standing or flowing water for much of the growing season (S).</li> <li>• Mineral soil (2).</li> <li>• Cattails are dominant (-1).</li> <li>• Dominated by emergent hydrophytic macrophytes.</li> </ul>
MAS2-9	Forb Mineral Shallow Marsh	<p><b>Ground cover:</b> American great bulrush (<i>Scirpus validus</i>), rush (<i>Juncus</i> sp.), cut-leaved water-horehound (<i>Lycopus americanus</i>), mouse-ear scorpion grass (<i>Myosotis scorpioides</i>), and spotted touch me not (<i>Impatiens capensis</i>).</p> <p><b>Floating-leaved and submerged macrophytes (inclusion):</b> a few floating plants were also observed as rare to occasional and includes common water-plantain (<i>Alisma plantago-aquatica</i>) and common floating pondweed (<i>Potamogeton natans</i>).</p>	<ul style="list-style-type: none"> <li>• Tree or shrub cover ≤25% (MA).</li> <li>• Water up to 2 m deep, with standing or flowing water for much of the growing season (S).</li> <li>• Mineral soil (2).</li> <li>• Forbs are dominant (-9).</li> <li>• Dominated by emergent hydrophytic macrophytes.</li> </ul>

**TABLE 1.**  
**SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES**

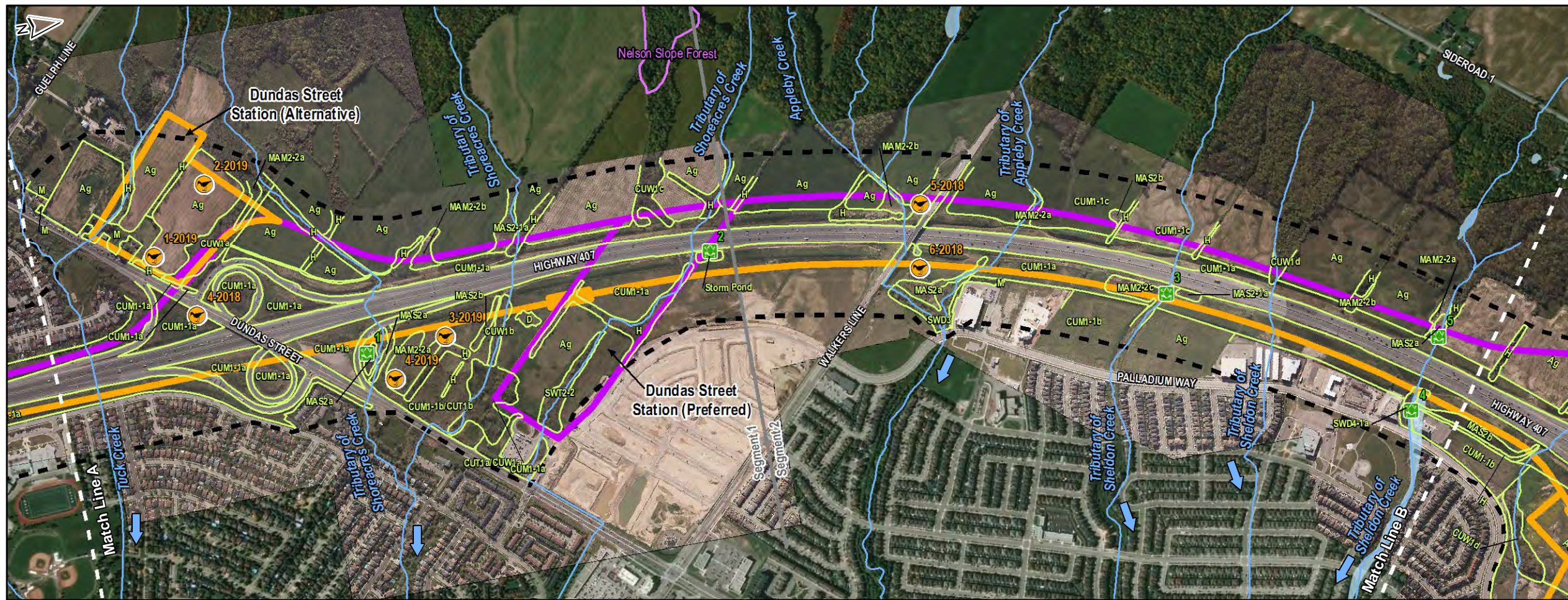
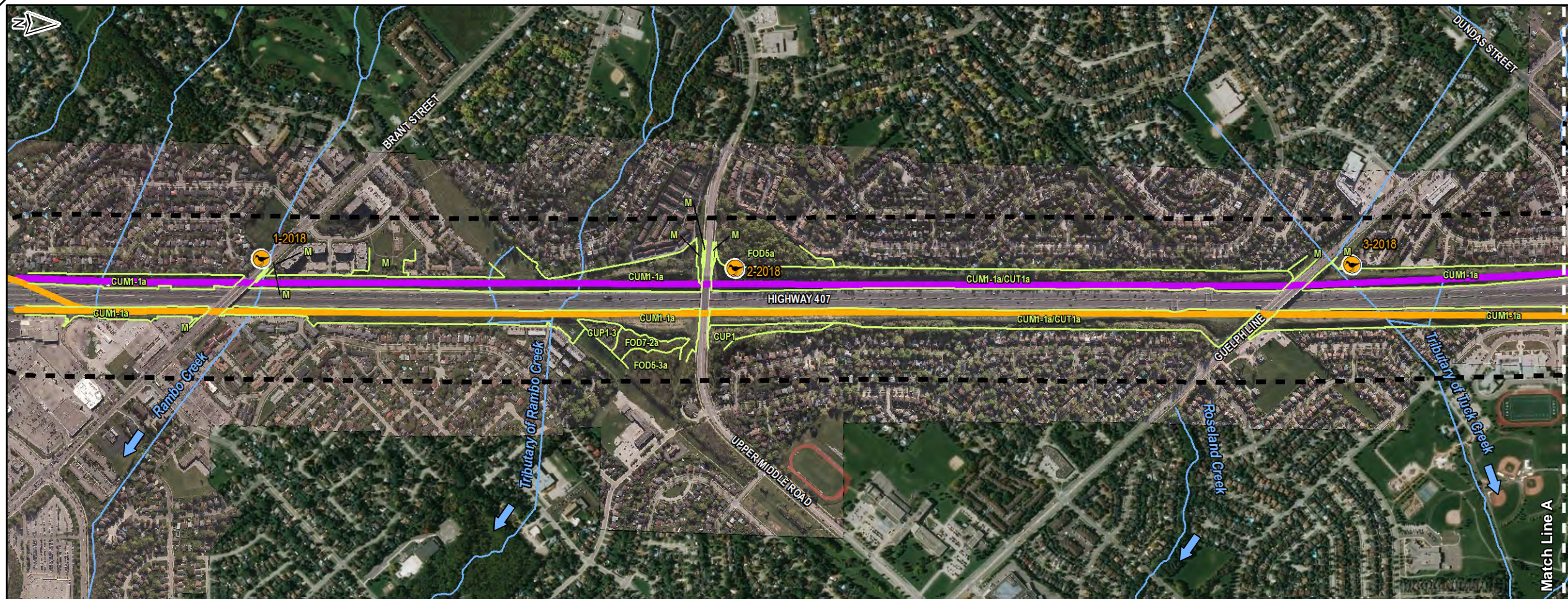
ELC Code	Vegetation Type	Species Association	Community Characteristics
MAS2a/MAM2a– MAS2c/MAM2c	Mineral Shallow Marsh/Mineral Meadow Marsh	<b>Emergent:</b> includes willows, Manitoba maple, red ash and common buckthorn. <b>Ground cover:</b> includes reed canary grass, common reed, and purple loosestrife.	<ul style="list-style-type: none"> <li>• Tree or shrub cover <math>\leq 25\%</math> (MA).</li> <li>• Water up to 2 m deep, with standing or flowing water for much of the growing season (S).</li> <li>• Flooding seasonal, species less tolerant of prolonged flooding (M).</li> <li>• Mineral soil (2).</li> <li>• Dominated by emergent hydrophytic macrophytes.</li> </ul>
MAS2-1/SWT2	Cattail Mineral Shallow Marsh/Mineral Thicket Swamp	<b>Emergent:</b> includes willows and red ash. <b>Understory:</b> includes sandbar willow ( <i>Salix exigua</i> ), pussy willow ( <i>Salix discolor</i> ), and red ash. <b>Ground cover:</b> includes narrow-leaved cattail and broad-leaved cattail ( <i>Typha latifolia</i> ), reed canary grass, purple loosestrife.	<ul style="list-style-type: none"> <li>• Tree or shrub cover <math>\leq 25\%</math> (MA).</li> <li>• Water up to 2 m deep, with standing or flowing water for much of the growing season (S).</li> <li>• Cattails are dominant (-1).</li> <li>• Dominated by emergent hydrophytic macrophytes.</li> <li>• Tree or shrub cover <math>&gt; 25\%</math> with variable flooding regimes (SW).</li> <li>• Tree cover <math>\leq 25\%</math>; hydrophytic shrubs <math>&gt; 25\%</math> (T).</li> <li>• Mineral soil (2).</li> </ul>
SWT			
SWT2-2	Willow Mineral Thicket Swamp	<b>Emergent:</b> includes Freeman’s maple, white elm and Manitoba maple. <b>Understory:</b> includes Missouri willow, Manitoba maple, black walnut, and white elm. <b>Ground cover:</b> includes purple loosestrife, path rush ( <i>Juncus tenuis</i> ), awl-fruited sedge ( <i>Carex stipata</i> ) and black-eyed Susan ( <i>Rudbeckia hirta</i> ).	<ul style="list-style-type: none"> <li>• Tree or shrub cover <math>&gt; 25\%</math> and dominated by hydrophytic shrub and tree species (SW).</li> <li>• Deciduous tree cover <math>\leq 25\%</math>; hydrophytic shrubs <math>&gt; 25\%</math> (T).</li> <li>• Mineral soil (2).</li> <li>• Willows are dominant (-2).</li> </ul>
SWD			
SWD2-2a - c	Green Ash Mineral Deciduous Swamp	<b>Canopy:</b> includes red ash and Manitoba maple. <b>Understory:</b> includes red ash, Manitoba maple, common buckthorn. <b>Ground cover:</b> includes reed canary grass.	<ul style="list-style-type: none"> <li>• Tree or shrub cover <math>&gt; 25\%</math> and dominated by hydrophytic shrub and tree species (SW).</li> <li>• Deciduous tree cover <math>&gt; 75\%</math> of canopy cover (D).</li> <li>• Mineral soils and Ash dominant (2).</li> <li>• Green Ash is dominant (-2).</li> </ul>



**TABLE 1.**  
**SUMMARY OF ECOLOGICAL LAND CLASSIFICATION COMMUNITIES**

ELC Code	Vegetation Type	Species Association	Community Characteristics
SWD3	Maple Mineral Deciduous Swamp	<p><b>Canopy:</b> includes silver maple, white willow, Manitoba maple, and trembling aspen.</p> <p><b>Understory:</b> includes sandbar willow, pussy willow, Manitoba maple, red-osier dogwood, and fragrant sumac (<i>Rhus aromatica</i>).</p> <p><b>Ground cover:</b> includes spotted touch-me-not, giant goldenrod, garlic mustard, Canada goldenrod, and field sow-thistle.</p>	<ul style="list-style-type: none"> <li>• Tree or shrub cover &gt;25% and dominated by hydrophytic shrub and tree species (SW).</li> <li>• Deciduous tree cover &gt;75% of canopy cover (D).</li> <li>• Mineral soils and Maple dominant (3).</li> </ul>
SWD4-1a - b	Willow Mineral Deciduous Swamp	<p><b>Canopy:</b> includes willows, eastern cottonwood, black locust and basswood.</p> <p><b>Understory:</b> includes willows, round-leaved dogwood (<i>Cornus rugosa</i>), red-osier dogwood, common buckthorn and black locust.</p> <p><b>Ground cover:</b> includes common reed, reed canary grass, cattails, wild carrot, Canada bluegrass (<i>Poa compressa</i>), blue vervain and purple loosestrife.</p>	<ul style="list-style-type: none"> <li>• Tree or shrub cover &gt;25% and dominated by hydrophytic shrub and tree species (SW).</li> <li>• Deciduous tree cover &gt;75% of canopy cover (D).</li> <li>• Mineral soils and less common associates of willow, white elm, birch and aspen (4).</li> <li>• Willows dominant (-1).</li> </ul>
OAD	Open Aquatic		
OAD	Open Aquatic		<ul style="list-style-type: none"> <li>• Water depth &gt;2 m (O).</li> <li>• No macrophyte vegetation, no tree or shrub cover (A).</li> <li>• Plankton dominated (O).</li> </ul>
OTHER*	Manicured and Hedgerow		
M and H	Manicured grasses and planted shrubs and/or trees	<p>Areas where large expanses of grass/shrubs/trees are maintained and/or planted.</p> <p><b>Planted/established trees/shrubs:</b> includes sugar maple, red ash, red oak, black walnut, eastern cottonwood, hybrid willow, Norway maple (<i>Acer platanoides</i>), silver variegated dogwood (<i>Cornus alba 'elegantissima'</i>), Japanese Yew (<i>Taxus cuspidata</i>), Japanese knotweed (<i>Polygonum cuspidatum</i>), shagbark hickory, eastern white cedar, Colorado spruce, Norway spruce, and scotch pine (<i>Pinus sylvestris</i>), hawthorns (<i>Crataegus</i> spp.), honeysuckles (<i>Lonicera</i> spp.), staghorn sumac, and common buckthorn.</p> <p><b>Grasses:</b> includes bluegrasses, smooth brome, reed-canary grass, Canada goldenrod, garlic mustard, yellow avens, thistles.</p>	

\*Not identified by the ELC.



**LEGEND**

- Study Area
- Preferred Design
- Alternative Design
- Maintenance and Storage Facility
- Breeding Bird Point Count Station
- Anuran Monitoring Station
- Watercourse
- ANSI Earth Science
- ANSI Life Science
- Wetland Evaluated - Other
- Wetland Evaluated - Provincial
- Wetland not evaluated per OWES
- Environmentally Significant Area (CVC)
- Vegetation Communities
- Vegetation Community Boundary

**Vegetation Communities**

- Ag** Agricultural
- BL01** Mineral Open Bluff Ecosite
- CUM1-1 (a-d)** Dry-Moist Old Field Meadow Deciduous Plantation
- CUP1** Black Walnut Deciduous Plantation Type
- CUP1-1** Mineral Cultural Thicket
- CUP1-2** Sumac Shrub Thicket Type
- CUP1-3** Gray Dogwood Shrub Thicket Type
- CUM1-1 (a-d)** Mineral Cultural Woodland Ecosite
- D** Disturbed
- FOD2-1** Dry-Fresh White Cedar Coniferous Forest Type
- FOD2-2a** Dry-Fresh Oak-Hickory Deciduous Forest Type
- FOD2-4 (a,b)** Dry-Fresh Oak-Hardwood Deciduous Forest Type
- FOD3 (a,b)** Dry-Fresh Sugar Maple Deciduous Forest Ecosite
- FOD3-1 (a,b)** Dry-Fresh Sugar Maple Deciduous Forest Type
- FOD3-2** Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
- FOD3-3 (a-d)** Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- FOD3-4** Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
- FOD5-1** Fresh-Moist Sugar Maple-Black Maple Deciduous Forest Type
- FOD5-2** Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
- FOD7-1 (a,b)** Fresh-Moist Ash Lowland Deciduous Forest Type
- FOD7-2 (a,b)** Fresh-Moist Willow Lowland Deciduous Forest Type
- H** Hedgerow
- M** Manicured
- MAM2 (a-d)** Mineral Meadow Marsh Ecosite
- MAM2-1 (a-d)** Reed-canary Grass Mineral Meadow Marsh Type
- MAM2-10** Mixed Forb Mineral Meadow Marsh Type
- MAM2-11** Mineral Shallow Marsh Ecosite
- MAM2-1 (a-d)** Cattail Mineral Shallow Marsh Type
- MAM2-1 (a-m)** Forb Mineral Shallow Marsh Type
- MAM2-1 (a-m)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- MAM2-1 (a-m)** Open Aquatic
- QAO** Green Ash Mineral Deciduous Swamp Type
- SWD2-1 (a-d)** Maple Mineral Deciduous Swamp Ecosite
- SWD3** Willow Mineral Deciduous Swamp Type
- SWD4-1 (a,b)** Willow Mineral Thicket Swamp Type
- SWD2-2** Willow Mineral Thicket Swamp Type

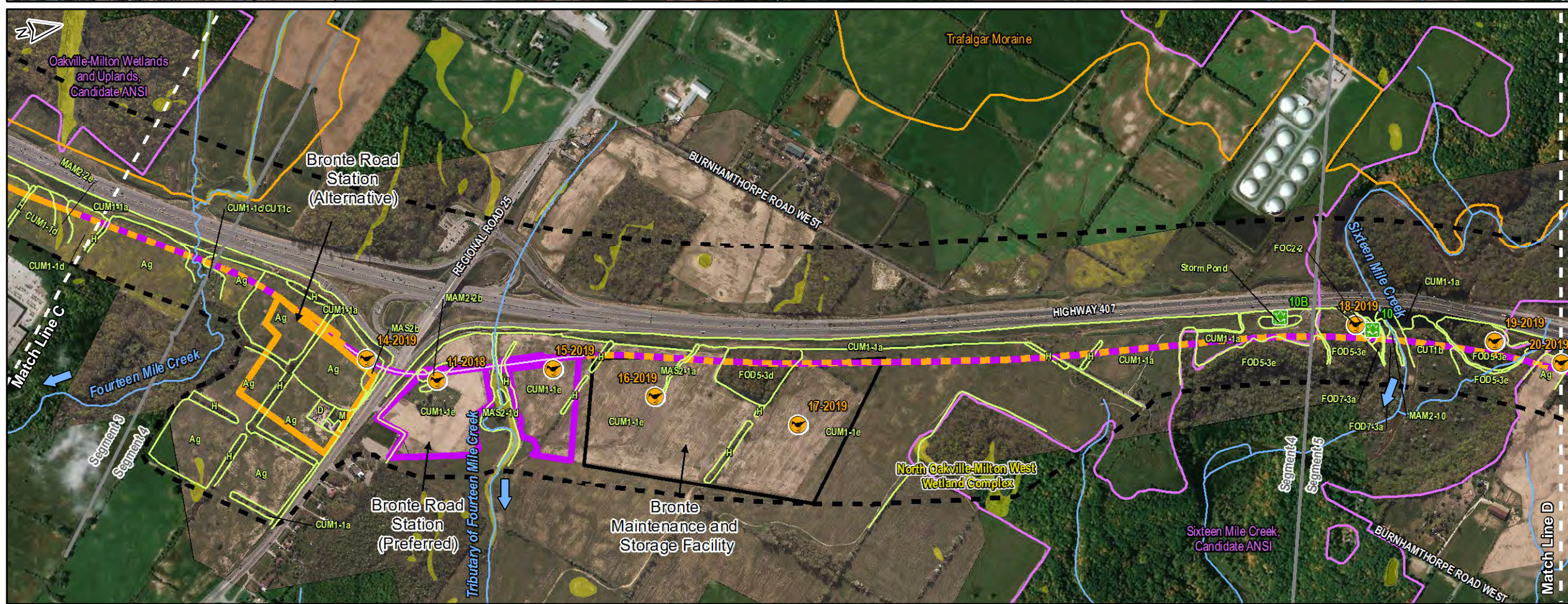
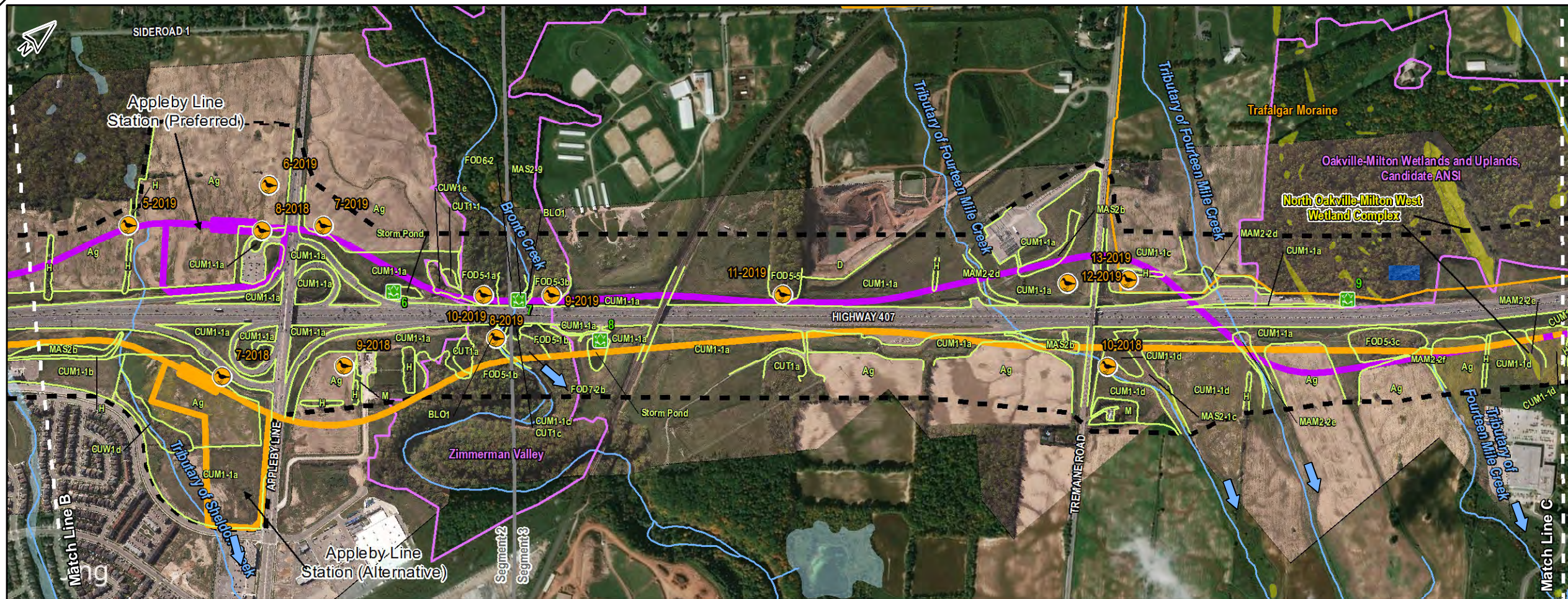
Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.

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**407 TRANSITWAY WEST -  
NATURAL HERITAGE/  
EXISTING CONDITIONS**



<b>Project:</b> TA8733	<b>Figure:</b> 2a
<b>Date:</b> October, 2019	<b>Prepared By:</b> JJP
<b>Scale:</b> 1 : 12,000	<b>Checked By:</b> SK



**LEGEND**

- Study Area
- Preferred Design
- Alternative Design
- Maintenance and Storage Facility
- Breeding Bird Point Count Station
- Anuran Monitoring Station
- Watercourse
- ANSI Earth Science
- ANSI Life Science
- Wetland Evaluated - Other
- Wetland Evaluated - Provincial
- Wetland not evaluated per OWES
- Environmentally Significant Area (CVC)
- Vegetation Communities
- Vegetation Community Boundary

**Vegetation Communities**

- Ag Agricultural
- BL01 Mineral Open Bluff Ecosite
- CUM1-1(a) Dry-Moist Old Field Meadow
- CUP1 Deciduous Plantation
- CUP1-1 Black Walnut Deciduous Plantation Type
- CUT1(a) Mineral Cultural Thicket
- CUT1-1 Sumac Shrub Thicket Type
- CUT1-1(a) Gray Dogwood Shrub Thicket Type
- CUT1-1(b) Mineral Cultural Woodland Ecosite
- D Disturbed
- FOD2-2 Dry-Fresh White Cedar Coniferous Forest Type
- FOD2-2a Dry-Fresh Oak-Hickory Deciduous Forest Type
- FOD2-4(a,b) Dry-Fresh Oak-Hardwood Deciduous Forest Type
- FOD3(a,b) Dry-Fresh Sugar Maple Deciduous Forest Ecosite
- FOD3-1(a,b) Dry-Fresh Sugar Maple Deciduous Forest Type
- FOD3-2 Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
- FOD3-3 Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- FOD3-4 Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
- FOD5-2 Fresh-Moist Sugar Maple-Black Maple Deciduous Forest Type
- FOD5-4 Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
- FOD7-2(a,b) Fresh-Moist Ash Lowland Deciduous Forest Type
- FOD7-3(a,b) Fresh-Moist Willow Lowland Deciduous Forest Type
- H Hedgerow
- M Manicured
- MAM2(a-d) Mineral Meadow Marsh Ecosite
- MAM2-1(a-d) Reed-canary Grass Mineral Meadow Marsh Type
- MAM2-10 Mixed Forb Mineral Meadow Marsh Type
- MAS2(a-d) Mineral Shallow Marsh Ecosite
- MAS2-1(a-d) Cattail Mineral Shallow Marsh Type
- MAS2-9 Forb Mineral Shallow Marsh Type
- MAS2-10(a) Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- MAS2-10SW2 Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- OAO Open Aquatic
- SWD2(a-d) Green Ash Mineral Deciduous Swamp Type
- SWD3 Maple Mineral Deciduous Swamp Ecosite
- SWD4(a,b) Willow Mineral Deciduous Swamp Type
- SWD2-2 Willow Mineral Thicket Swamp Type

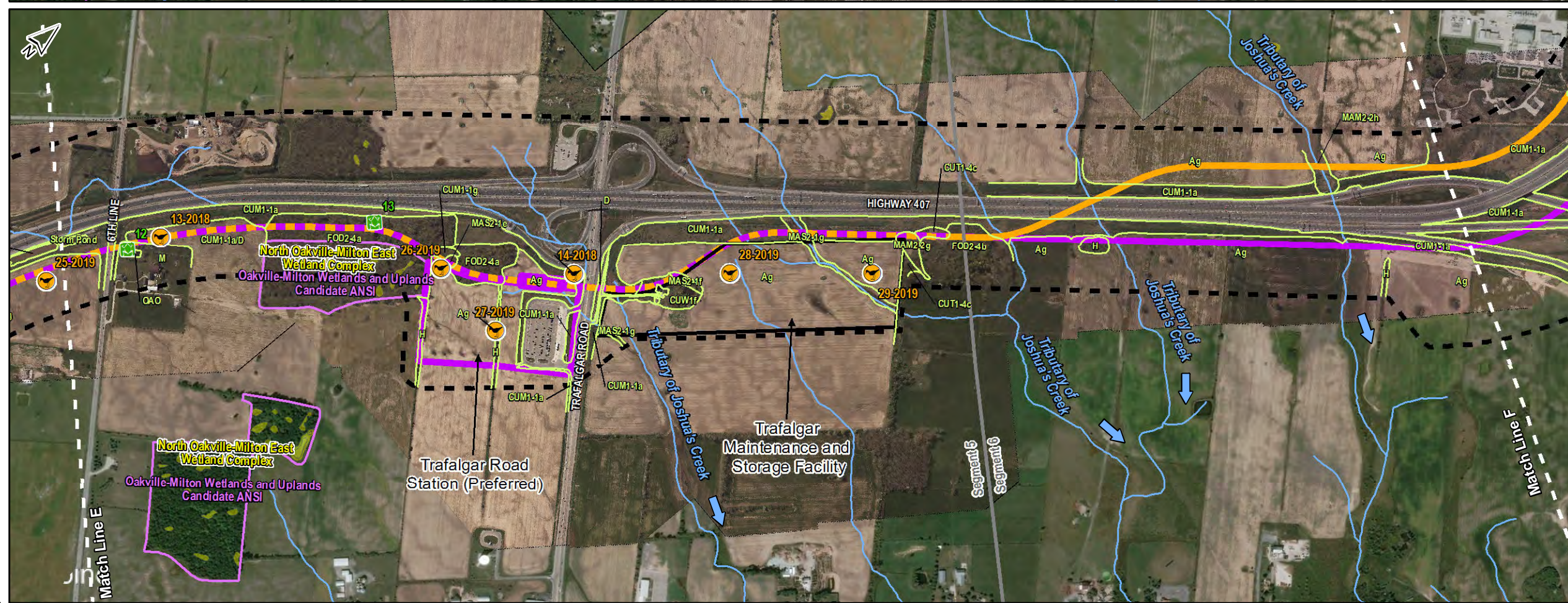
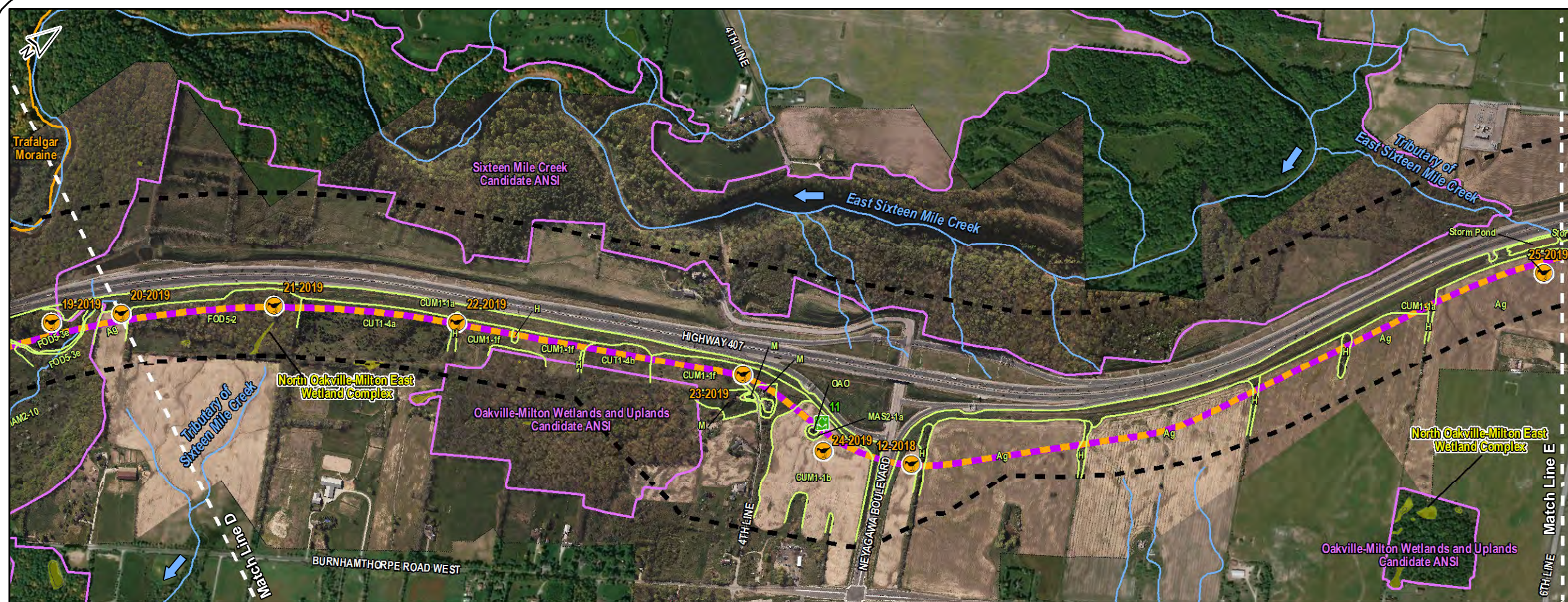
Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.

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407 TRANSITWAY WEST -  
NATURAL HERITAGE/  
EXISTING CONDITIONS



Project: TA8733	Figure: 2b
Date: October, 2019	Prepared By: JJP
Scale: 1 : 12,000	Checked By: SK



**LEGEND**

- Study Area
- Preferred Design
- Alternative Design
- Maintenance and Storage Facility
- Breeding Bird Point Count Station
- Anuran Monitoring Station
- Watercourse
- ANSI, Earth Science
- ANSI, Life Science
- Wetland Evaluated - Other
- Wetland Evaluated - Provincial
- Wetland not evaluated per OWES
- Environmentally Significant Area (CVC)
- Vegetation Communities
- Vegetation Community Boundary

**Vegetation Communities**

- Ag Agricultural
- BL01 Mineral Open Bluff Ecosite
- CUM1-1 (p-1) Dry-Moist Old Field Meadow Deciduous Plantation
- CUP1 Deciduous Plantation
- CUP1-1 Black Walnut Deciduous Plantation Type
- CUM1 (p-1) Mineral Cultural Thicket
- CUM1-1 Sumac Shrub Thicket Type
- CUM1-1 (p-1) Gray Dogwood Shrub Thicket Type
- CUM1 (p-1) Mineral Cultural Woodland Ecosite
- D Disturbed
- FOD2-2 Dry-Fresh White Cedar Coniferous Forest Type
- FOD2-2a Dry-Fresh Oak-Hickory Deciduous Forest Type
- FOD2-4 (a,b) Dry-Fresh Oak-Hardwood Deciduous Forest Type
- FOD3 (p-1) Dry-Fresh Sugar Maple Deciduous Forest Ecosite
- FOD3-1 (a,b) Dry-Fresh Sugar Maple Deciduous Forest Type
- FOD3-2 Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
- FOD3-3 Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- FOD3-4 Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
- FOD3-5 Fresh-Moist Sugar Maple-Black Maple Deciduous Forest Type
- FOD3-6 Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
- FOD4-1 Fresh-Moist Ash Lowland Deciduous Forest Type
- FOD4-2 (a,b) Fresh-Moist Willow Lowland Deciduous Forest Type
- H Hedgerow
- M Manicured
- MAM2 (p-1) Mineral Meadow Marsh Ecosite
- MAM2-1 (p-1) Reed-canary Grass Mineral Meadow Marsh Type
- MAM2-10 Mixed Forb Mineral Meadow Marsh Type
- MAM2-11 Mineral Shallow Marsh Ecosite
- MAM2-1 (p-1) Cattail Mineral Shallow Marsh Type
- MAM2-1 (p-1) Forb Mineral Shallow Marsh Type
- MAM2-1 (p-1) Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- MAM2-1 (p-1) Swamp Ecosite
- OAO Open Aquatic
- SWD2-2 (p-1) Green Ash Mineral Deciduous Swamp Type
- SWD3 Maple Mineral Deciduous Swamp Ecosite
- SWD4-1 (a,b) Willow Mineral Deciduous Swamp Type
- SWD2-2 Willow Mineral Thicket Swamp Type

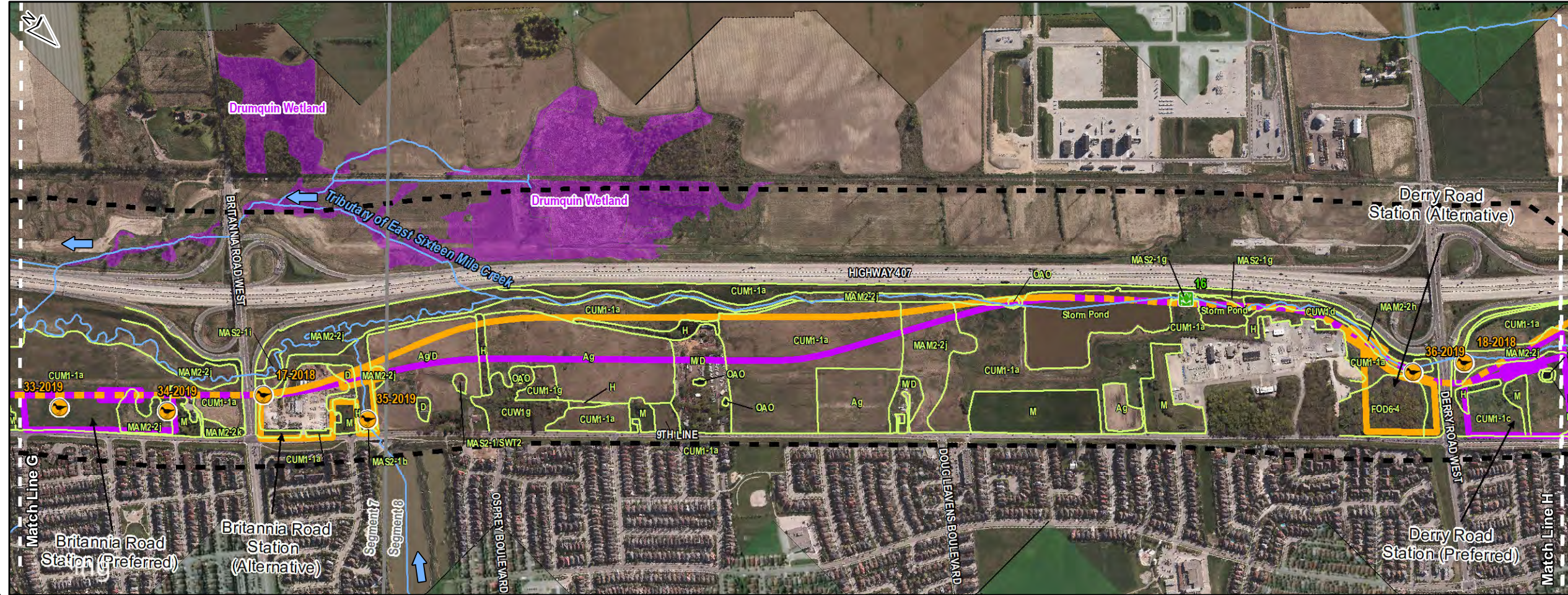
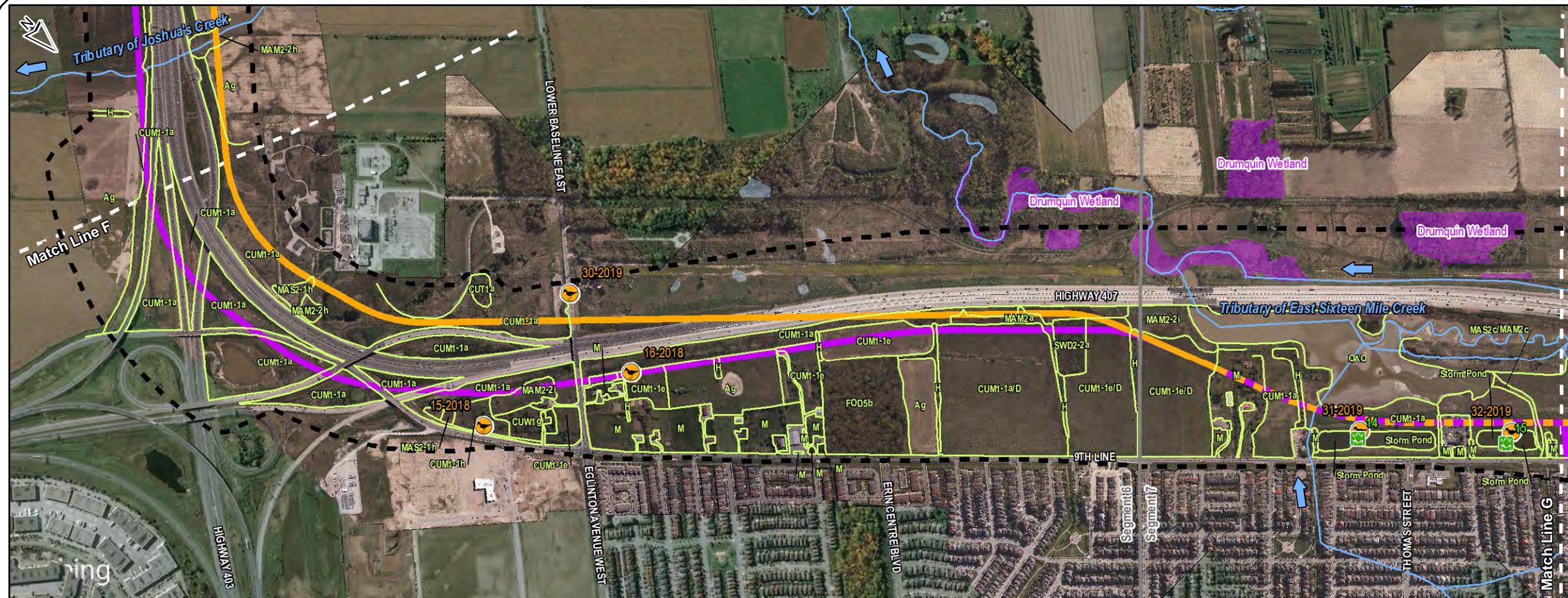
Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.

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407 TRANSITWAY WEST -  
NATURAL HERITAGE/  
EXISTING CONDITIONS



Project: TA8733	Figure: 2c
Date: October, 2019	Prepared By: JJP
Scale: 1 : 12,000	Checked By: SK



**LEGEND**

- Study Area
- Preferred Design
- Alternative Design
- Maintenance and Storage Facility
- Breeding Bird Point Count Station
- Anuran Monitoring Station
- Watercourse
- ANSI Earth Science
- ANSI Life Science
- Wetland Evaluated - Other
- Wetland Evaluated - Provincial
- Wetland not evaluated per OWES
- Environmentally Significant Area (CVC)
- Vegetation Communities**
- Vegetation Community Boundary
- Ag** Agricultural
- BL01** Mineral Open Bluff Ecosite
- CUM1-1 (a-d)** Dry-Moist Old Field Meadow Deciduous Plantation
- CUP1-0** Black Walnut Deciduous Plantation Type
- CUM1 (a-c)** Mineral Cultural Thicket
- CUM1-1** Sumac Shrub Thicket Type
- CUM1-1 (a-c)** Gray Dogwood Shrub Thicket Type
- CUM1 (a-d)** Mineral Cultural Woodland Ecosite
- D** Disturbed
- FOD2-2** Dry-Fresh White Cedar Coniferous Forest Type
- FOD2-2a** Dry-Fresh Oak-Hickory Deciduous Forest Type
- FOD2-4 (a,b)** Dry-Fresh Oak-Hardwood Deciduous Forest Type
- FOD3 (a,b)** Dry-Fresh Sugar Maple Deciduous Forest Ecosite
- FOD3-1 (a,b)** Dry-Fresh Sugar Maple Deciduous Forest Type
- FOD3-2** Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
- FOD3-3 (a-c)** Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- FOD3-4** Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
- FOD5-2** Fresh-Moist Sugar Maple-Black Maple Deciduous Forest Type
- FOD5-4** Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
- FOD7-2 (a,b)** Fresh-Moist Ash Lowland Deciduous Forest Type
- FOD7-4 (a,b)** Fresh-Moist Willow Lowland Deciduous Forest Type
- H** Hedgerow
- M** Manicured
- MAM2 (a-c)** Mineral Meadow Marsh Ecosite
- MAM2-1 (a-c)** Reed-canary Grass Mineral Meadow Marsh Type
- MAM2-10** Mixed Forb Mineral Meadow Marsh Type
- MAM2 (a-c)** Mineral Shallow Marsh Ecosite
- MAM2-1 (a-c)** Cattail Mineral Shallow Marsh Type
- MAM2-0** Forb Mineral Shallow Marsh Type
- MAM2-1 (a-c)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- MAM2-1/SWT2** Swamp Ecosite
- OAO** Open Aquatic
- SWD2-2 (a-c)** Green Ash Mineral Deciduous Swamp Type
- SWD6** Maple Mineral Deciduous Swamp Ecosite
- SWD4-1 (a,b)** Willow Mineral Deciduous Swamp Type
- SWD2-2** Willow Mineral Thicket Swamp Type

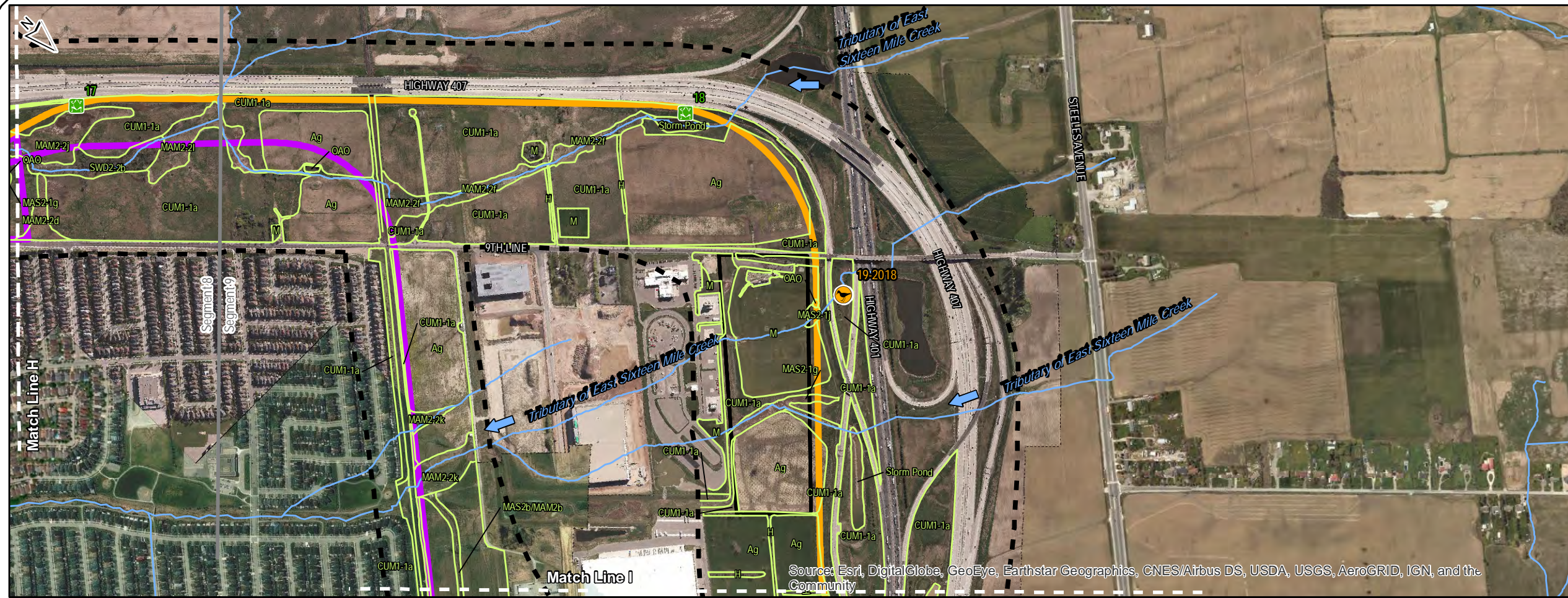
Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.

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Meters

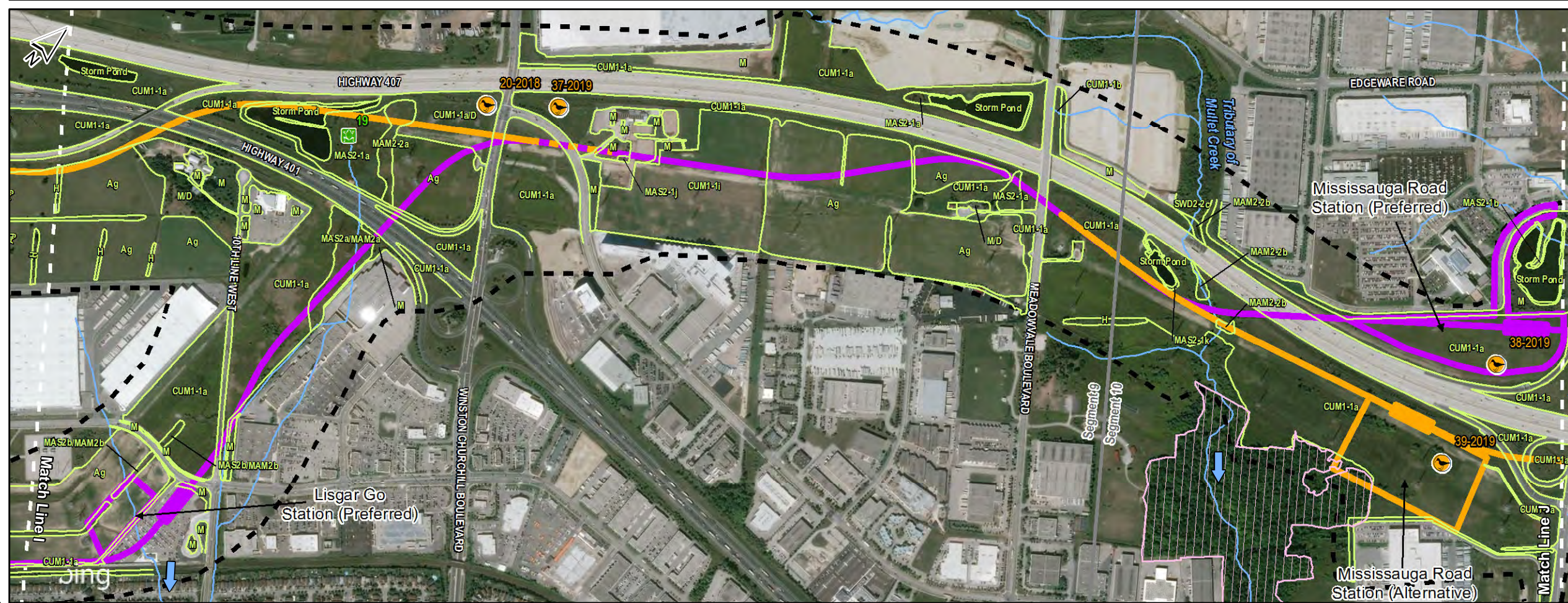
**407 TRANSITWAY WEST -  
NATURAL HERITAGE/  
EXISTING CONDITIONS**



Project: TA8733	Figure: 2d
Date: March, 2020	Prepared By: JJP
Scale: 1 : 12,000	Checked By: SK



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the Community



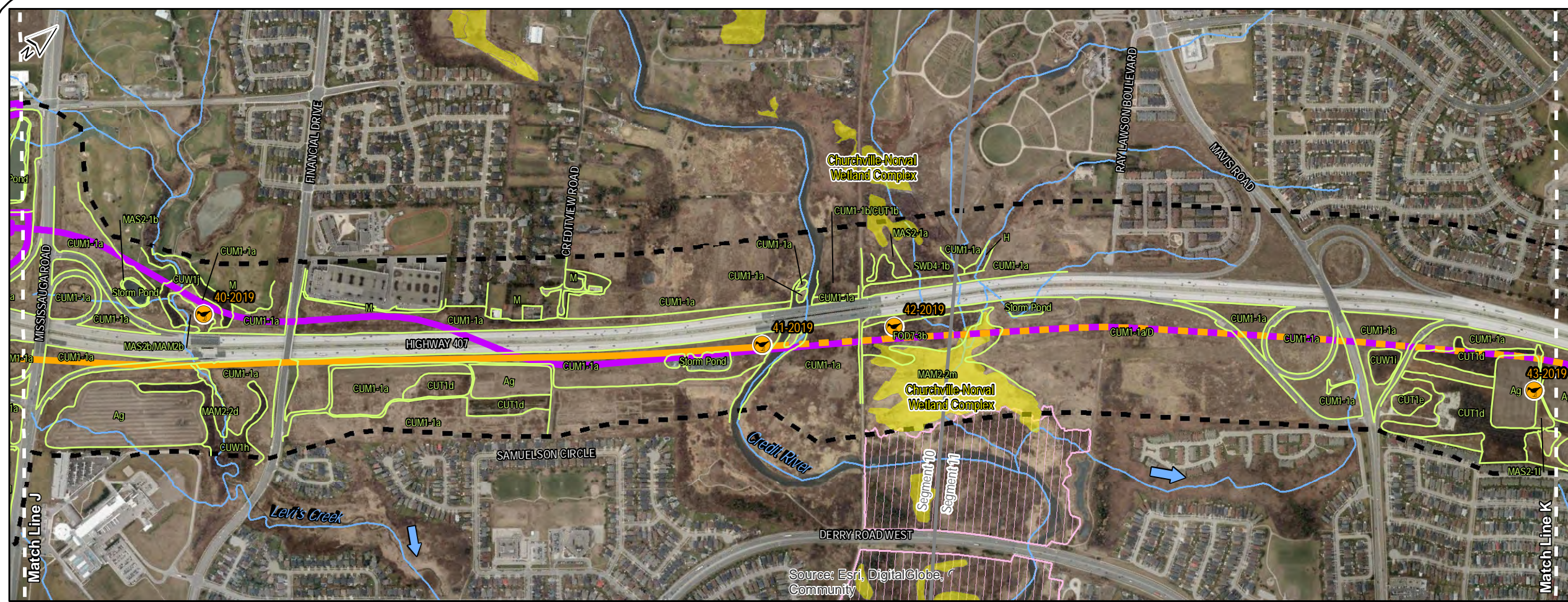
**LEGEND**

- Study Area
  - Preferred Design
  - Alternative Design
  - Maintenance and Storage Facility
  - Breeding Bird Point Count Station
  - Anuran Monitoring Station
  - Watercourse
  - ANSI Earth Science
  - ANSI Life Science
  - Wetland Evaluated - Other
  - Wetland Evaluated - Provincial
  - Wetland not evaluated per OWES
  - Environmentally Significant Area (CVC)
  - Vegetation Communities**
  - Vegetation Community Boundary
  - Ag** Agricultural
  - BL01** Mineral Open Bluff Ecosite
  - CUM1-1 (a-d)** Dry-Moist Old Field Meadow Deciduous Plantation
  - CUP1-1** Black Walnut Deciduous Plantation Type
  - CUM1 (a-c)** Mineral Cultural Thicket
  - CUM1-1** Sumac Shrub Thicket Type
  - CUM1-1 (a-c)** Gray Dogwood Shrub Thicket Type
  - CUM1 (a-d)** Mineral Cultural Woodland Ecosite
  - D** Disturbed
  - FO02-2** Dry-Fresh White Cedar Coniferous Forest Type
  - FO02-2a** Dry-Fresh Oak-Hickory Deciduous Forest Type
  - FO02-4 (a,b)** Dry-Fresh Oak-Hardwood Deciduous Forest Type
  - FO03 (a,b)** Dry-Fresh Sugar Maple Deciduous Forest Ecosite
  - FO03-1 (a,b)** Dry-Fresh Sugar Maple Deciduous Forest Type
  - FO03-2** Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
  - FO03-3 (a-c)** Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
  - FO03-4** Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
  - FO04-2** Fresh-Moist Sugar Maple-Black Maple Deciduous Forest Type
  - FO04-4** Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
  - FO07-2 (a,b)** Fresh-Moist Ash Lowland Deciduous Forest Type
  - FO07-4 (a,b)** Fresh-Moist Willow Lowland Deciduous Forest Type
  - H** Hedgerow
  - M** Manicured
  - MAM2 (a-d)** Mineral Meadow Marsh Ecosite
  - MAM2-1 (a-d)** Reed-canary Grass Mineral Meadow Marsh Type
  - MAM2-10** Mixed Forb Mineral Meadow Marsh Type
  - MAM2 (a-c)** Mineral Shallow Marsh Ecosite
  - MAM2-1 (a-c)** Cattail Mineral Shallow Marsh Type
  - MAM2-1 (a-m)** Forb Mineral Shallow Marsh Type
  - MAM2-1 (a-m)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
  - MAM2-1 (a-m)** Swamp Ecosite
  - MA01** Open Aquatic
  - SWD2-2 (a-c)** Green Ash Mineral Deciduous Swamp Type
  - SWD2-2 (a-c)** Maple Mineral Deciduous Swamp Ecosite
  - SWD2-2 (a-c)** Willow Mineral Deciduous Swamp Type
  - SWD2-2 (a,b)** Willow Mineral Thicket Swamp Type
  - SWD2-2** Willow Mineral Thicket Swamp Type
- Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.

**407 TRANSITWAY WEST -  
NATURAL HERITAGE/  
EXISTING CONDITIONS**



<b>Project:</b> TA8733	<b>Figure:</b> 2e
<b>Date:</b> October, 2019	<b>Prepared By:</b> JJP
<b>Scale:</b> 1 : 12,000	<b>Checked By:</b> SK



**LEGEND**

- Study Area
- Preferred Design
- Alternative Design
- Maintenance and Storage Facility
- Breeding Bird Point Count Station
- Anuran Monitoring Station
- Watercourse
- ANSI Earth Science
- ANSI Life Science
- Wetland Evaluated - Other
- Wetland Evaluated - Provincial
- Wetland not evaluated per OWES
- Environmentally Significant Area (CVC)
- Vegetation Communities**
- Vegetation Community Boundary
- Ag** Agricultural
- BL01** Mineral Open Bluff Ecosite
- CUM1-1 (a-d)** Dry-Moist Old Field Meadow Deciduous Plantation
- CUP1** Black Walnut Deciduous Plantation Type
- CUM1 (a-c)** Mineral Cultural Thicket
- CUM1-1** Sumac Shrub Thicket Type
- CUM1-1 (a-c)** Gray Dogwood Shrub Thicket Type
- CUM1 (a-d)** Mineral Cultural Woodland Ecosite
- D** Disturbed
- FO02-2** Dry-Fresh White Cedar Coniferous Forest Type
- FO02-2a** Dry-Fresh Oak-Hickory Deciduous Forest Type
- FO02-4 (a,b)** Dry-Fresh Oak-Hardwood Deciduous Forest Type
- FO03 (a,b)** Dry-Fresh Sugar Maple Deciduous Forest Ecosite
- FO03-1 (a,b)** Dry-Fresh Sugar Maple Deciduous Forest Type
- FO03-2** Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
- FO03-3 (a-c)** Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- FO03-4** Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
- FO04-2** Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
- FO04-4** Fresh-Moist Ash Lowland Deciduous Forest Type
- FO07-2 (a,b)** Fresh-Moist Willow Lowland Deciduous Forest Type
- H** Hedgerow
- M** Manicured
- MAM2 (a-c)** Mineral Meadow Marsh Ecosite
- MAM2-2 (a-c)** Reed-canary Grass Mineral Meadow Marsh Type
- MAM2-10** Mixed Forb Mineral Meadow Marsh Type
- MAM2-10** Mineral Shallow Marsh Ecosite
- MAS2-1 (a-m)** Cattail Mineral Shallow Marsh Type
- MAS2-9** Forb Mineral Shallow Marsh Type
- MAS2-10/SW2** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- OAG** Open Aquatic
- SWD2-2 (a-c)** Green Ash Mineral Deciduous Swamp Type
- SWD3** Maple Mineral Deciduous Swamp Ecosite
- SWD4-1 (a,b)** Willow Mineral Deciduous Swamp Type
- SW2-2** Willow Mineral Thicket Swamp Type

Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.

0 100 200 300 400 Meters

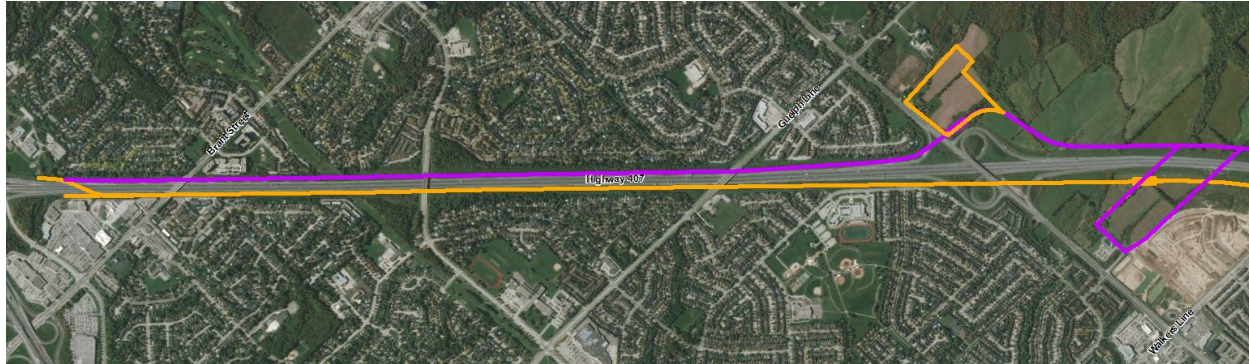
**407 TRANSITWAY WEST -  
NATURAL HERITAGE/  
EXISTING CONDITIONS**



<b>Project:</b> TA8733	<b>Figure:</b> 2f
<b>Date:</b> March, 2020	<b>Prepared By:</b> JJP
<b>Scale:</b> 1 : 12,000	<b>Checked By:</b> SK

The figures presented below for each Segment illustrate the runningway, stations and the bus storage yard for Alignment Option 1, shown in purple, and Alignment Option 2, shown in orange.

### Segment S1: West of Brant Street to East of Dundas Street



#### ***Alignment Option 1***

Cultural communities dominate the area associated with Alignment Option 1 north of the 407 ETR, and several small and isolated wetlands typically associated with highway drainage or associated with local tributaries, are present. The cultural meadow and cultural meadow/cultural thicket communities east of Brant Street, which extend across Option 1, are dominated by non-native and/or disturbance tolerant plant species. These species include bird's-foot trefoil (*Lotus corniculatus*), horseweed (*Conyza canadensis*), Canada thistle (*Cirsium arvense*), field sow-thistle (*Sonchus arvensis* ssp. *arvensis*) and wild carrot (*Daucus carota*), clovers (*Trifolium* spp.), sweet clovers (*Melilotus* spp.), blue grasses (*Poa* spp.), smooth brome (*Bromus inermis*), yellow foxtail (*Setaria pumila*), common buckthorn (*Rhamnus cathartica*), Russian olive (*Elaeagnus angustifolia*), and tartarian honeysuckle (*Lonicera tatarica*). Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. Identified between agricultural fields are hedgerows and cultural woodlands retained as windbreaks associated with agricultural land use. Several meadow marsh communities persist dominated by reed canary grass (*Phalaris arundinacea*). A mineral shallow marsh dominated by narrow-leaved cattail (*Typha angustifolia*) is also present, which is associated with a Tributary of Shoreacres Creek. Overall, vegetation communities across Alignment Option 1 are heavily influenced by local land use practices including residential development, agriculture and infrastructure.

#### ***Alignment Option 2***

Cultural communities dominate the area associated with Alignment Option 2 south of the 407 ETR, and several small and isolated wetlands typically associated with highway drainage or associated with local tributaries are present. The cultural meadow and cultural meadow/cultural thicket communities that extend across Option 2, are dominated by disturbance tolerant plant species. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. There are two deciduous plantations and a Fresh-Moist Ash Lowland Deciduous Forest immediately west of Upper Middle Road. The deciduous plantations are comprised of a wide range of deciduous trees including occasional to abundant black walnut (*Juglans nigra*) and American basswood (*Tilia americana*), with other associates including red ash (*Fraxinus pennsylvanica*), Norway maple (*Acer platanoides*), sugar maple (*Acer saccharum* var. *saccharum*), and shagbark hickory (*Carya ovata*). The Fresh-Moist Ash Lowland Deciduous Forest is dominated by red and black ash (*Fraxinus nigra*) many of which are dead



or dying due to Emerald Ash Borer (*Agrilus planipennis* or EAB), and this community may transition with changes to species dominance. Disturbance was noted within these wooded communities likely related to their proximity to a hydro corridor and local school with well-established *ad hoc* pathways through these communities. East of Dundas Street a few agricultural fields persist, but several have been removed likely due to new residential development on adjacent lands. Hedgerows, narrow cultural woodlands, Reed-canary Grass Mineral Meadow Marsh and Mineral Shallow Marsh are associated with Tributaries of Shoresacres Creek. Reed canary grass dominates the meadow marsh, and common reed (*Phragmites australis*) dominates Mineral Shallow Marsh. Associated species within the cultural woodland include black walnut (*Juglans nigra*), Manitoba maple (*Acer negundo*) and trembling aspen (*Populus tremuloides*). Overall, vegetation communities within Alignment Option 2 are heavily influenced by local land use practices including ongoing residential development, agriculture and infrastructure.

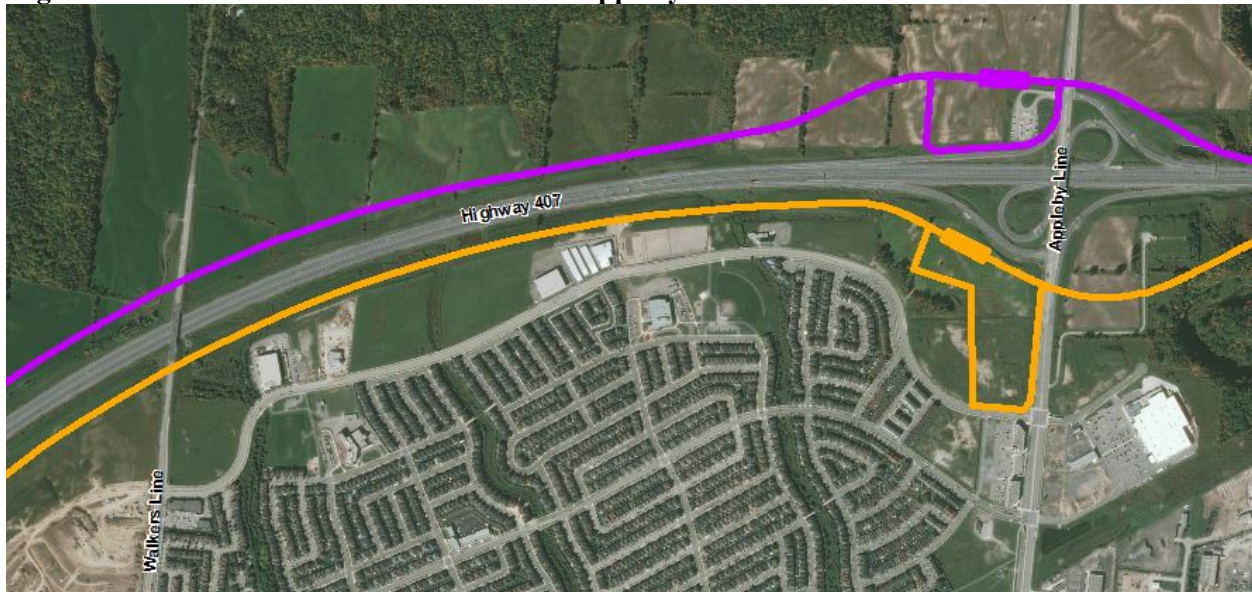
#### ***Dundas Street Station Option A***

The area associated with Station Option A, north of the 407 ETR and east of Dundas Street is associated with cultural meadow, cultural woodland, hedgerows, a meadow marsh, and agricultural lands. Cultural communities within this area are highly disturbed and are dominated by non-native, disturbance tolerant plant species. Within the cultural woodland black walnut, Manitoba maple and black locust (*Robinia pseudo-acacia*) are occasional to abundant and riverbank grape (*Vitis riparia*) is abundant both within the ground and shrub layers. The meadow marsh is associated with a slight depression with abundant reed canary grass. Overall, vegetation communities within Station A are heavily influenced by local land use practices including residential development, agriculture, and infrastructure.

#### ***Dundas Street Station Option B***

The area associated with Station Option B, south of the 407 ETR and east of Dundas Street is associated with cultural thicket/cultural woodland, a Willow Mineral Thicket Swamp, hedgerows and agriculture. Cultural communities within this area are highly disturbed and are dominated by non-native, disturbance tolerant plant species. The cultural thicket/cultural woodland is a community in transition with a range of tree and shrub species including red oak (*Quercus rubra*), sugar maple, Manitoba maple, black walnut, eastern cottonwood (*Populus deltoides*), staghorn sumac (*Rhus typhina*), common buckthorn, and dogwoods (*Cornus* spp.). The Willow Mineral Thicket Swamp is comprised of a variety of tree and shrub species with abundant willows (*Salix* spp.) with occasional associates including white elm (*Ulmus americana*), Manitoba maple and Freeman's maple (*Acer X freemanii*). Tree and shrub species associated with the hedgerows that bisect remaining agricultural fields include black walnut, bur oak (*Quercus macrocarpa*), sugar maple, trembling aspen, eastern cottonwood, common buckthorn, tartarian honeysuckle, and dogwoods. Overall, vegetation communities within Station B are heavily influenced by local land use practices including ongoing residential development, agriculture and infrastructure.

### Segment S2: East of Dundas Street to East of Appleby Line



#### ***Alignment Option 1***

Agricultural fields and cultural communities dominate the area associated with Alignment Option 1 north of the 407 ETR. Several small and isolated wetlands typically associated with highway drainage or with local tributaries including Tributaries of Appleby Creek and Sheldon Creek, are present. The cultural meadows associated with this alignment across Segment S2, are dominated by disturbance tolerant plant species. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields that are no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. Between agricultural fields are several hedgerows and a cultural thicket/cultural woodland, which are likely maintained as windbreaks associated with agricultural land use. Reed canary grass dominates the meadow marsh communities, and common reed dominates mineral shallow marsh communities that are present. Overall, vegetation communities across Option 1 are heavily influenced by local land use practices including agriculture and infrastructure.

#### ***Alignment Option 2***

Cultural communities and agricultural fields dominate the area associated with Alignment Option 2 south of the 407 ETR. Several small wetlands typically associated with highway drainage or associated with local tributaries are present. The cultural meadow communities across Segment S2 are dominated by disturbance tolerant plant species. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. Within a narrow cultural woodland, a range of tree and shrub species were observed including several species of oak (*Quercus* spp.), shagbark hickory, silver maple (*Acer saccharinum*), common buckthorn and tartarian honeysuckle. At the southeast corner of the 407 ETR and Walkers Line, a Maple Mineral Deciduous Swamp and a mineral shallow marsh were observed. Within the swamp, Manitoba maple and silver maple were occasional to abundant with several willow species predominantly in the shrub layer, and within the adjacent shallow marsh community, common reed is dominant. Other wetland communities include meadow marshes dominated by reed canary grass, and additional mineral shallow marsh communities dominated by narrow-leaved cattail or by common reed. There is also a Willow Mineral Deciduous Swamp associated with a Tributary of Sheldon Creek with several willow (*Salix* spp.) species dominant. Overall, vegetation communities within Alignment

Option 2 are heavily influenced by local land use practices including ongoing commercial/industrial development, agriculture and infrastructure.

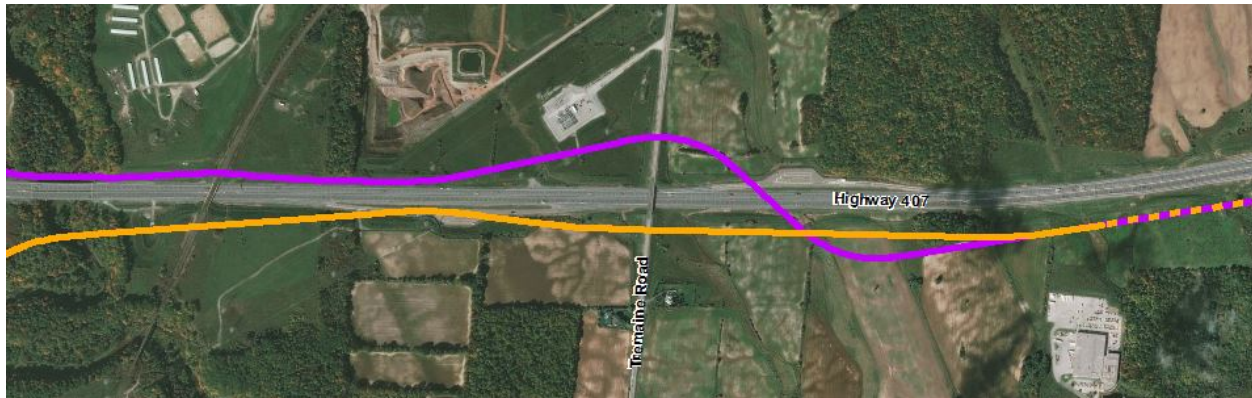
#### ***Appleby Line Station Option A***

Agricultural fields and cultural communities dominate the area associated with Station Option A north of the 407 ETR and west of Walkers Line. The cultural meadow community associated with this station location are dominated by disturbance tolerant plant species. Overall, vegetation communities associated with the Station A location are heavily influenced by local land use practices including agriculture and infrastructure.

#### ***Appleby Line Station Option B***

An agricultural field and cultural meadow dominate the area associated with Station Option B south of the 407 ETR and west of Walkers Line. The cultural meadow communities associated with this station location are dominated by disturbance tolerant plant species. The narrow cultural woodland is on lands adjacent to the proposed station footprint, and thus, no impacts are expected to this community. Overall, vegetation communities associated with the Station A location are heavily influenced by local land use practices, predominantly commercial/industrial and residential development, agriculture and infrastructure.

#### **Segment S3: East of Appleby Line to East of Tremaine Road**



#### ***Alignment Option 1***

Cultural communities were observed throughout the tableland portion of Alignment Option 1, north of the 407 ETR and east of Appleby Line. Natural areas along Bronte Creek were identified within the valley slopes and floodplain, which are part of the Zimmerman Valley Life Science ANSI. A few isolated wetlands were identified associated with highway drainage or associated with local tributaries. Several areas were notably disturbed in proximity to hydro infrastructure and the local industry. The cultural meadow communities across Option 1 are dominated by non-native and disturbance tolerant plant species. Meadow communities dominated by non-native and disturbance tolerant plant species are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas.

A Mineral Open Bluff is located along the eastern bank of Bronte Creek where vegetation cover is rare. Several high-quality forest communities were observed including a Dry-Fresh Sugar Maple Deciduous Forest, a Fresh-Moist Sugar Maple-Black Maple Deciduous Forest that is provincially ranked S3 (i.e., vulnerable), and a Dry-Fresh Sugar Maple-Oak Deciduous Forest. These communities typically contained a diverse range of plant species with limited disturbance. Plant species included black maple (*Acer*

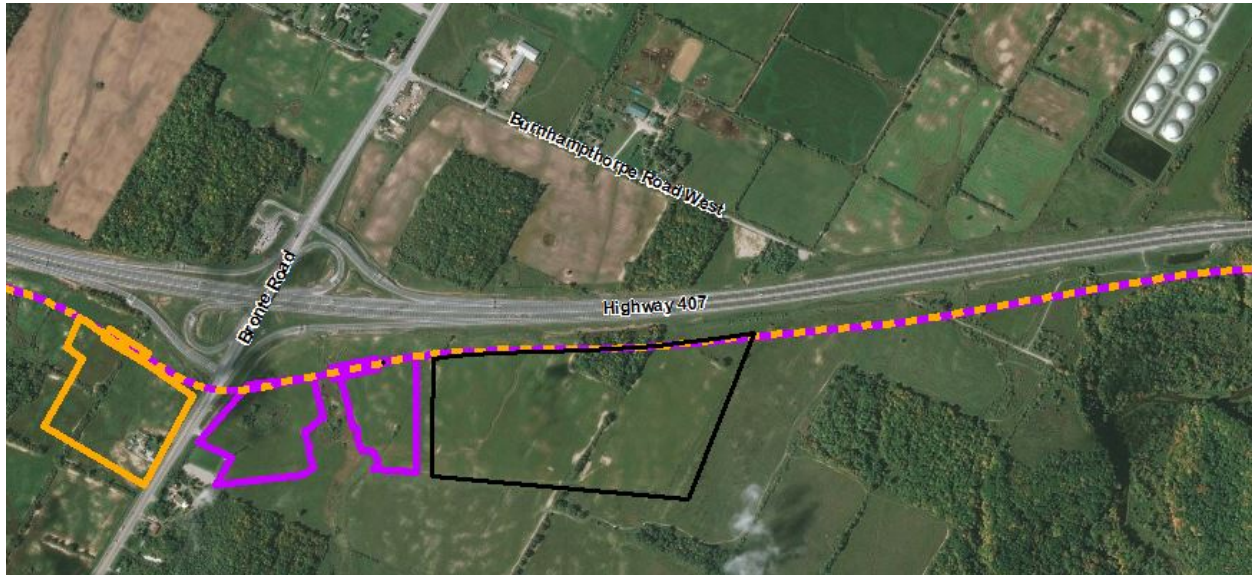
*saccharum* ssp. *nigrum*), shagbark hickory, eastern hemlock (*Tsuga canadensis*), pale touch-me-not (*Impatiens pallida*) a regionally rare species (see **Table 2**), bloodroot (*Sanguinaria canadensis*), ostrich fern (*Matteuccia struthiopteris* var. *pennsylvanica*), and Michigan lily (*Lilium michiganense*). Along the western bank of Bronte Creek a narrow (<1m) Forb Mineral Shallow Marsh was identified. East of the rail tracks a Dry-Fresh Sugar Maple Hickory Deciduous Forest was identified, but observations were only undertaken from the forest edge due to access constraints. Narrow wetland communities were observed both west and east of Tremaine Road. These include two Reed-canary Grass Mineral Meadow Marshes associated with Tributaries of Fourteen Mile Creek, and a mineral shallow marsh community dominated by common reed. East of Tremaine Road a small portion of the alignment bisects the southern portion of an agricultural field, lands that are identified as part of the provincially significant Trafalgar Moraine Earth Science ANSI. Within Segment S3, two mid-sized butternut (*Juglans cinerea*) trees and numerous seedlings were identified. Overall, the vegetation communities across Option 1 are influenced by agriculture, commercial development and infrastructure.

### ***Alignment Option 2***

Cultural communities and agricultural fields dominate the tableland portion of Alignment Option 2, south of the 407 ETR and east of Appleby Line. Natural areas along Bronte Creek were identified within the valley slopes and floodplain, which are part of the Zimmerman Valley Life Science ANSI. A few isolated wetlands were observed associated either with highway drainage or with local tributaries. Non-native and disturbance tolerant plant species dominate the cultural meadow communities observed across Alignment Option 2. Meadow communities are typically within the right-of-way adjacent to roads and associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. Cultural thicket communities were also identified with a range of tree and shrub species including red oak, trembling aspen, green ash, staghorn sumac, gray dogwood, scarlet hawthorn, and common buckthorn. A Mineral Open Bluff is associated with the western bank of Bronte Creek where vegetation cover is rare. As well, several forested communities were observed including a Dry-Fresh Sugar Maple Deciduous Forest and a Fresh-Moist Ash Lowland Deciduous Forest. Within the Ash Lowland Deciduous Forest, numerous ash trees observed were dead or dying due to EAB, and a mid-aged basswood tree was in very poor condition. A cultural meadow/cultural thicket is located within the floodplain east of Bronte Creek, with Manitoba maple, staghorn sumac, white willow, riverbank grape and red raspberry (*Rubus idaeus*) identified as rare to occasional and reed canary grass, common wormwood (*Artemisia absinthium*), glandular touch-me-not (*Impatiens glandulifera*), Indian hemp (*Apocynum cannabinum* var. *cannabinum*), and riverbank grape identified as rare to abundant. The narrow (<1m) Forb Mineral Shallow Marsh identified north of the 407 ETR along the western bank of Bronte Creek, continues south of the highway. East of Tremaine Road a small, isolated Dry-Fresh Sugar-Oak Deciduous Forest was identified with minimal disturbance and a diverse range of plant species. Species included sugar maple, both red and white oak, shagbark hickory, basswood, scarlet hawthorn, ironwood (*Ostrya virginiana*), stellate sedge (*Carex rosea*), pointed broom sedge (*Carex scoparia*) a regionally rare species (see **Table 2**), and poison-ivy (*Rhus radicans* ssp. *negundo*). Narrow wetland communities observed primarily east of Tremaine Road include meadow marsh communities dominated by reed canary grass, and mineral shallow marsh communities dominated by common reed and/or cattails. These wetlands are typically associated with Tributaries of Fourteen Mile Creek. Overall, the vegetation communities across Option 2 are influenced by agriculture, infrastructure, and to a lesser extent by commercial/industrial development.

A small wetland that is complexed, as part of the provincially significant North Oakville-Milton West Wetland Complex (MAM2-2e) and edge habitat associated with a Dry-Fresh Sugar Maple-Oak Deciduous Forest (FOD5-3e) within the Sixteen Mile Creek Candidate ANSI, would be impacted within Segment S4.

### Segment S4: East of Tremaine Road to East of Bronte Road



#### ***Alignment Options 1 and 2***

Alignment Options 1 and 2 bisect virtually the same area south of the 407 ETR, thus, existing conditions discussed below are for both options because there are little to no differences. Overall, cultural communities and agricultural fields dominate the area associated with both alignment options south of the 407 ETR. Non-native and disturbance tolerant plant species dominate the cultural meadow communities. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. Between the agricultural fields are several hedgerows that were likely maintained as windbreaks associated with agricultural land use. A cultural meadow/cultural thicket community in transition was identified associated with a Tributary of Fourteen Mile Creek. There are also several small and isolated wetlands typically associated with highway drainage or with Tributaries of Fourteen Mile Creek. These include Reed-canary Grass Mineral Meadow Marsh and mineral shallow marsh communities. The shallow marsh habitat is typically dominated by common reed or cattails. The cultural meadow and cultural meadow/cultural thicket communities that extend across Options 1 and 2, are dominated by disturbance tolerant plant species. East of Regional Road 25 is a small, isolated Dry-Fresh Sugar Maple-Oak Deciduous Forest. This forest community includes red oak of which several are in poor condition, sugar maple, red maple, white pine (*Pinus strobus*), shagbark hickory, stellate sedge, pointed broom sedge, small jack-in-the-pulpit (*Arisaema triphyllum* ssp. *triphyllum*), large-leaved aster *Eurybia macrophyllum*), and poison-ivy.

Overall, vegetation communities within both alignment options associated with Segment S4 are heavily influenced by local agricultural land use practices and infrastructure.

#### ***Bronte Road Bus Station Option A***

The area associated with Station Option A south of the 407 ETR and east of Bronte Road (Regional Road 25), is associated with cultural meadow and hedgerows. Non-native and disturbance tolerant plant species dominate cultural meadow communities. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. A Reed-canary Grass Mineral Meadow Marsh

(MAM2-2b) is located within the footprint of this Bronte Station. A Cattail Mineral Shallow Marsh (MAS2-1d) is located adjacent and east of the station. This marsh is dominated by narrow-leaved cattails with a small disturbed upland area around which the wetland has developed. This wetland is associated with a Tributary of Fourteen Mile Creek and is complexed as part of the provincially significant North Oakville-Milton West Wetland Complex. Based on the proposed Station Option A footprint, impacts to this wetland would be minimized. Overall, vegetation communities within Station Option A are heavily influenced by agricultural land use and infrastructure.

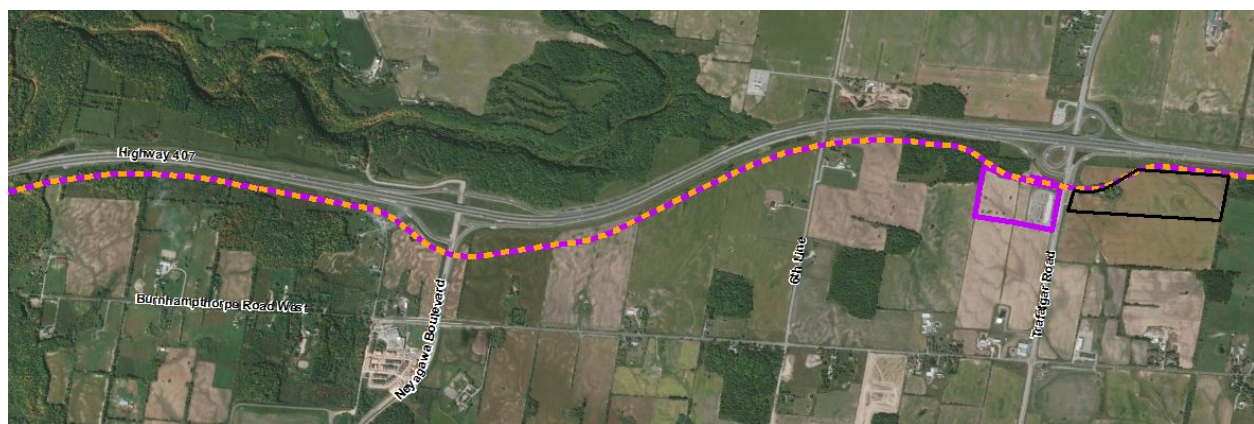
### ***Bronte Road Station Option B***

The area associated with Station Option B, south of the 407 ETR and west of Bronte Road (Regional Road 25) is associated primarily with agricultural lands, hedgerows maintained as wind breaks between agricultural fields, and to a lesser extent cultural meadow dominated by non-native and disturbance tolerant plant species. A mineral shallow marsh that is dominated by common reed is also located within the Station Option B footprint. This marsh appears to have developed, in part, due to drainage from adjacent roads. Non-native, disturbance tolerant plant species dominate the cultural communities. Overall, vegetation communities within Station Option B are influenced by agricultural land use and infrastructure.

### ***Bronte Road and Bronte Road Bus Storage Yard Option***

The proposed Bus Storage Yard, south of the 407 ETR and east of Bronte Road (Regional Road 25) outlined in black in the figure above, is primarily associated with agricultural fields and hedgerows maintained as wind breaks. A Cattail Mineral Shallow Marsh (MAS2-1d) is located adjacent and west of the bus storage yard, lying in between this area and the Bronte Street Station Option A, further west. This wetland is associated with a Tributary of Fourteen Mile Creek and is complexed as part of the provincially significant North Oakville-Milton West Wetland Complex. Further east is another narrow Cattail Mineral Shallow Marsh that is likely associated with drainage from the adjacent highway within the footprint, as well as a small, isolated Dry-Fresh Sugar Maple-Oak Deciduous Forest. This forest is comprised of a range of plant species (as noted above for the Alignment Options 1 and 2), including red oak of which several are in poor condition, sugar maple, red maple, white pine, shagbark hickory, stellate sedge, pointed broom sedge, small jack-in-the-pulpit, large-leaved aster, and poison-ivy. Overall, vegetation communities within the Bus Storage Yard are heavily influenced by agricultural land use and infrastructure.

### **Segment S5: East of Bronte Rd to East of Trafalgar Rd**



### ***Alignment Options 1 and 2***

Alignment Options 1 and 2 bisect essentially the same area south of the 407 ETR, thus existing conditions are discussed below for both options. Overall, existing conditions across Options 1 and 2 are a mix of cultural communities including cultural thicket and woodland, agricultural fields and hedgerows, forest, and several small wetlands across the tableland portion of Segment S5. Non-native and disturbance tolerant plant species dominate the cultural meadow communities. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. Natural communities are associated with Sixteen Mile Creek observed along valley slopes and the floodplain. Several hedgerows maintained as windbreaks for agricultural land use are associated with agricultural fields.

Two forest communities were identified across the tablelands including a Dry-Fresh Sugar Maple-Beech Deciduous Forest, and a Dry-Fresh Oak-Hardwood Deciduous Forest. The Sugar Maple-Beech Deciduous Forest includes a diverse range of species like sugar maple, shagbark hickory, red oak, Freeman's maple, basswood, scarlet hawthorn, chokecherry (*Prunus virginiana*), American dog violet (*Viola conspersa*), poison-ivy, yellow avens (*Geum aleppicum*), pointed broom sedge, and enchanter's nightshade (*Circaea lutetiana* ssp. *canadensis*). Ash and American beech (*Fagus grandifolia*) were also observed several of which are in poor condition and dying. Disturbance was noted including an *ad hoc* path, and non-native species including garlic mustard (*Alliaria petiolata*) and glandular touch-me-not observed as rare. Within the Oak-Hardwood Deciduous Forest a diverse variety of species were observed, but observations were limited due access constraints. Species included shagbark hickory, sugar maple, red oak, white pine, basswood, Manitoba maple, and to a lesser extent ash of which several individuals had succumbed to EAB, black walnut, chokecherry, and running strawberry-bush (*Euonymus obovata*). Ground flora observed included Pennsylvania sedge (*Carex pennsylvanica*), large-leaved aster, two-leaved toothwort (*Cardamine diphylla*), enchanter's nightshade, spotted crane's-bill (*Geranium maculatum*) and herb-robert (*G. robertianum*). Several, small wetland pockets that occur across this strip of forest. This forest unit is contiguous with forest to the south, which is part of the Oakville-Milton Wetlands and Uplands Provincial Candidate Life Science ANSI. Several Gray Dogwood Cultural Thickets were identified west of Neyagawa Boulevard. Within the larger thicket to the west, white spruce (*Picea glauca*) was abundant with approximately 25% cover. A small cultural woodland associated with a residence, just east of Trafalgar, was identified. Adjacent to this woodland is a small mineral shallow marsh dominated by narrow-leaved cattails with occasional reed canary grass and silver maple as emergent. Several other very small wetlands are present across the tableland dominated either by cattails or reed canary grass.

Numerous vegetation communities are associated with Sixteen Mile Creek. These include a Mineral Open Bluff observed west of the watercourse where vegetation cover is rare. Several forested communities were identified including a Dry-Fresh White Cedar Coniferous Forest, Fresh-Moist Willow Lowland Deciduous Forest and the dominant forest cover is comprised of Dry-Fresh Sugar Maple-Oak Deciduous Forest that is primarily located along slopes and up onto tableland both west and east of the watercourse. These are typically diverse communities with limited disturbance. Along the western bank is a Forb Mineral Meadow Marsh with reed canary grass, purple loosestrife (*Lythrum salicaria*), spotted Joe-pye-weed (*Eupatorium maculatum* ssp. *maculatum*) and spotted touch-me-not as occasional to abundant. Floating-leaved macrophytes were also rarely observed including broad-leaved arrowhead (*Sagittaria latifolia*) and common water-plantain (*Alisma plantago-aquatica*). Palmate-leaf sweet-coltsfoot (*Petasites frigidus*) a regionally rare species (see **Table 2**), was also observed rarely within this community. A cultural thicket is located east of Sixteen Mile Creek with a range of species that included Manitoba maple, staghorn sumac, common buckthorn and willows observed as abundant in the shrub layer with crack willow (*Salix fragilis*), eastern cottonwood, silver maple and sycamore (*Platanus occidentalis*)

observed as occasional to rare. Sycamore is a regionally rare species (see **Table 2**). Overall, the vegetation communities across Options 1 and 2 are influenced primarily by agriculture and infrastructure.

Within Segment S5, a Dry-Fresh Sugar Maple-Oak Deciduous Forest (FOD5-3e) and Mineral Cultural Thicket (CUT1b) associated with the Sixteen Mile Creek Candidate ANSI would be impacted due to the runningway. West of Neyagawa Boulevard, the runningway is within 20 m to 30 m of a large forested tract that is part of the Oakville-Milton Wetlands and Uplands Candidate ANSI. West of Trafalgar Road the runningway and a small portion of the Trafalgar Road Station will impact the northern portion of a Dry-Fresh Oak-Hardwood Deciduous Forest (FOD2-4a), habitat that is also identified as part of the candidate ANSI. Several small wetlands within this forest are complexed as part of the provincially significant North Oakville-Milton West Wetland Complex, one of which would be impacted.

#### ***Trafalgar Road Station Option***

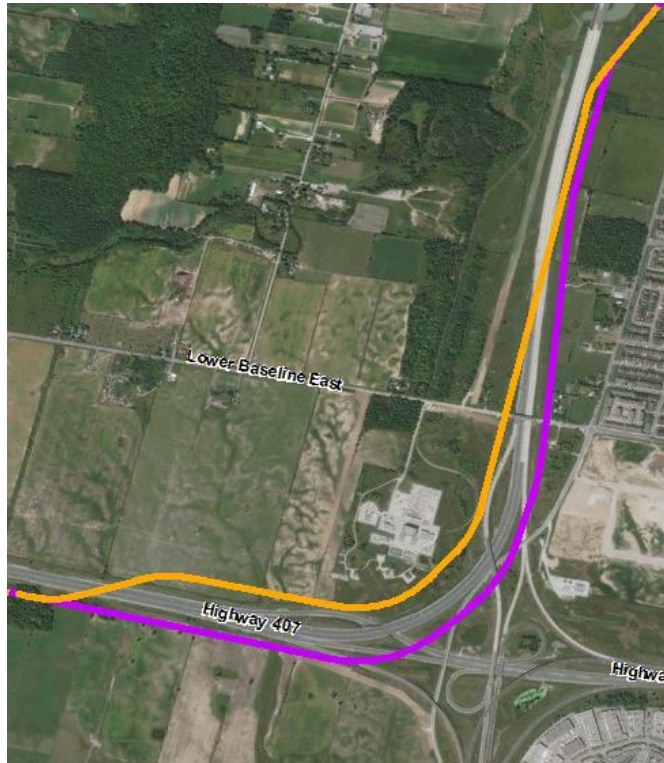
The area associated with the Trafalgar Road Station Option south of the 407 ETR and west of Trafalgar Road is associated with agricultural fields, hedgerows, a portion of a Dry-Fresh Oak-Hickory Deciduous Forest, a small Cattail Mineral Shallow Marsh, cultural meadow, and manicured areas associated with the GO Transit Carpool Parking Lot. The Dry-Fresh Oak-Hickory Deciduous Forest observed is comprised of a diversity of species including red oak, shagbark hickory, sugar maple, ironwood, running strawberry-bush (*Euonymus obovata*), blue-stem goldenrod (*Solidago caesia*), and Pennsylvania sedge. A Cattail Mineral Shallow Marsh identified adjacent to this forest, is dominated by broad-leaved cattails (*Typha latifolia*) and includes abundant reed canary grass, with emergent crack willow and Freeman's maple. These natural areas are contiguous with forest to the west, the southern portion of which is part of the Oakville-Milton Wetlands and Uplands Provincial Candidate Life Science ANSI. Within cultural communities and manicured areas non-native and disturbance tolerant plant species dominate. Meadow communities are typically within the right-of-way adjacent to roads. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. Overall, vegetation communities within the Trafalgar Road Station Option are influenced by agricultural land use and infrastructure.

#### ***Trafalgar Road Bus Storage Yard Option***

The area associated with the proposed Trafalgar Road Bus Storage Yard south of the 407 ETR and east of Trafalgar Road, outlined in black in the figure above, is comprised primarily of agricultural fields, cultural meadow, and a Cattail Mineral Shallow Marsh and Mineral Cultural Woodland associated with a single residence. Non-native and disturbance tolerant plant species dominate the cultural meadow communities. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. The Cattail Mineral Shallow Marsh is dominated by narrow-leaved cattails with emergent willows and silver maple. The Mineral Cultural Woodland includes silver maple, black walnut, black locust, trembling aspen and common buckthorn. Overall, vegetation communities within the footprint of Trafalgar Road Bus Storage Yard are heavily influenced by agricultural land use and infrastructure.



### Segment S6: East of Trafalgar Road to East of Lower Base Line



Alignment Options 1 and 2 bisect an area with similar natural heritage features adjacent to the 407 ETR to north of Lower Base Line where the Alignment Options converge within Segment S6. Thus, existing conditions are discussed below for both options. A large section of Option 1 will be constructed underground (tunnel).

Cultural communities and agricultural fields dominate the area associated with Alignment Option 1 and 2. Cultural meadow communities are dominated by non-native, disturbance tolerant plant species. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. Several small and narrow wetlands typically associated with highway drainage or associated with local tributaries are present. A mineral shallow marsh associated with a Tributary of Joshua Creek was observed south of the 407 ETR with common reed and narrow-leaved cattails as abundant, and a meadow marsh dominated by reed canary grass also associated with another Tributary of Joshua Creek was identified north of the 407 ETR. Other meadow and shallow marsh communities across Options 1 and 2, are dominated by reed canary grass, common reed or cattails. North of the highway two small Gray Dogwood Cultural Thickets were identified, with common buckthorn and tartarian honeysuckle in the shrub layer and reed canary grass, giant goldenrod (*Solidago gigantea*), and fox sedge (*Carex vulpinoidea*) in the ground layer. A range of tree and shrub species were observed associated within a few, very narrow hedgerows that are typically associated with agriculture. A Dry-Fresh Oak-Hardwood Deciduous Forest is located east of Trafalgar Road south of the highway. Tree species include red oak, shagbark hickory, sugar maple, bur oak, white pine and basswood, with enchanter's nightshade, Canada anemone (*Anemone canadensis*), and herb-robot occasional to abundant in the ground layer.

Cultural communities dominate the area west and east of the 407 ETR where the highway bends towards the north, north and south of Lower Base Line. Cultural communities include cultural meadow, a small cultural thicket and small cultural woodland, and manicured areas associated with a residential development. Non-native, disturbance tolerant species dominate these cultural communities. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. There is also a small Cattail Mineral Shallow Marsh dominated by narrow-leaved cattails and a Reed-canary Grass Meadow Marsh. These wetlands are in low-lying areas and appear to be, in part, associated with drainage from adjacent roads.

Overall, vegetation communities across Options 1 and 2 within Segment S6 are heavily influenced by local land use practices primarily agriculture, residential development and infrastructure.

### **Segment S7: East of Lower Base Line to North of Britannia Road**



#### ***Alignment Options 1 and 2***

Alignment Options 1 and 2 bisect the same area east of the 407 ETR, thus, existing conditions discussed below are for both options because there are little to no differences.

Overall, cultural communities, agricultural fields, wetlands, and storm ponds dominate the area associated with both alignment options east of the 407 ETR. Hedgerows observed between agricultural fields are maintained as windbreaks between fields and as visual screening. Cultural communities include cultural meadow, cultural woodlands and manicured areas associated with residential and commercial development. These cultural communities are dominated by non-native, disturbance tolerant plant species. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. A small and isolated Green Ash Mineral Deciduous Swamp is present, and a significant number of ash trees are negatively affected by EAB, these trees are dead or are dying. Plant surveys were limited in this area due to access constraints. Adjacent to this swamp, several agricultural fields have been removed and a large commercial development is under construction. There are also several Reed-canary Grass Meadow Marshes and mineral shallow marsh communities dominated either by common reed or by cattails. These wetlands appear to be, in part, associated with road drainage, or associated with the

Tributary of East Sixteen Mile Creek. Overall, vegetation communities within Segment S7 are heavily influenced by local land use practices agriculture, residential and to a lesser extent commercial development.

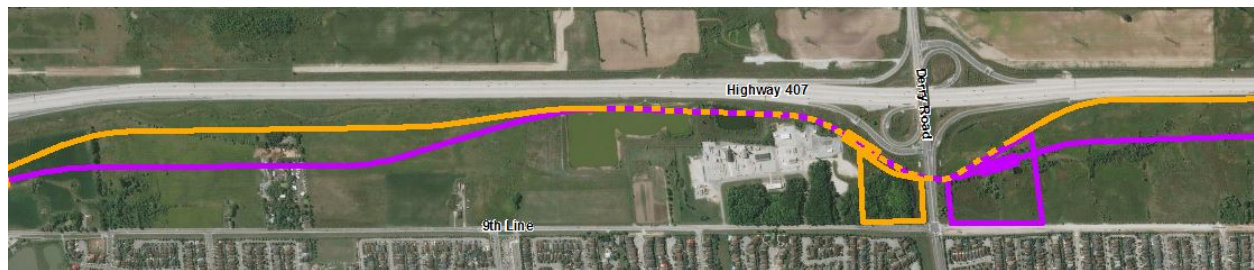
#### ***Britannia Road Station Option A***

Cultural meadow dominates the area associated with Station A, south of Britannia Road and east of the 407 ETR. The cultural meadow community is dominated by non-native, disturbance tolerant plant species. Within the Station Option A footprint there is also a residential unit with manicured areas, and several meadow marsh communities that are dominated by reed canary grass. One meadow marsh community is associated with the Tributary of East Sixteen Mile Creek. Overall, vegetation communities within the Station A footprint are heavily influenced by local land use practices primarily residential development and infrastructure.

#### ***Britannia Road Station Option B***

Cultural meadow and manicured areas associated with commercial development dominate the area associated with Station Option B, north of Britannia Road and east of the 407 ETR. Non-native, disturbance tolerant plant species dominate the cultural meadow community. Within the Station Option B footprint there is also a small Reed-canary Grass Meadow Marsh and a small Cattail Mineral Shallow Marsh. Overall, vegetation communities within the Station B footprint are heavily influenced by local land use practices primarily commercial development and infrastructure.

#### **Segment S8: North of Britannia Rd to North of Derry Rd**



#### ***Alignment Options 1 and 2***

Alignment Options 1 and 2 bisect virtually the same area east of the 407 ETR with a slight offset of each other north of Britannia Road over to mid-way through Segment S8, and through this area the existing conditions are the same northward to where the two alignments join, through the remaining portion of Segment S8. Thus, the existing conditions discussed below are for both options.

Overall, cultural communities, wetlands, old agricultural fields, and storm ponds dominate the area associated with both alignment options. Hedgerows observed between agricultural fields are maintained as windbreaks between fields and as visual screening. Cultural communities include cultural meadow, cultural woodland, and manicured and disturbed areas associated with residential and commercial/industrial development. Cultural communities are dominated by non-native, disturbance tolerant plant species. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. A Fresh-Moist Sugar Maple-White Elm Deciduous Forest borders both alignments just south of Derry Road. Access to this community was limited and thus surveys undertaken were only from west and north forest edges. This forest is comprised of a range of species including sugar maple, shagbark hickory, oak species, basswood, enchanter's nightshade, and may-apple

(*Podophyllum peltatum*). There are several Reed-canary Grass Mineral Meadow Marshes and a Green Ash Mineral Deciduous Swamp identified, these are typically associated with the Tributary of East Sixteen Mile Creek that crosses Segment S8. Mineral shallow marsh communities were also identified, and these are typically dominated either by common reed or by cattails. Overall, vegetation communities within Segment S8 are heavily influenced by local land use practices including agriculture, commercial/industrial development and infrastructure.

#### ***Derry Road Station Option A***

Cultural meadow, wetland and manicured areas are dominant within the Station Option A footprint north of Derry Road and east of the 407 ETR. Non-native, disturbance tolerant plant species dominate the cultural meadow community. Within the Station Option A footprint there is a former residential unit with manicured areas and planted trees, and an associated hedgerow that was likely maintained for screening. Non-native and disturbance tolerant species dominate cultural meadow and manicured areas. Also, within the station footprint is a small portion of a Reed-canary Grass Mineral Marsh that is associated with Tributary of East Sixteen Mile Creek. Overall, vegetation communities within the Station Option A are influenced by local land use practices, including former agricultural land use and infrastructure.

#### ***Derry Road Station Option B***

A Fresh-Moist Sugar Maple-White Elm Deciduous Forest, cultural meadow, and a Reed-canary Grass Mineral Marsh associated with Tributary of East Sixteen Mile Creek, were identified within the Station Option B footprint, south of Britannia Road and east of the 407 ETR. The large forested area is connected to two other forest fragments that have been bisected by driveways associated with the Union Gas Parkway Station. As noted above, access constraints limited survey observations to along forest edges. The large forest track likely contains a diverse variety of plant species as noted above in the Segment S8 Alignment Options discussion. Overall, this forest appears to be in good condition. Non-native and disturbance tolerant species dominate cultural meadow communities. Overall, vegetation communities within the Station Option B are influenced by local land use practices, including industrial development and infrastructure.

### Segment S9: North of Derry Road to West of Heritage Road



#### ***Alignment Option 1***

Alignment Option 1 is associated with a hydro corridor crossing in a northeast direction until just south of the 407 ETR where it converges with Option 2 at Winston Churchill Boulevard. A large section of the Option 1 alignment within Segment S9 will be constructed underground (tunnel). Overall, cultural communities, agricultural fields and wetlands dominate the area. Cultural communities consist of cultural meadow. Non-native, disturbance tolerant plant species dominate cultural meadow communities. There are several Reed-canary Grass Mineral Meadow Marshes and a mineral shallow marsh/mineral meadow marsh community across this option that are associated with a Tributary of East Sixteen Mile Creek. The mineral shallow marsh/mineral meadow marsh community is located within a defined channel that directs drainage across the length of the hydro corridor to just north of Argentia Road. This community is variably dominated by reed canary grass, common reed and cattails. Overall, vegetation communities across Alignment Option 1, are heavily influenced by local land use practices including agriculture and infrastructure.

#### ***Alignment Option 2***

Alignment Option 2 is located northeast of the 407 ETR to Ninth Line where the alignment continues just south of the 407 ETR to where it converges with Option 1 at Winston Churchill Boulevard. Overall, cultural communities, agricultural fields and wetlands dominate the area associated with both alignment options. Hedgerows observed between agricultural fields are maintained as windbreaks between fields and as visual screening. Cultural communities include cultural meadow and manicured and disturbed areas associated with primarily commercial and industrial development. Non-native, disturbance tolerant plant species dominate cultural meadow communities across Segment S9. Meadow communities are also within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. There are several Reed-canary Grass Mineral Meadow Marshes typically associated with the Tributary of East Sixteen Mile Creek. Mineral Shallow Marsh communities were also identified, and these are typically dominated either by

common reed or by cattails. Overall, vegetation communities within Segment S9 are heavily influenced by local land use practices including agriculture, commercial and industrial development, and infrastructure.

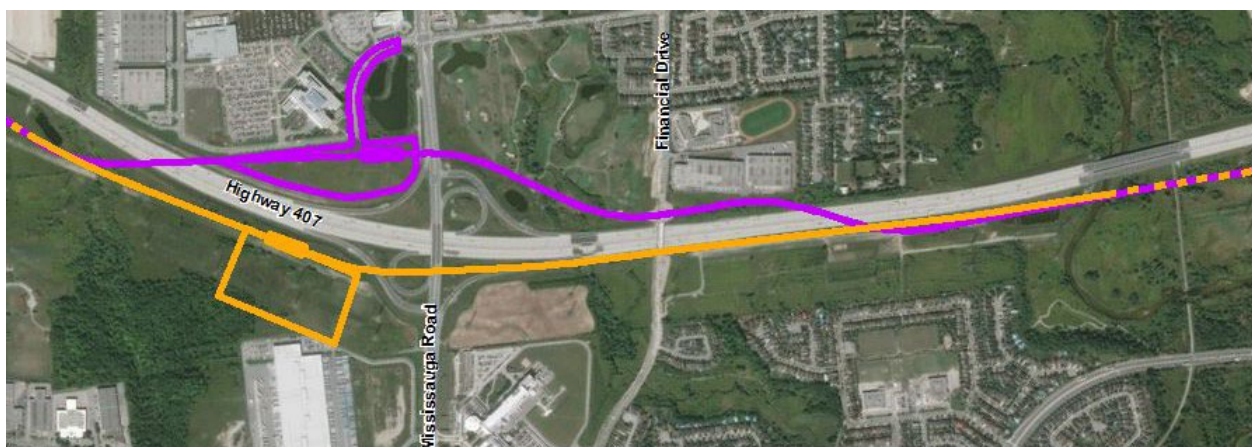
### ***Winston Churchill Blvd Station Option***

Cultural meadow, manicured areas and area of disturbance associated with a horse stable, dominant the Winston Churchill Blvd Station Option footprint located north of the 407 ETR and east of Meadowpine Blvd. Non-native, disturbance tolerant plant species dominate cultural meadow communities and manicured area. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. A small Cattail Mineral Shallow Marsh is also located within the Station Option. This wetland habitat is dominated by narrow-leaved cattails with abundant reed canary grass with emergent willows, and a minor component of floating macrophytes including rare to occasional common water-plantain and common floating pondweed (*Potamogeton natans*). Overall, vegetation communities within the Winston Churchill Blvd Station Option are influenced by local land use practices including commercial development, agriculture and infrastructure.

### ***The Bus Storage Yard***

Agricultural fields, manicured areas associated with a driving range, and cultural meadow habitat are dominant within the bus storage yard footprint southeast of the 407 ETR, outlined in black in the figure above. Non-native, disturbance tolerant plant species dominate cultural meadow communities and manicured areas. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. Two Mineral Shallow Marsh communities are also within the bus storage yard footprint. One is a small wetland associated with the driving range, with common reed observed as dominant. This wetland is associated with a Tributary of East Sixteen Mile Creek with flows that are intermittent. Flows appear to cross the central portion of the driving range in a very narrow depression (<0.5 m in with) that is regularly mown. The second wetland is a Cattail Mineral Shallow Marsh associated with another Tributary of East Sixteen Mile Creek, north of the driving range. This wetland is wide and conveys flows eastward towards the commercial development on adjacent lands. This wetland is dominated by narrow-leaved cattails with occasional purple loosestrife, reed canary grass and common reed. Overall, vegetation communities within the bus storage yard footprint are influenced by local land use practices including commercial development, agriculture and infrastructure.

## **Segment S10: West of Heritage Rd to East of Creditview Rd**



### ***Alignment Option 1***

Cultural communities are dominant across Alignment Option 1, and wetlands and manicured areas are also present distributed occasionally across this alignment option, north of the 407 ETR. Non-native, disturbance tolerant plant species dominate cultural meadow communities. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. There is a cultural woodland adjacent to a golf course, where access was limited during surveys. This woodland community includes tree species like sugar maple and black walnut with shrubs like common buckthorn and tartarian honeysuckle. Wetlands observed within Alignment Option 1 are comprised of a Green Ash Mineral Deciduous Swamp, Reed-canary Grass Mineral Meadow Marsh, mineral shallow marsh, and a mineral shallow marsh/mineral meadow marsh. These are typically associated with a Tributary of Mullet Creek and Levi Creek. The Green Ash Mineral Deciduous Swamp was surveyed only from the community edge due to access constraints. Species included red ash (also known as green ash), black walnut, white willow, trembling aspen, common buckthorn, gray dogwood and red-osier dogwood (*Cornus sericea* ssp. *sericea*). Numerous red ash trees were notably in decline likely impacted by EAB, and trees were either dead or dying. Two mineral shallow marsh communities were observed associated with storm ponds, where narrow-leaved cattails are dominant with species like gray dogwood rarely emergent. A mineral shallow marsh/mineral meadow marsh community was identified in a low-lying area associated with Levi Creek. Access was limited during surveys, but common reed and reed canary grass were noted as occasional to abundant with purple loosestrife rarely observed, and Manitoba maple and red ash rarely emergent. Overall, vegetation communities within the Alignment Option 1 are influenced by local land use practices including commercial and industrial development, and infrastructure.

### ***Alignment Option 2***

Cultural communities are dominant across Alignment Option 2, and wetlands and a few agricultural fields are also present distributed occasionally across this alignment option, south of the 407 ETR. Non-native, disturbance tolerant plant species dominate cultural meadow communities. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. Hydro corridors are also associated with cultural meadow communities as is the case in Alignment Option 2. Cultural woodland and cultural thicket communities were also identified and include Manitoba maple, riverbank grape, common buckthorn, white mulberry (*Morus alba*), red-osier dogwood and Russian olive. Ground flora within these communities includes reed canary grass, smooth brome, and wild teasel (*Dipsacus fullonum* ssp. *sylvestris*). Several Reed-canary Grass Mineral Meadow Marsh communities are located within Option 2, and a mineral shallow marsh that is associated with a storm pond. Within the low-lying area associated with the Credit River, which crosses Segment S10, is a Fresh-Moist Willow Lowland Deciduous Forest. Plant species within this community include white willow, crack willow, Manitoba Maple, red ash, bur oak, common buckthorn and tartarian honeysuckle. This community contained numerous non-native species including wild teasel, wild carrot, and smooth brome. Overall, vegetation communities within Alignment Option 2 are influenced by local land use practices including residential development, agriculture, and infrastructure.

At the east end of Segment S10, east of the Credit River, the runningway for both Option A and B impact the northern edge of a Reed-canary Grass Meadow Marsh (MAM2-2m) that is part of the provincially significant Churchville-Norval Wetland Complex.

A change to this segment has been made since the initial analysis of Alignment Option 1 and Alignment Option 2. This was due to new information received regarding existing archaeological potential south of

the 407 ETR around the Credit River area. The change consists of crossing of the Credit River on the north side of 407 ETR. More information is available in **Section 3.2.1**.

### ***Mississauga Station Option A***

Cultural meadow and manicured areas are dominant within the Station Option A footprint north of the 407 ETR. Non-native, disturbance tolerant plant species dominate the cultural meadow community. Within a small portion of the Station A footprint, there is an existing manicured area/park associated with a storm pond. Overall, vegetation communities within the Station A footprint are influenced by local land use practices primarily commercial development and infrastructure.

### ***Mississauga Station Option B***

Cultural meadow is dominant within the Station Option B footprint south of the 407 ETR. Non-native, disturbance tolerant plant species dominate the cultural meadow community, which is associated with a hydro corridor. There is also a forested community associated with an Environmentally Significant Area at the very southwest corner of the Option B footprint that would be impacted along its northern edge. Overall, vegetation communities within the Station B footprint are influenced by local land use practices primarily commercial development and infrastructure; however, the forest community provides habitat for a wide range of plant species.

### **Segment S11: East of Creditview Road to West of Hurontario Street**



### ***Alignment Options 1 and 2***

Alignment Options 1 and 2 bisect virtually the same area south of the 407 ETR. A large section of Option 1 will be constructed underground (tunnel). The existing conditions discussed below are for both options.

Cultural communities are dominant across Alignment Options 1 and 2 south of the 407 ETR. Vegetation communities consist of cultural meadow and cultural thicket habitat with a few agricultural fields. Within these communities, non-native, disturbance tolerant plant species dominate cultural meadow communities. Meadow communities are typically within the right-of-way adjacent to roads, as well as associated with old agricultural fields no longer in use. Roadside cultural meadow regularly includes localized patches of common reed, reed canary grass or occasionally cattails, typically along roadside ditches and low-lying areas. A cultural woodland is located within the 407 ETR and Mavis Road Interchange and includes red oak, shagbark hickory, black walnut, trembling aspen, common buckthorn,



and downy thorn (*Crataegus mollis*). Cultural thicket communities were typically dominated by common buckthorn or included staghorn sumac as abundant. Other communities include Reed-canary Grass Mineral Meadow Marsh associated with a Tributary of Fletcher's Creek, and a mineral shallow marsh associated with an agricultural field. The Reed-canary Grass Mineral Meadow Marsh at the west end of Segment S11 is also associated with the provincially significant Churchville-Norval Wetland Complex. The runningway for both Options 1 and 2 will impact the northern edge of this wetland community.

Overall, vegetation communities within the portion of Alignment Options 1 and 2, east of the Credit River to west of Hurontario Street, are influenced by local land use practices including residential development and infrastructure.

### 2.2.3.3 Flora

Detailed field work has been undertaken along the 407 Transitway in 2018 and 2019 to document species presence within the study area. A vascular plant list has been prepared as a result of botanical survey data collected for vegetation communities identified in **Table 1**. A total of 304 plant species were recorded within the study area, however, 15 of these plants could only be identified to genus. Of the 289 plants identified to species, 174 are native (60%) and 115 are non-native (40%). The overall percentage of native species in the study area is low when compared with the percentage of native plant species in the flora of Ontario (77%: Kaiser 1983). This is a reflection of the associated land uses found within the surrounding area including residential, commercial, industrial and agricultural uses. Such land uses influence the extent to which vegetation communities are disturbed, typically related to an increased diversity of non-native and/or invasive species, which ultimately serves to promote the establishment and subsequent dispersal of such species.

Cultural communities and manicured areas have a high proportion of non-native plant species, as is generally the case in areas with regular disturbance activities and areas where the surrounding land use includes development and infrastructure. Overall, such pressures on the natural environment are related to an increased diversity of non-native species with an increased dispersal of these plants.

Forest and wetland communities generally provide higher quality habitat and have a higher occurrence of native plant species that are more specialized. Higher quality vegetation communities with a more diverse range of native species were associated with Bronte Creek and Sixteen Mile Creek, within the Zimmerman Valley Life Science ANSI, and the Sixteen Mile Creek Candidate Life Science ANSI. Several high-quality forested communities are also scattered throughout the western portion of the study area on tableland, and these are typically located within the vicinity of the Oakville-Milton Wetlands and Upland Candidate ANSI.

A detailed plant list of species observed is presented in **Appendix D**. The acronyms and definitions used in the species lists are presented in **Appendix E**.

### 2.2.3.4 Species at Risk

A letter dated September 6, 2017, from the MNRF Aurora District Office confirmed that butternut has been recorded within the vicinity of the study area. Two butternut (*Julans cinera*) trees and numerous seedlings were identified within a woodland associated with the study area. Butternut trees were found only within Segment S3 as confirmed during field investigations. Butternut is a species at risk, listed as Endangered under the Ontario *Endangered Species Act (ESA 2007)*. No other plant species at risk (Threatened, Endangered, or Special Concern) were identified during 2018 or 2019 field investigations.

Twenty-two plant species considered rare in Peel and/or Halton (Varga 2000; CVC) were identified within several communities associated with the study area. Several species of trees including white spruce

and common hackberry (*Celtis occidentalis*) were planted. **Table 2** presents a summary of these species with their approximate locations within the study area. All of the species listed in **Table 2** have populations that are provincially secure.

**Appendix F** presents correspondence with the MNRF, Conservation Halton and CVC related to terrestrial ecosystems.

#### **2.2.3.5 Sensitivity/Significance**

All of the vegetation communities identified within the study area are considered to be widespread and common in Ontario and secure globally. The Fresh-Moist Sugar Maple-Black Maple Deciduous Forest (FOD6-4) associated with Bronte Creek, is a vulnerable community type provincially ranked as S3. This community contained several regionally rare species. A large number of the vegetation communities identified within the study area are of anthropogenic origin and influence. Cultural vegetation communities found within the study area are considered more tolerant of disturbance and are able to recover quickly post-disturbance. Valleylands within the study area are more naturalized and support a greater diversity of native plant species. The forest and wetland communities identified within the study area are considered to be more sensitive features. Efforts should be made to minimize impacts to these features, including the removal of vegetation, to the extent possible.

A number of Areas of Natural and Scientific Interest and Provincially Significant Wetlands are located within the study area. In addition, the upper and lower tier municipalities have identified areas, generally associated with watercourses/valleylands, within the study area as part of their natural heritage/greenlands systems. Provisions should be made to ensure that these sensitive areas are avoided and to prohibit vegetation removals from these areas to the extent possible.

Historic records of butternut and eastern flowering dogwood have been identified within the study area. Botanical field investigations undertaken in 2018 and 2019 confirmed the presence of butternut, but eastern flowering dogwood was not identified during plant surveys. Environmental protection/mitigation measures to protect species at risk and their habitat will be developed later in the design process.

**TABLE 2.**  
**REGIONALLY RARE PLANT SPECIES RECORDED WITHIN THE STUDY AREA**

Plant Community	Scientific Name	Common Name	Rarity Status <sup>1</sup>			Study Area Segments <sup>2</sup>											Stations <sup>2</sup>							Bus Storage Yard by Segment <sup>2</sup>			
			Halton - Varga	Peel - Varga	Peel - CVC	1	2	3	4	5	6	7	8	9	10	11	Dundas St	Appleby Line	Bronte Road	Trafalgar Road	Britannia Road	Derry Road	Lisgar Go	Mississauga Road	Mavis Road	Bronte Road	Trafalgar
CUM1-1a, f and i, CUP1-3, CUT1-4a, CUW1g, FOD5a, SWD3, H and M	<i>Picea glauca</i>	white spruce	U	R3		X	X			X	X	X	X														
CUM1-1a,	<i>Juniperus virginiana</i>	eastern red cedar			R																						
MAS2-1j	<i>Nymphaea odorata</i>	fragrant water-lily	R1	R3	R								X														
CUT1b and FOD7-3a	<i>Platanus occidentalis</i>	sycamore	R4	R3	R					X																	
CUM1-1a and M	<i>Celtis occidentalis</i>	common hackberry	R3		R								X	X									X				
FOD2-4a and b, H	<i>Quercus bicolor</i>	swamp white oak	R1	R5	R					X	X							X									
CUM1-1a and e, MAM2-2c and j, MAS2-1/SWT, MAS2-1c, SWD3 and SWD4-1a	<i>Salix exigua</i>	sandbar willow	U	R5			X	X	X			X	X														
MAS2-1j	<i>Ribes hirtellum</i>	smooth gooseberry	R2	R2	R								X														
CUM1-1a	<i>Physocarpus opulifolius</i>	ninebark	R1	R1	R			X					X														
CUM1-1a	<i>Oenothera biennis</i>	common evening-primrose	R1	U				X																			
SWD3	<i>Rhus aromatica</i>	fragrant sumac	R3				X																				
FOD6-2	<i>Impatiens pallida</i>	pale touch-me-not		R8	R		X	X																			
CUM1-1i and MAS2-1i	<i>Angelica atropurpurea</i>	dark-purple alexanders		R6	R						X		X		X												
CUT1b and FOD6-2	<i>Heracleum lanatum</i>	cow-parsnip	R5	R4	R		X	X		X																	
CUM1-1f and FOD5-2	<i>Galium aparine</i>	cleavers	U	R4	R					X																	
MAM2-10	<i>Petasites frigidus</i>	palmate-leaf sweet-coltsfoot	R1	R2	R					X																	
MAS2-1j	<i>Potamogeton natans</i>	common floating pondweed	R2	U									X														
CUM1-1e	<i>Eleocharis acicularis</i>	Small's spike-rush	U	R4	R				X																		

**TABLE 2.**  
**REGIONALLY RARE PLANT SPECIES RECORDED WITHIN THE STUDY AREA**

Plant Community	Scientific Name	Common Name	Rarity Status <sup>1</sup>			Study Area Segments <sup>2</sup>											Stations <sup>2</sup>							Bus Storage Yard by Segment <sup>2</sup>			
			Halton - Varga	Peel - Varga	Peel - CVC	1	2	3	4	5	6	7	8	9	10	11	Dundas St	Appleby Line	Bronte Road	Trafalgar Road	Britannia Road	Derry Road	Lisgar Go	Mississauga Road	Mavis Road	Bronte Road	Trafalgar
MAM2-2a, MAM2-2c, MAM2-2h, MAM2-2j and MAS2-1h	<i>Scirpus microcarpus</i>	small-fruited bulrush	R2				X					X	X		X												
FOD7-3b	<i>Juncus canadensis</i>	Canada rush			R																						
FOD2-4a, FOD5-2, FOD5-3c, FOD5-3d and MAM2-2l	<i>Carex scoparia</i>	pointed broom sedge	R1	R5	R			X	X	X	X	X	X					X							X		
FOD7-2a	<i>Cinna latifolia</i>	broad-leaved reed grass	U	R4	R	X																					

<sup>1</sup>Refer to Appendix E for Acronyms and Definitions used in species lists. <sup>2</sup>Segments, stations, and bus storage yards delineated across the study area are outlined in Section 2.2.3.2, and these are presented on Figures 2a to 2f.

## 2.3 **Wildlife and Wildlife Habitat**

### 2.3.1 Purpose

A review of secondary source data was undertaken to document wildlife habitat and wildlife occupation and to characterize the nature, extent and significance of animal usage within the study limits. The purpose of this search was to characterize the extent and significance of natural heritage features and determine its potential for wildlife usage. The study area investigated included all habitats along a one-kilometre-wide corridor centred along 407 ETR within the study area. Detailed field investigations to document wildlife and wildlife habitat were conducted on several dates in the spring and summer of 2018 and 2019, along the preferred Transitway alignment and in the vicinity of the station locations.

Information concerning wildlife species at risk previously recorded within the study area was obtained from the Natural Heritage Information Centre (NHIC), Breeding Bird Atlas, and from the MNRF, Aurora District Office in a letter dated September 6, 2017. Data provided by MNRF and NHIC provided element occurrence records for an array of wildlife species, including species at risk. Records for herpetofauna species previously identified in the vicinity of the study area were obtained from the Ontario Reptile and Amphibian Atlas (Ontario Nature 2015). Data provided by the Ontario Reptile and Amphibian Atlas only contains ‘common species’ and does not generally include species at risk records. General information concerning wildlife and wildlife habitat was obtained following a review of published and non-published sources, including avian data obtained from Bird Studies Canada.

### 2.3.2 Data Sources

The information relating to wildlife and wildlife habitat was obtained from the following published and non-published sources:

- Bat Conservation International (BCI). 2019. Species profiles for bats in Ontario, Canada. Accessed Online [<http://www.batcon.org/resources/media-education/species-profiles>]
- Brunton, F. (2008). Karst of Southern Ontario and Manitoulin Island. 10.13140/RG.2.1.2036.3760.
- Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier (eds.). 2007. *Atlas of the Breeding Birds of Ontario, 2001-2005*. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 pp;
- Committee on the Status of Endangered Wildlife in Canada. 2002. *Species at Risk*. Ottawa;
- Couturier, A. 1999. *Conservation Priorities for the Birds of Southern Ontario*. Bird Studies Canada;
- Credit Valley Conservation. 2016. Data provided on January 26, 2016;
- Dobbyn, J.S. 1994. *Atlas of the Mammals of Ontario*. Federation of Ontario Naturalists. Toronto;
- Environment and Climate Change Canada (ECCC). 2018. Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis septentrionalis*), and the Tri-colored Bat (*Perimyotis subflavus*) in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. ix + 172 pp.
- Harding, J. H. 1997. *Amphibians and Reptiles of the Great Lakes Region*. The University of Michigan Press, Michigan. 378 pp;
- Humphrey, C and H. Fotherby. 2019. DRAFT Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*) and Tri-colored Bat (*Perimyotis subflavus*) in Ontario. Ontario Recovery Strategy Series. Prepared by the Ministry of the Environment, Conservation and Parks, Peterborough, Ontario. vii + 35 pp. + Appendix. Adoption of the Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis*

*septentrionalis*), and the Tri-colored Bat (*Perimyotis subflavus*) in Canada (Environment and Climate Change Canada 2018).

- Humphrey, C. 2017. Recovery Strategy for the Eastern Small-footed Myotis (*Myotis leibii*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vii + 76 pp.
- Kurta, Allen. 1995. *Mammals of the Great Lakes Region*. University of Michigan;
- Morningstar, D. 2018. A Framework for Assessment and Monitoring of Bat Habitat. Prepared for the Canadian Wildlife Service and Environment and Climate Change Canada. 34 pp.
- Nagorsen, D.W. and R.M Bringham. 1993. *Bats of British Columbia; Volume 1. The Mammals of British Columbia*. Royal British Columbia Museum Handbook. UBC Press, Vancouver, B.C.;
- Ontario Ministry of Natural Resources. 2000. *Significant Wildlife Habitat Technical Guide*. Fish and Wildlife Branch, Wildlife Section, Peterborough;
- Ontario Ministry of Natural Resources. 2001. *Index List of Vulnerable, Threatened, Endangered, Extirpated or Extinct Species of Ontario*. Wildlife Section, Peterborough;
- Ontario Ministry of Natural Resources and Forestry. 2015. *Natural Heritage Information Centre Biodiversity Explorer*. Website available online at: <http://nhic.mnr.gov.on.ca/>. Accessed May 2015. Peterborough, Ontario;
- Ontario Ministry of Natural Resources and Forestry. 2015. Northern Bobwhite: <http://www.ontario.ca/page/northern-bobwhite>;
- Ontario Ministry of Natural Resources and Forestry, Aurora District Office. 2016. Species at Risk data provided on September 6, 2017; and,
- Ontario Nature. 2017. Ontario Reptile and Amphibian Atlas: a citizen science project to map the distribution of Ontario's reptiles and amphibians. Ontario Nature, Ontario. Available: <http://www.ontarionature.org/atlas>; Accessed: September 12, 2017.

### 2.3.3 Findings

#### 2.3.3.1 Wildlife Habitat Summary

There are many natural heritage features located within the study area between Brant Street and Hurontario Street, in particular, where watercourses/valleylands and designated natural areas are present. The Bronte Creek, Sixteen Mile Creek, East Sixteen Mile Creek and the Credit River valleylands/tablelands make up much of the highest quality natural heritage features within the vicinity of the study area and provide important north-south movement opportunity/linkages for wildlife within, or in the immediate vicinity of the study area. These north-south linkages provide increased opportunity for wildlife utilization of habitats within and adjacent to the study area. Deciduous forest habitats present north of the 407 ETR, near Dundas Street, east to Appleby Line, function as important wildlife habitat because of the large and relatively contiguous nature of the natural heritage features. However, these natural areas primarily extend north of 407 ETR, with very limited natural area extending to the south. The Trafalgar Moraine ANSI, situated north of the 47 ETR, between Tremaine Road and Regional Road 25, is a relatively large, deciduous woodland and marsh community that is also likely to function as important wildlife habitat given its relatively large size. However, this natural area is largely fragmented from surrounding natural areas because of cleared agricultural lands and roads bordering the feature. The Oakville-Milton Wetlands and Upland Candidate ANSI maintains some connectivity to the East Sixteen Mile Creek valleyland and also to natural areas to the south-east. This natural feature is dominated by deciduous forest but also contains inclusions of cultural meadow and savannah habitat types.

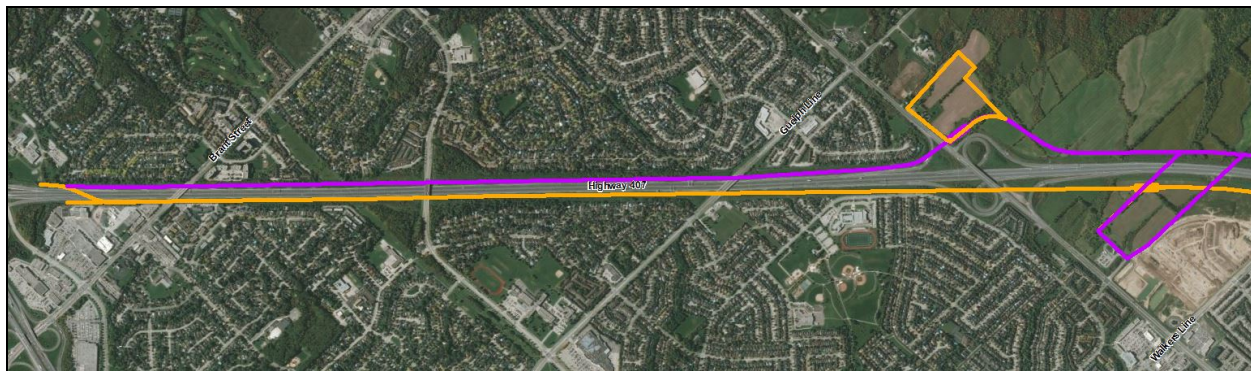
A number of aquatic habitats are scattered throughout much of the study area. A loose concentration of aquatic features is associated with the Drumquin Wetland not Provincially Significant Wetland, situated near the Tributary of Sixteen Mile Creek. These aquatic habitats are composed largely of shallow marsh and swamp habitat types. These habitats are likely to function as amphibian breeding habitat and habitat for aquatic/semi-aquatic bird, reptile and mammal species. These features do experience disturbance and fragmentation resulting from extensive agricultural lands and nearby roads.

Interspaced between these larger more contiguous natural heritage features are natural and disturbed communities such as cultural meadows, thickets, woodlands, agricultural lands, hedgerows, and several aquatic habitat types (meadow marsh, shallow marsh, swamp, shallow aquatic and open aquatic).

Overall, larger and contiguous natural areas within the study area are restricted to several areas but, where present, are likely to support a moderate to high diversity of wildlife species. A number of north-south running valleylands (Bronte Creek, Sixteen Mile Creek, East Sixteen Mile Creek and Credit River valleylands/tablelands) as described above, as well as designated natural areas and smaller valleylands of the other watercourses located within the study area achieves important habitat connectivity. However, outside of these valleylands and natural areas the landscape is highly disturbed and supports more modest natural heritage features, resulting in the presence of a low to moderate diversity of wildlife species generally considered urban or tolerant of anthropogenic features and disturbance.

A summary of wildlife habitat conditions for each Segment is provided below. Figures presented below for each Segment illustrate the runningway, stations, and the bus storage yards for Alignment Option 1, shown in purple and Alignment Option 2, shown in orange.

### Segment S1: West of Brant Street to East of Dundas Street



#### *Alignment Option 1*

Much of the habitat found within this segment consists of cultural meadow/thicket/woodland, deciduous forest, hedgerow, manicured lawns or active agricultural lands. Additionally, there are several small seasonal watercourses also present, including Rambo Creek and its tributary, Tuck Creek and tributaries of Shoreacres Creek. The watercourse valleylands may provide amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife. This segment is located approximately 200 m south of the Nelson Slope Forest, which is a regionally significant, life science area of natural and scientific interest (ANSI).

#### *Alignment Option 2*

Much of the habitat within this segment consists of cultural meadow/thicket/woodland, deciduous forest, and some hedgerow. These habitats were found to contain a wildlife assemblage which is generally considered tolerant to human disturbance/anthropogenic influences. Additionally, there are several small seasonal watercourses present, including Tuck Creek, Roseland Creek, Rambo Creek and tributaries, as

well as a thicket swamp, which is associated with a tributary of Shoreacres Creek. The watercourse valleylands and thicket swamp may function as higher quality wildlife habitat as it may provide amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife.

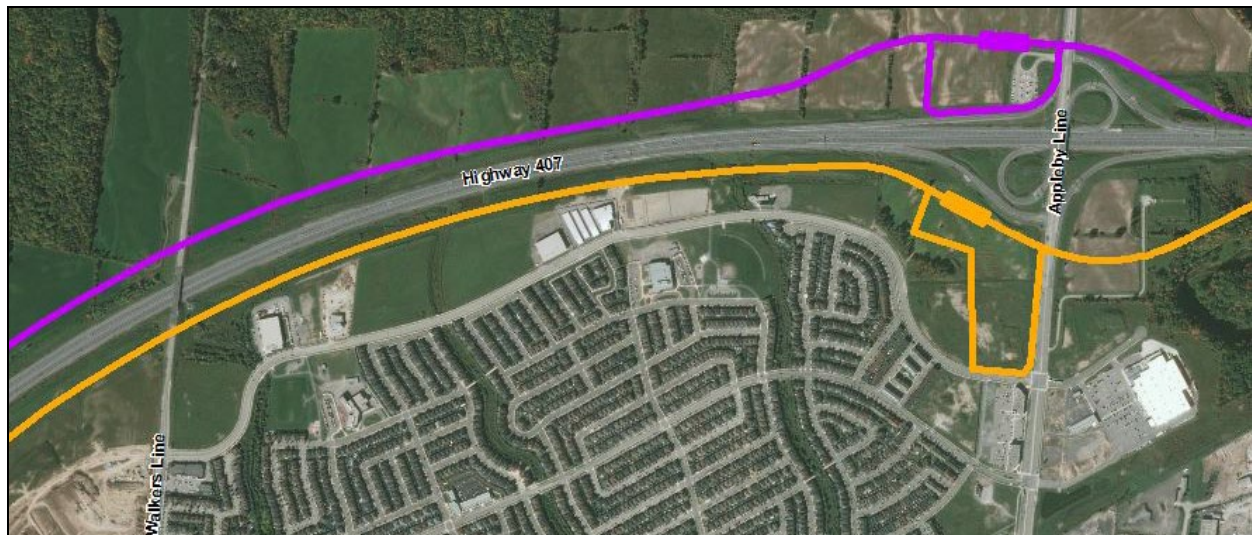
#### ***Dundas Street Station Option A***

The area associated with Station Option A, north of the 407 ETR is associated with cultural meadow, cultural woodland, hedgerows, a meadow marsh and agricultural lands, which are highly disturbed. These habitats were found to contain a wildlife assemblage that is generally considered tolerant to human disturbance/anthropogenic influences. Tuck Creek, with seasonal flows, bisects Station Option A, however, limited amphibian breeding habitat was observed.

#### ***Dundas Street Station Option B***

The area associated with Station Option B, south of the 407 ETR is associated with a cultural thicket/cultural woodland, a Willow Mineral Thicket Swamp, hedgerows and agriculture. Cultural communities within this area are highly disturbed due to local land uses, which includes residential construction. These habitats were found to contain a wildlife assemblage that is generally considered tolerant to human disturbance/anthropogenic influences. A Tributary of Shoreacres Creek bisects the swamp thicket. This swamp may function as higher quality wildlife habitat as it may provide amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife.

#### **Segment S2: East of Dundas Street to East of Appleby Line**



#### ***Alignment Option 1***

The runningway in this segment will largely affect cultural meadow, deciduous forest, manicured land, agricultural habitat types and small seasonal watercourses. These habitats were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences. Along with these vegetation communities, this segment contains tributaries of Appleby Creek and Sheldon Creek and Bronte Creek, which runs through the Zimmerman Valley ANSI.

#### ***Alignment Option 2***

The runningway in this segment will largely affect cultural meadow/thicket, deciduous forest, manicured lands, agricultural habitat types and small seasonal watercourses. These habitats were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences. Along



with these vegetation communities, this segment contains tributaries of Appleby Creek and Sheldon Creek, and Bronte Creek, which runs through the Zimmerman Valley ANSI.

#### ***Appleby Line Station Option A***

Agricultural fields and cultural communities are dominant within the area associated with Station Option A north of the 407 ETR. These habitats were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences.

#### ***Appleby Line Station Option B***

An agricultural field and cultural meadow dominate the area associated with Station Option B south of the 407 ETR. Along with these vegetation communities, this option contains a tributary of Sheldon Creek which runs adjacent and west of the station footprint. These habitats were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences.

### **Segment S3: East of Appleby Line to East of Tremaine Road**



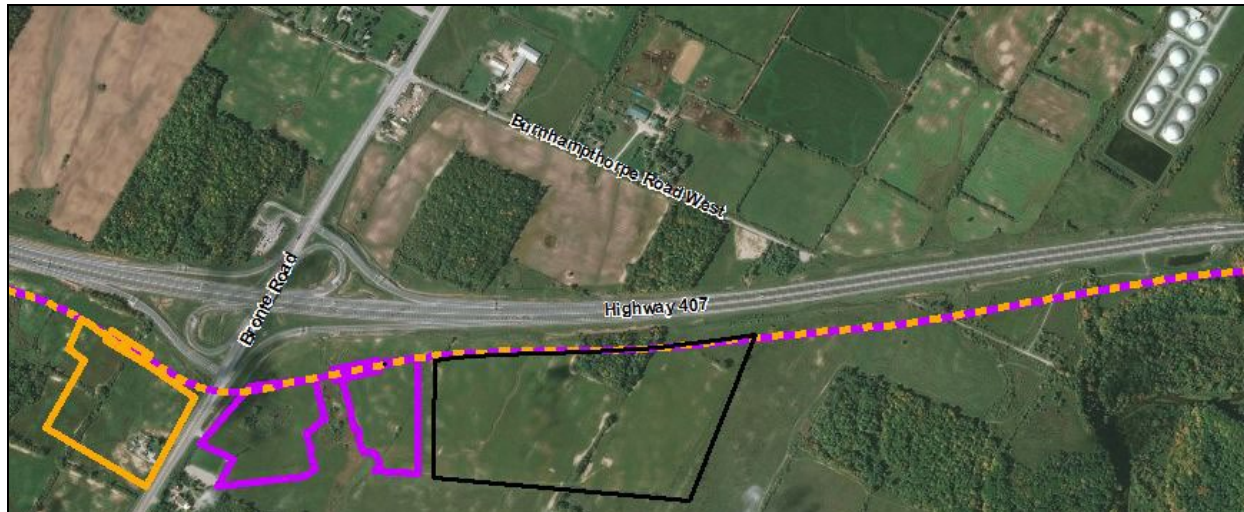
#### ***Alignment Option 1***

This segment is comprised of cultural meadow, deciduous forests, meadow/shallow marsh, agricultural and manicured lands. Along with these vegetation communities, this segment contains areas of natural and scientific interest (ANSI) and candidate ANSI areas: Trafalgar Moraine Earth Science ANSI, and Oakville-Milton Wetlands and Uplands Candidate Life Science ANSI. The Oakville-Milton Wetlands and Uplands Candidate Life Science ANSI supports a diversity of 46 significant faunal species as reported by Natural Heritage Information Centre (2011).

#### ***Alignment Option 2***

This segment is comprised of cultural meadow/thicket/woodland, deciduous forests, shallow marsh, agricultural and manicured lands. These habitats were found to contain a relatively diverse wildlife assemblage which is characterized by species which inhabit open-country, successional, wooded, aquatic, and anthropogenic habitat types. Additionally, tributaries of the high-quality natural heritage feature, Fourteen Mile Creek, are present throughout the segment. Fourteen Mile Creek provides opportunities for wildlife movement across the local landscape.

### Segment S4: East of Tremaine Road to East of Bronte Road



#### ***Alignment Option 1***

This segment of runningway consists mainly of cultural vegetation communities bordering agricultural and manicured lands. These habitats were found to contain a wildlife assemblage that is considered tolerant to human disturbance/anthropogenic influences. Deciduous forest, and cultural meadow/thicket communities are associated with Fourteen Mile Creek and Sixteen Mile Creek. Sixteen Mile Creek Candidate Life Science ANSI is also present and supports a high concentration of plant species and several vegetation communities that are provincially and regionally rare (Natural Heritage Information Centre 2011).

#### ***Alignment Option 2***

This segment of runningway consists mainly of cultural vegetation communities bordering agricultural and manicured lands. These habitats were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences. Deciduous forest, and cultural meadow/thicket communities are associated with Fourteen Mile Creek and Sixteen Mile Creek. Sixteen Mile Creek Candidate Life Science ANSI is also present, which supports a high concentration of plant species and several vegetation communities that are provincially and regionally rare (Natural Heritage Information Centre 2011).

A small Reed-canary Grass Meadow Marsh (MAM2-2e) that is complexed as part of the provincially significant North Oakville-Milton West Wetland Complex and edge habitat associated with a Sugar Maple-Oak Deciduous Forest, both within the Sixteen Mile Creek Candidate ANSI, would be impacted within Segment S4. The meadow marsh is unlikely to provide substantial habitat for higher quality wildlife including amphibian breeding habitat, and thus impacts to this habitat would be considered minor.

#### ***Bronte Road Station Option A***

The area associated with Station Option A south of the 407 ETR and east of Bronte Road (Regional Road 25), is associated with cultural meadow and hedgerows. These habitats were found to contain a wildlife assemblage that is considered tolerant to human disturbance/anthropogenic influences. A shallow marsh is associated with Station Option A. This marsh is dominated by narrow-leaved cattails with a small disturbed upland area around which the wetland has developed. This wetland is associated with a Tributary of Fourteen Mile Creek. This cattail marsh may function as higher quality wildlife habitat as it may provide amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife.

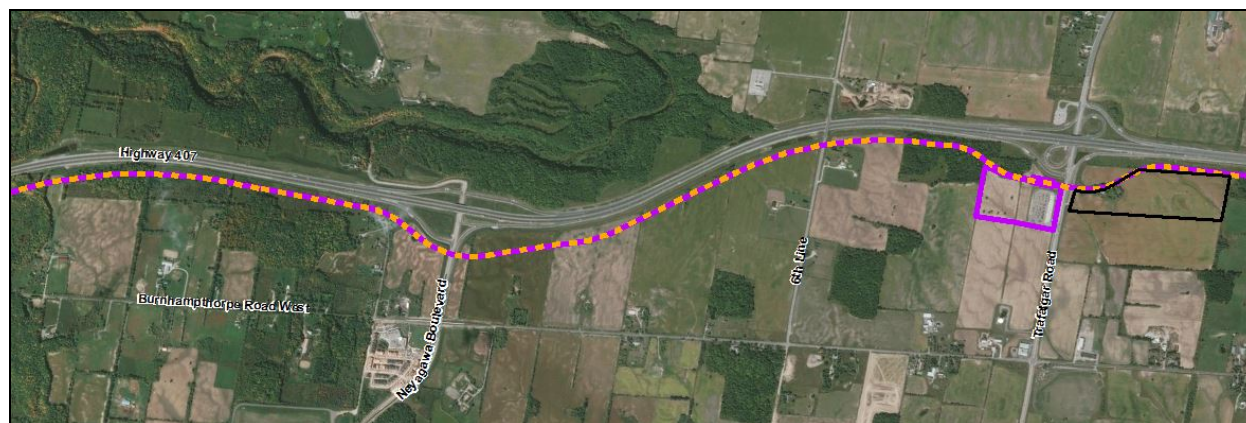
### ***Bronte Road Station Option B***

The area associated with Station Option B, south of the 407 ETR and west of Bronte Road (Regional Road 25) is associated primarily with agricultural lands, hedgerows maintained as wind breaks between agricultural fields, cultural meadow, and shallow marsh that is dominated by common reed. This marsh appears to have developed, in part, due to drainage from adjacent roads with limited capacity to provide amphibian breeding habitat. Overall, habitats associated with Station Option B were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences.

### ***Bronte Road and Bronte Road Bus Storage Yard Option***

The proposed bus storage yard located south of the 407 ETR and east of Bronte Road (Regional Road 25) outlined in black in the figure above, is primarily associated with agricultural fields and hedgerows maintained as wind breaks, and a shallow marsh. There is also a small, isolated Sugar Maple-Oak Deciduous Forest associated with the bus storage yard Option. Overall, these habitats were found to contain a wildlife assemblage that is considered tolerant to human disturbance/anthropogenic influences.

### **Segment S5: East of Bronte Road to East of Trafalgar Road**



### ***Alignment Options 1 & 2 (Overlapped)***

The majority of the habitat in this segment consists largely of agricultural lands, cultural meadow and cultural woodland communities, as well as deciduous forests, manicured lands, hedgerow, and stormwater management ponds. However, this segment also consists of several watercourse crossings of East Sixteen Mile Creek and Joshua's Creek, which also feed into the provincially significant North Oakville-Milton East Wetland Complex (PSW) and Oakville-Milton Wetlands and Uplands Candidate ANSI (Life Science Provincial). Several small wetlands that are complexed with the PSW are present throughout Segment S5 within agricultural and deciduous forest communities. Sixteen Mile Creek Candidate ANSI and several parts of the Oakville-Milton Wetlands and Uplands Candidate ANSI are present throughout the segment as well.

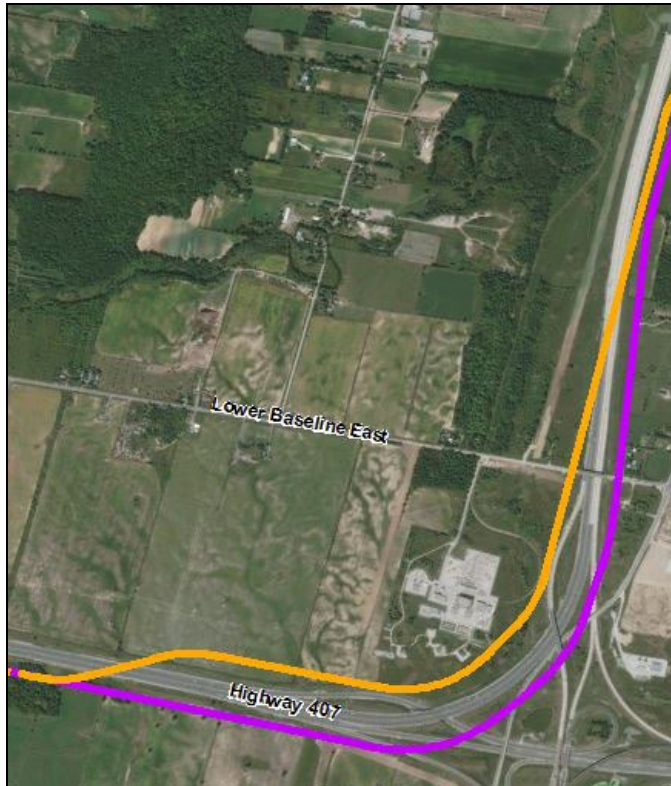
### ***Trafalgar Road Station Option***

The area associated with the Trafalgar Road Station Option south of the 407 ETR and west of Trafalgar Road is associated with agricultural fields and hedgerows, cultural meadow and manicured areas associated with the GO Transit Carpool Parking Lot where the wildlife assemblage is considered tolerant to human disturbance/anthropogenic influences. A portion of an Oak-Hickory Deciduous Forest and a small shallow marsh are also associated with this station option. These vegetation communities support a high diversity of plant and wildlife habitats. These natural areas are contiguous with forest to the west, the southern portion of which is part of the Oakville-Milton Wetlands and Uplands Provincial Candidate Life Science ANSI.

***Trafalgar Road and The Bus Storage Yard Option***

The area associated with the proposed Trafalgar Road and the bus storage yard located south of the 407 ETR and east of Trafalgar Road, outlined in black in the figure above, is comprised primarily of agricultural fields, cultural meadow, and a shallow marsh and cultural woodland that are associated with a single residence. Within these areas the wildlife assemblage is considered tolerant to human disturbance/anthropogenic influences. The shallow marsh community may provide amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife.

**Segment S6: East of Trafalgar Road to East of Lower Base Line**



***Alignment Option 1***

Wildlife habitat in this segment consists almost entirely of cultural meadows/woodlands, agricultural lands, hedgerow and manicured grass. Additionally, there are some deciduous forest lands and cultural thicket. This segment contains a very high level of disturbance and few natural heritage features that provide limited habitat for wildlife, with the exception of watercourses from tributaries of Joshua's Creek.

***Alignment Option 2***

Wildlife habitat in this segment consists almost entirely of cultural meadows/woodlands, agricultural lands, hedgerow and manicured grass. This segment contains a very high level of disturbance and few natural heritage features that provide habitat for wildlife, with the exception of watercourses from tributaries of Joshua's Creek.

### Segment S7: East of Lower Base Line to North of Britannia Road



#### ***Alignment Options 1 and 2***

Most of the land within this segment is comprised of deciduous forests, cultural meadow/thicket/savannah, agricultural/manicured lands, hedgerow and stormwater management ponds. Tributaries of East Sixteen Mile Creek are also present throughout the segment area, which feed into open aquatic vegetation communities. The East Sixteen Mile Creek valleyland is expected to function as a locally significant wildlife movement corridor because of the linear natural areas associated with the feature in an otherwise highly disturbed landscape.

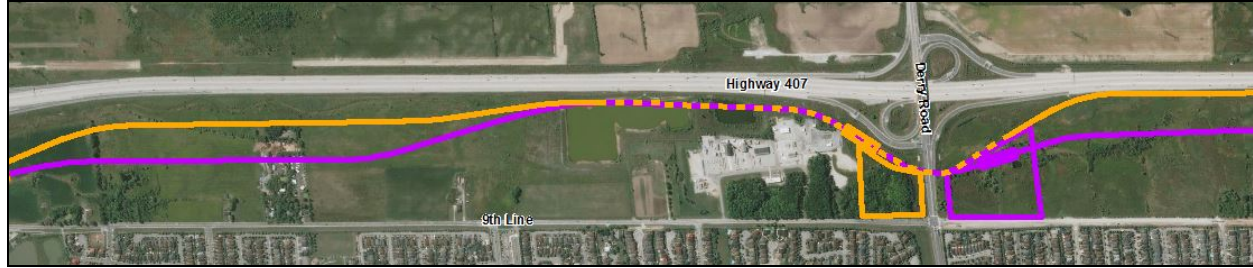
#### ***Britannia Road Station Option A***

Cultural meadow dominates the area associated with Station A, south of Britannia Road and east of the 407 ETR. Within this station option there is also a residential unit with manicured areas, and meadow marsh communities that are typically associated with a Tributary of East Sixteen Mile Creek. Despite the presence of the meadow marsh, amphibian breeding habitat is not likely present within the Option A footprint. However, the East Sixteen Mile Creek valleyland is expected to function as a locally significant wildlife movement corridor because of the linear natural areas associated with the feature in an otherwise highly disturbed landscape.

#### ***Britannia Road Station Option B***

Cultural meadow, manicured areas, disturbed areas associated with commercial development, and a small meadow marsh, and a small shallow marsh are present within the Option B footprint. There may be opportunities for amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife within these marsh communities that are associated with a Tributary of East Sixteen Mile Creek in the northern portion of the Option B footprint. In addition, the East Sixteen Mile Creek valleyland is expected to function as a locally significant wildlife movement corridor because of the linear natural areas associated with the feature in an otherwise highly disturbed landscape.

### **Segment S8: North of Britannia Road to North of Derry Road**



#### ***Alignment Option 1***

The majority of the habitat in this segment consists of agricultural/manicured lands, hedgerow, cultural meadows/thicket/woodlands and deciduous forests. The segment is also comprised of several aquatic features, including shallow marsh, thicket swamp, stormwater management ponds, as well as the more sensitive tributaries of East Sixteen Mile Creek. As mentioned in Segment S7, the East Sixteen Mile Creek valleyland acts as a high-quality natural heritage feature within this segment and can provide important north-south movement opportunity/linkages for wildlife within, or in the immediate vicinity of the study area. The swamp features may function as amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife. However, these habitats were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences.

#### ***Alignment Option 2***

The majority of the habitat in this segment consists of agricultural/manicured lands, hedgerow, cultural meadows/thicket/woodlands and deciduous forests. The segment is also comprised of several aquatic features, including shallow marsh, thicket swamp, stormwater management ponds, as well as the more sensitive tributaries of East Sixteen Mile Creek. As mentioned in Segment S7, the East Sixteen Mile Creek valleyland acts as a high-quality natural heritage feature within this segment and can provide important north-south movement opportunity/linkages for wildlife within, or in the immediate vicinity of the study area. The swamp features may function as amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife. However, these habitats were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences.

#### ***Derry Road Station Option A***

Cultural meadow, wetland and manicured areas are dominant within the Station Option A footprint north of Derry Road and east of the 407 ETR. Within this station footprint there is a former residential unit with manicured areas and planted trees, a hedgerow, meadow marsh and swamp thicket that are associated with Tributary of East Sixteen Mile Creek. Overall, these vegetation communities are influenced by local land use practices including former agricultural land use and infrastructure. As mentioned in Segment S7, the East Sixteen Mile Creek valleyland acts as a high-quality natural heritage feature within this segment and can provide important north-south movement opportunity/linkages for wildlife within, or in the immediate vicinity of the study area. The wetland features may function as amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife. However, these habitats were found to contain a wildlife assemblage, which is considered tolerant to human disturbance/anthropogenic influences.

#### ***Derry Road Station Option B***

A large deciduous forest and cultural meadow were identified within the Station Option B footprint, south of Britannia Road. The deciduous forest is connected to two other forest fragments that have been bisected by driveways. This forest appears to be in good condition and likely contains habitat for a diverse variety of plants and wildlife. As previously noted, the East Sixteen Mile Creek valleyland acts as a high-

quality natural heritage feature within this segment and can provide important north-south movement opportunity/linkages for wildlife within, or in the immediate vicinity of the study area.

### Segment S9: North of Derry Road to West of Heritage Road



#### ***Alignment Option 1***

This alignment option in Segment S9, of which a portion passes through a hydro corridor where the runningway will be constructed underground (tunnel), contains wildlife habitat primarily within vegetation communities such as cultural meadow, hedgerow, agricultural and manicured fields. Aquatic features are also present, such as shallow marsh, meadow marsh, reed-canary grass mineral meadow marsh, and cattail mineral shallow marsh, which are associated tributaries of East Sixteen Mile Creek. As mentioned in Segment S8, the East Sixteen Mile Creek valleyland is a high-quality natural heritage feature within this segment and can provide important north-south movement opportunity/linkages for wildlife within, or in the immediate vicinity of the study area. The wetland and swamp features may also function as amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife.

#### ***Alignment Option 2***

This alignment option in Segment S9, east and then south of the 407 ETR, contains wildlife habitat primarily within vegetation communities such as cultural meadow, hedgerow, agricultural and manicured fields. Aquatic features are also present, such as shallow marsh, meadow marsh, reed-canary grass mineral meadow marsh, and cattail mineral shallow marsh, which are associated tributaries of East Sixteen Mile Creek. As mentioned in Segment S8, the East Sixteen Mile Creek valleyland is a high-quality natural heritage feature within this segment and can provide important north-south movement opportunity/linkages for wildlife within, or in the immediate vicinity of the study area. The wetland and swamp features may also function as amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife.

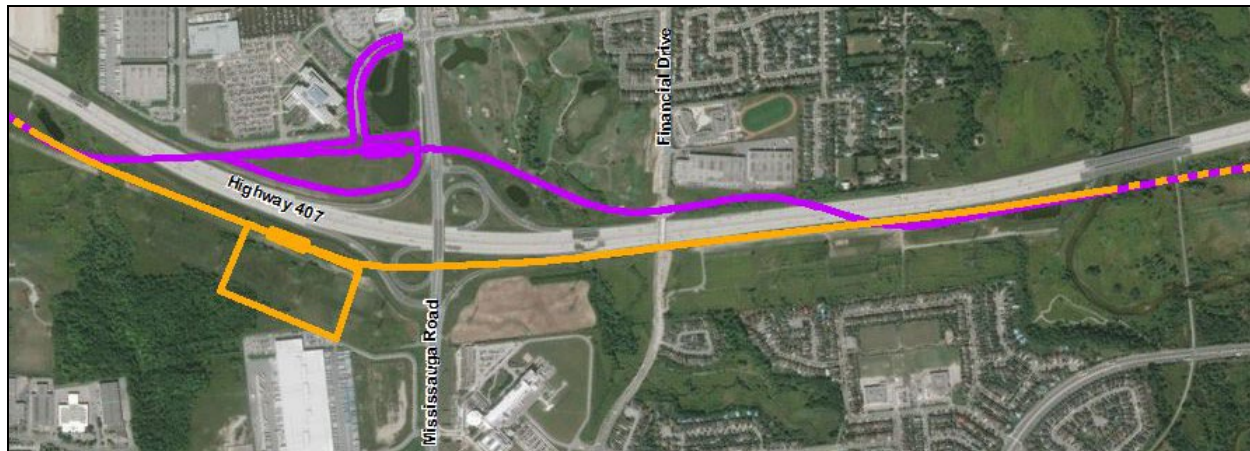
### ***Winston Churchill Blvd Station Option***

Cultural meadow, manicured areas, an area of disturbance associated with a horse stable, and a small shallow marsh dominate the Winston Churchill Blvd Station Option footprint, east of Meadowpine Blvd. The wetland feature may also function as amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife, otherwise, the wildlife assemblage associated with this area is considered tolerant to human disturbance/anthropogenic influences.

### ***The Bus Storage Yard***

Agricultural fields, manicured areas associated with a driving range, and cultural meadow, and two shallow marsh communities are located within the bus storage yard footprint, outlined in black in the figure above. The shallow marshes are associated with a Tributary of East Sixteen Mile Creek. Wetland features may also function as amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife, otherwise, the wildlife assemblage associated with the bus storage yard footprint is considered tolerant to human disturbance/anthropogenic influences. However, as noted in Segment S8, the East Sixteen Mile Creek valleyland acts as a high-quality natural heritage feature and can provide important north-south movement opportunity/linkages for wildlife within, or in the immediate vicinity of the study area.

### **Segment S10: West of Heritage Road to East of Creditview Road**



### ***Alignment Option 1***

Much of the habitat within this segment consists of cultural meadow/woodland/thicket communities, manicured land and storm ponds. This segment also contains watercourse crossings from Mullet Creek, Levi's Creek and the Credit River.

### ***Alignment Option 2***

Much of the habitat within this segment consists of agricultural or manicured land, cultural meadow/woodland/thicket communities, stormwater management ponds, and deciduous forest. Mineral meadow marsh is also present, as the segment contains watercourses from Mullet Creek, Levi's Creek and the Credit River. The watercourses and marsh meadow communities may contain higher quality wildlife habitat, as it may function as amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife.

At the east end of Segment S10, east of the Credit River, the runningway for both options impact the northern edge of a meadow marsh community that is part of the provincially significant Churchville-Norval Wetland Complex. Though this is edge habitat, there may be functional amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife present.



A change to this segment has been made since the initial analysis of Alignment Option 1 and Alignment Option 2. This was due to new information received regarding existing archaeological potential south of the 407 ETR around the Credit River area. The change consists of crossing the Credit River on the north side of the 407 ETR. More information is available in Section 3.3.1.

#### ***Mississauga Station Option A***

Cultural meadow and manicured areas are dominant within the Station Option A footprint north of the 407 ETR. The wildlife assemblage associated with this area is considered tolerant to human disturbance/anthropogenic influences.

#### ***Mississauga Station Option B***

Cultural meadow is dominant within the Station Option B footprint south of the 407 ETR. There is also a forested community associated with an Environmentally Significant Area at the very southwest corner of the Option B footprint that would be impacted. The forest community provides habitat for a wide range of plants and wildlife.

### **Segment S11: East of Creditview Road to West of Hurontario Street**



#### ***Alignment Options 1 and 2***

The majority of the habitat in this segment consists largely of agricultural fields, cultural meadow communities, cultural thicket and woodland communities, stormwater management ponds with a minor lowland forest component. This segment also contains watercourses from the Credit River and Fletcher's Creek, there are also aquatic vegetation communities associated with these watercourses, such as reed-canary grass mineral meadow marsh, and cattail mineral shallow marsh.

A meadow marsh community at the west end of Segment S11 is also associated with the provincially significant Churchville-Norval Wetland Complex. The runningway for both Options 1 and 2 will impact the northern edge of this wetland community which may contain functional breeding amphibian habitat and habitat for aquatic or semi-aquatic wildlife present.

#### **2.3.3.2 Wildlife Species**

A list of wildlife recorded within habitats along the 407 Transitway corridor by LGL and from secondary source data is presented in **Table 3**. A total of 161 wildlife species have been recorded from secondary source data and during LGL's field observations including 11 herpetofauna, 135 birds and 14 mammals. Based on LGL's field investigations conducted along the preferred Transitway alignment and in the vicinity of the potential station locations (and adjacent lands up to 120 m (north and south) from the future infrastructure footprint), 81 of the 149 wildlife species were verified to include five herpetofauna,

63 bird, and 13 mammal species. Most of the species observed were birds identified through calls and sightings, with more modest numbers of herpetofauna and mammal species recorded. **Table 3** also includes records of wildlife species which have been documented within, or in the vicinity of, the study area, through secondary data sources.

### ***Birds***

Breeding bird surveys were conducted by LGL on several dates during the 2018 and 2019 breeding bird season to document breeding bird evidence (BBE) and to characterize the nature, extent and significance of breeding bird usage of the habitats within the study area. Breeding bird survey methodology and breeding bird behaviours used as evidence of breeding success were categorized according to the Breeding Bird Atlas (Cadman et al., 2007). Locations of the breeding bird point count stations are shown on **Figures 2a to 2f**. Generally, breeding bird survey stations were established within natural areas (e.g. creek valleyland, forests, etc.) or where potential species at risk habitat was identified (e.g. grasslands). Areas not surveyed using the above-mentioned protocol were surveyed using informal wandering transects and BBE collected were treated as incidental. Additional species identified during passive bird surveys are presented in **Table 3**.

Eighty-four bird species were identified as previously recorded in the immediate vicinity of the study area based on data provided by CVC, while CH recorded 114 bird species (see **Table 3**). A total of 143 bird species were identified as having the potential to be present within the vicinity of the study area based on 10 x 10 km Breeding Bird Atlas data (Cadman *et al.* 2007) (see **Appendix B**). The bird assemblage identified within the Breeding Bird Atlas data represents a wide-array of habitat types, including (but not limited to) open-country/agricultural, grassland, thicket, deciduous forest, coniferous forest, mixed forest, interior forest, forest edge, wetland, aquatic and anthropogenic. However, as the Breeding Bird Atlas data extends well beyond the limits of the study area (i.e., 10 x 10 km squares), some of the species identified may not be representative of the habitat types present within the study area. As a result, the bird assemblage represented within the CVC and CH data is considered more representative of the habitat types found within the study area (**Table 3**). Furthermore, LGL's 2018 and 2019 survey results provided additional data on the bird assemblage found within the study area (**Appendix G**).

The study area contained a moderate number of breeding bird species representing a variety of habitat types. Breeding evidence was obtained during LGL's field investigations/surveys for 48 species of birds (see **Appendix G**). Breeding evidence was confirmed in 11 species, considered probable in 26 species, and possible for the remaining 11 species in **Appendix G**. Confirmed breeding by bird species was generally documented based on adults returning to nests, typically under bridge structures associated with 407 ETR or on structures associated with residential areas or agricultural lands. Species confirmed to be breeding include Barn Swallow (*Hirundo rustica*), Cliff Swallow (*Petrochelidon pyrrhonota*) and Eastern Kingbird (*Tyrannus tyrannus*). Although no Osprey (*Pandion haliaetus*) were observed during LGL's survey, one nest was observed which may be incidental evidence of breeding behaviour. A number of species (26 total) were identified as suspected/probable breeders based on Breeding Bird Evidence (BBE) such as a territory being established, or agitated behaviour exhibited by individuals. Some of these species include Song Sparrow (*Melospica melodia*), American Robin (*Turdus migratorius*), and Warbling Vireo (*Vireo gilvus*). Species that were most commonly encountered across the study area were generally species associated with open country/agricultural, anthropogenic areas, forest/forest edge and aquatic habitat types. Nine bird species at risk were identified by secondary source data and four of these species were confirmed during LGL's 2018 and 2019 surveys (Eastern Wood Pewee, Barn Swallow, Bobolink and Eastern Meadowlark). There are also multiple species that are considered area-sensitive and/or interior species according to the Significant Wildlife Habitat Technical Guide (MNR 2000). A number of bird species identified within the study area are protected under the *Migratory Birds Convention Act* (MBCA) and/or the *Fish and Wildlife Conservation Act* (see **Table 3** and **Appendix G**).

**TABLE 3.**  
**WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA BY LGL AND SECONDARY SOURCE DATA**

Wildlife	Scientific Name	Common Name	Species Status under Legislation/ Local Sensitivity				Source of Species Identification	
			Canada SARA	Ontario ESA	Legal Status	Local	LGL <sup>1</sup>	Secondary Source <sup>2</sup>
Herpetofauna	<i>Anaxyrus americanus</i>	American Toad					*	*
	<i>Lithobates catesbeianus</i>	American Bullfrog			FWCA(P)			*
	<i>Hyla versicolor</i>	Gray Treefrog			FWCA(P)		*	
	<i>Pseudacris triseriata</i>	Western Chorus Frog	THR	-			*	*
	<i>Lithobates sylvatica</i>	Wood Frog						*
	<i>Lithobates pipiens</i>	Northern Leopard Frog						*
	<i>Lithobates clamitans</i>	Green Frog					*	*
	<i>Plethodon cinereus</i>	Red-backed Salamander			FWCA(P)			*
	<i>Storeria dekayi</i>	Brownsnake						*
	<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake					*	*
	<i>Chelydra serpentina</i>	Snapping Turtle	SC	SC	FWCA(P)			*
Birds	<i>Aix sponsa</i>	Wood Duck			MBCA		*	*
	<i>Anas platyrhynchos</i>	Mallard			MBCA		*	*
	<i>Meleagris gallopavo</i>	Wild Turkey			FWCA(P)		*	
	<i>Ardea herodias</i>	Great Blue Heron			MBCA		*	
	<i>Accipiter cooperii</i>	Cooper's Hawk			FWCA(P)			*
	<i>Buteo jamaicensis</i>	Red-tailed Hawk			FWCA(P)		*	*
	<i>Falco sparverius</i>	American Kestrel			FWCA(P)			*
	<i>Charadrius vociferus</i>	Killdeer			MBCA		*	*
	<i>Actitis macularius</i>	Spotted Sandpiper			MBCA		*	*
	<i>Scolopax minor</i>	American Woodcock			MBCA			*
	<i>Tringa solitaria</i>	Solitary Sandpiper			-			*
	<i>Otus asio</i>	Eastern Screech-owl			FWCA(P)			*
	<i>Chaetura pelagica</i>	Chimney Swift	THR	THR	MBCA			*
	<i>Columba livia</i>	Rock Dove			-		*	*
	<i>Zenaidura macroura</i>	Mourning Dove			MBCA		*	*
	<i>Picoides pubescens</i>	Downy Woodpecker			MBCA		*	*

**TABLE 3.**  
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			Canada SARA	Ontario ESA	Legal Status	Local	LGL <sup>1</sup>	Secondary Source <sup>2</sup>
	<i>Picoides villosus</i>	Hairy Woodpecker			MBCA		*	*
	<i>Colaptes auratus</i>	Northern Flicker			MBCA		*	*
	<i>Tyrannus tyrannus</i>	Eastern Kingbird			MBCA		*	*
	<i>Myiarchus crinitus</i>	Great-crested Flycatcher			MBCA		*	*
	<i>Empidonax minimus</i>	Least Flycatcher			MBCA		*	
	<i>Contopus virens</i>	Eastern Wood Pewee	SC	SC	MBCA		*	*
	<i>Empidonax traillii</i>	Willow Flycatcher			MBCA		*	*
	<i>Vireo gilvus</i>	Warbling Vireo			MBCA		*	*
	<i>Vireo olivaceus</i>	Red-eyed Vireo			MBCA	INT	*	*
	<i>Ceryle alcyon</i>	Belted Kingfisher			MBCA		*	*
	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo			MBCA			*
	<i>Poliophtila caerulea</i>	Blue-grey Gnatcatcher			MBCA			*
	<i>Sayornis phoebe</i>	Eastern Phoebe			MBCA		*	*
	<i>Cyanocitta cristata</i>	Blue Jay			FWCA (P)		*	*
	<i>Bubo scandiacus</i>	Snowy Owl			FWCA (P)			*
	<i>Corvus brachyrhynchos</i>	American Crow			MBCA		*	*
	<i>Eremophila alpestris</i>	Horned Lark			MBCA		*	*
	<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow			MBCA		*	*
	<i>Hirundo rustica</i>	Barn Swallow		THR	MBCA		*	*
	<i>Tachycineta bicolor</i>	Tree Swallow			MBCA			*
	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow			MBCA		*	*
	<i>Poecile atricapillus</i>	Black-capped Chickadee			MBCA		*	*
	<i>Sitta carolinensis</i>	White-breasted Nuthatch			MBCA	SWH	*	*
	<i>Hylocichla mustelina</i>	Wood Thrush	THR	SC	MBCA			*
	<i>Catharus guttatus</i>	Hermit Thrush			MBCA			*
	<i>Catharus ustulatus</i>	Swainson's Thrush			MBCA			*

**TABLE 3.**  
**WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA BY LGL AND SECONDARY SOURCE DATA**

Wildlife	Scientific Name	Common Name	Species Status under Legislation/ Local Sensitivity				Source of Species Identification	
			Canada SARA	Ontario ESA	Legal Status	Local	LGL <sup>1</sup>	Secondary Source <sup>2</sup>
	<i>Turdus migratorius</i>	American Robin			MBCA		*	*
	<i>Dumetella carolinensis</i>	Gray Catbird			MBCA		*	*
	<i>Mimus polyglottos</i>	Northern Mockingbird			MBCA			*
	<i>Sturnus vulgaris</i>	European Starling			-		*	*
	<i>Bombycilla garrulus</i>	Cedar Waxwing			MBCA		*	*
	<i>Dendroica petechia</i>	Yellow Warbler			MBCA		*	*
	<i>Geothlypis philadelphia</i>	Mourning Warbler			MBCA		*	*
	<i>Seiurus aurocapilla</i>	Ovenbird			MBCA	SWH/INT		*
	<i>Setophaga ruticilla</i>	American Redstart			MBCA	SWH		*
	<i>Geothlypis trichas</i>	Common Yellowthroat			MBCA		*	*
	<i>Spizella passerina</i>	Chipping Sparrow			MBCA		*	*
	<i>Spizella pusilla</i>	Field Sparrow			MBCA		*	*
	<i>Passerculus sanwicensis</i>	Savannah Sparrow			MBCA	SWH	*	*
	<i>Melospiza georgiana</i>	Swamp Sparrow			MBCA		*	*
	<i>Melospica melodia</i>	Song Sparrow			MBCA		*	*
	<i>Cardinalis cardinalis</i>	Northern Cardinal			MBCA		*	*
	<i>Dendroica palmarum</i>	Palm Warbler			MBCA			*
	<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak			MBCA		*	*
	<i>Pandion haliaetus</i>	Osprey			FWCA(P)			*
	<i>Passerina cyanea</i>	Indigo Bunting			MBCA		*	*
	<i>Dolichonyx oryzivorus</i>	Bobolink	THR	THR	MBCA		*	*
	<i>Agelaius phoeniceus</i>	Red-winged Blackbird			-		*	*
	<i>Sturnella magna</i>	Eastern Meadowlark	THR	THR	MBCA		*	*
	<i>Melospiza lincolnii</i>	Lincoln's Sparrow			MBCA			*
	<i>Quiscalus quiscula</i>	Common Grackle			-		*	*
	<i>Molothrus ater</i>	Brown-headed Cowbird			-		*	*

**TABLE 3.**  
**WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA BY LGL AND SECONDARY SOURCE DATA**

Wildlife	Scientific Name	Common Name	Species Status under Legislation/ Local Sensitivity				Source of Species Identification	
			Canada SARA	Ontario ESA	Legal Status	Local	LGL <sup>1</sup>	Secondary Source <sup>2</sup>
	<i>Icterus spurius</i>	Orchard Oriole			MBCA			*
	<i>Icterus galbula</i>	Baltimore Oriole			MBCA		*	*
	<i>Carpodacus mexicanus</i>	House Finch			MBCA			*
	<i>Carduelis tristis</i>	American Goldfinch			MBCA		*	*
	<i>Passer domesticus</i>	House Sparrow			-		*	*
	<i>Parula americana</i>	Northern Parula			MBCA			*
	<i>Larus delawarensis</i>	Ring-billed Gull			MBCA		*	*
	<i>Larus minutus</i>	Little Gull			-			*
	<i>Ardea herodias</i>	Great Blue Heron			MBCA		*	*
	<i>Sitta canadensis</i>	Red-breasted Nuthatch			MBCA		*	*
	<i>Regulus calendula</i>	Ruby-crowned Kinglet			MBCA		*	*
	<i>Troglodytes aedon</i>	House Wren			MBCA		*	*
	<i>Riparia riparia</i>	Bank Swallow			MBCA			*
	<i>Mniotilta varia</i>	Black and White Warbler			MBCA			*
	<i>Setophaga virens</i>	Black-throated Green Warbler			MBCA			*
	<i>Dendroica fusca</i>	Blackburnian Warbler			MBCA			*
	<i>Dendroica caerulescens</i>	Black-throated Blue Warbler			MBCA			*
	<i>Vermivora cyanoptera</i>	Blue-winged Warbler			MBCA			*
	<i>Vermivora peregrina</i>	Tennessee Warbler			MBCA			*
	<i>Certhia americana</i>	Brown Creeper			MBCA			*
	<i>Toxostoma rufum</i>	Brown Thrasher			MBCA		*	*
	<i>Zonotrichia leucophrys</i>	White-crowned Sparrow			MBCA			*
	<i>Branta canadensis</i>	Canada Goose			MBCA		*	*
	<i>Thryothorus ludovicianus</i>	Carolina Wren			MBCA			*

**TABLE 3.**  
**WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA BY LGL AND SECONDARY SOURCE DATA**

Wildlife	Scientific Name	Common Name	Species Status under Legislation/ Local Sensitivity				Source of Species Identification	
			Canada SARA	Ontario ESA	Legal Status	Local	LGL <sup>1</sup>	Secondary Source <sup>2</sup>
	<i>Setophaga pensylvanica</i>	Chestnut-sided Warbler			MBCA			*
	<i>Chordeiles minor</i>	Common Nighthawk	SC	-	MBCA			*
	<i>Junco hyemalis</i>	Dark-eyed Junco			MBCA		*	*
	<i>Dendroica discolor</i>	Prairie Warbler			MBCA			*
	<i>Sialia sialis</i>	Eastern Bluebird			MBCA			*
	<i>Pipilo erythrophthalmus</i>	Eastern Towhee			MBCA		*	*
	<i>Regulus satrapa</i>	Golden-crowned Kinglet			MBCA			*
	<i>Ammodramus savannarum</i>	Grasshopper Sparrow	SC	SC	MBCA			*
	<i>Bubo virginianus</i>	Great Horned Owl			FWCA(P)			*
	<i>Tringa flavipes</i>	Lesser Yellowlegs			MBCA			*
	<i>Tringa melanoleuca</i>	Greater Yellowlegs			MBCA			*
	<i>Butorides virescens</i>	Green Heron			MBCA			*
	<i>Larus argentatus</i>	Herring Gull			MBCA			*
	<i>Setophaga magnolia</i>	Magnolia Warbler			MBCA			*
	<i>Cistothorus palustris</i>	Marsh Wren			MBCA			*
	<i>Vireo philadelphicus</i>	Philadelphia Vireo			MBCA			*
	<i>Leiothlypis ruficapilla</i>	Nashville Warbler			MBCA			*
	<i>Circus cyaneus</i>	Northern Harrier			FWCA(P)			*
	<i>Wilsonia canadensis</i>	Canada Warbler	THR	SC	MBCA			*
	<i>Lanius excubitor</i>	Northern Shrike			-			*
	<i>Parkesia noveboracensis</i>	Northern Waterthrush			MBCA			*
	<i>Falco peregrinus</i>	Peregrine Falcon	THR	SC	FWCA(P)			*
	<i>Dendroica coronata</i>	Yellow-rumped Warbler			MBCA			*
	<i>Dryocopus pileatus</i>	Pileated Woodpecker			MBCA		*	*
	<i>Setophaga pinus</i>	Pine Warbler			MBCA			*
	<i>Haliaeetus leucocephalus</i>	Bald Eagle	-	SC	FWCA(P)			*

**TABLE 3.**  
**WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA BY LGL AND SECONDARY SOURCE DATA**

Wildlife	Scientific Name	Common Name	Species Status under Legislation/ Local Sensitivity				Source of Species Identification	
			Canada SARA	Ontario ESA	Legal Status	Local	LGL <sup>1</sup>	Secondary Source <sup>2</sup>
	<i>Melanerpes carolinus</i>	Red-bellied Woodpecker			MBCA			*
	<i>Buteo lineatus</i>	Red-shouldered Hawk			FWCA(P)			*
	<i>Archilochus colubris</i>	Ruby-throated Hummingbird			MBCA			*
	<i>Bonasa umbellus</i>	Ruffed Grouse			FWCA(G), MBCA			*
	<i>Gallinago delicata</i>	Wilson's Snipe			MBCA			*
	<i>Piranga olivacea</i>	Scarlet Tanager			MBCA			*
	<i>Accipiter striatus</i>	Sharp-shinned Hawk			FWCA(P)			*
	<i>Buteo lagopus</i>	Rough-legged Hawk			FWCA(P)			*
	<i>Cathartes aura</i>	Turkey Vulture			FWCA(P)		*	*
	<i>Catharus fuscescens</i>	Veery			MBCA			*
	<i>Poocetes gramineus</i>	Vesper Sparrow			MBCA			*
	<i>Chlidonias niger</i>	Black Tern	-	SC	MBCA			*
	<i>Zonotrichia albicollis</i>	White-throated Sparrow			MBCA			*
	<i>Troglodytes hiemalis</i>	Winter Wren			MBCA			*
	<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker			MBCA			*
	<i>Coccyzus americanus</i>	Yellow-billed Cuckoo			MBCA			*
	<i>Vireo flavifrons</i>	Yellow-throated Vireo			MBCA			*
<b>Mammals</b>	<i>Blarina brevicauda</i>	N. Short-tailed Shrew			FWCA(P)		*	
	<i>Tamias striatus</i>	Eastern Chipmunk			FWCA(P)		*	*
	<i>Sylvilagus floridanus</i>	Eastern Cottontail			FWCA(G)		*	*
	<i>Marmota monax</i>	Groundhog			-			*
	<i>Sciurus carolinensis</i>	Eastern Gray Squirrel			FWCA(G)		*	
	<i>Tamiasciurus hudsonicus</i>	Red Squirrel			FWCA(F)		*	
	<i>Castor canadensis</i>	Beaver			FWCA(F)		*	*
	<i>Microtus pennsylvanicus</i>	Meadow Vole			-		*	
	<i>Neovison vison</i>	American Mink			FWCA(F)		*	*



**TABLE 3.**  
**WILDLIFE SPECIES DOCUMENTED WITHIN THE STUDY AREA BY LGL AND SECONDARY SOURCE DATA**

Wildlife	Scientific Name	Common Name	Species Status under Legislation/ Local Sensitivity				Source of Species Identification	
			Canada SARA	Ontario ESA	Legal Status	Local	LGL <sup>1</sup>	Secondary Source <sup>2</sup>
	<i>Procyon lotor</i>	Northern Raccoon			FWCA(F)		*	
	<i>Canis latrans</i>	Coyote			FWCA(F)		*	
	<i>Ondatra zibethica</i>	Muskrat			FWCA(F)		*	*
	<i>Mephitis mephitis</i>	Striped Skunk			FWCA(F)		*	
	<i>Odocoileus virginianus</i>	White-tailed Deer			FWCA(G)		*	*

SARA – federal *Species at Risk Act*:

- END - Endangered
- THR – Threatened
- SC - Special Concern

ESA - *Ontario Endangered Species Act, 2007*

- END – Endangered
- THR – Threatened
- SC - Special Concern

Source of Species Identification:

<sup>1</sup>Species recorded within the study area during field investigations (LGL 2018/2019).

<sup>2</sup>Species identified by secondary source data, including Ontario Reptile and Amphibian Atlas, CH and CVC.

Other:

- Significant Wildlife Habitat Technical Guide:
- SWH – Area Sensitive Species
- INT - Interior Species

For definitions of species ranks, refer to **Appendix E**.

Legal Status:

- MBCA - *Migratory Birds Convention Act*
- ESA - *Endangered Species Act, 2007*
- SARA - *Species at Risk Act*
- FWCA - *Fish and Wildlife Conservation Act*
- (P) Protected Species (G) Game species (F) Furbearing mammals

### ***Mammals***

A total of 13 mammal species were recorded by LGL during field investigations conducted in 2018 and 2019. The mammal assemblage identified is typically associated with forest, forest edge, meadow/open-country, aquatic and anthropogenic habitat types. Species identified, such as beaver (*Castor canadensis*), American mink (*Neovison vison*), northern raccoon (*Procyon lotor*) and muskrat (*Ondatra zibethica*) were typically identified in association with aquatic environments such as stormwater management ponds or watercourse crossing, while other species identified, such as white-tailed deer (*Odocoileus virginianus*), eastern cottontail (*Sylvilagus floridanus*), meadow vole (*Microtus pennsylvanicus*), northern short-tailed shrew (*Blarina brevicauda*) and coyote (*Canis latrans*) were generally identified in association with agricultural lands or forested habitats. Species such as striped skunk (*Mephitis mephitis*), eastern gray squirrel (*Sciurus carolinensis*) and red squirrel (*Tamiasciurus hudsonicus*) were most often associated with urbanized habitats or documented as road mortality. Generally, the mammal species documented within the study area represent an assemblage that readily utilizes human influenced landscapes.

No species at risk mammals were identified during field surveys. Species at risk data provided by the MNRF, Aurora District Office in a letter dated September 6, 2017 suggests that four species at risk bats have the potential to be found within the vicinity of the study area. These species include Eastern Small-footed Myotis (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tri-coloured Bat (*Perimyotis subflavus*).

### ***Herpetofauna***

Methodologies outlined in the Marsh Monitoring Program (2000) were applied to confirm the presence of anuran species, document potential breeding habitat/areas, and confirm the nature, extent and significance of amphibian usage. Twenty stations were strategically placed throughout the study area where amphibian breeding habitat was suspected (based on aerial photo interpretation and field review) and where access was permitted. Anuran surveys were conducted on three separate occasions during the spring and summer of 2019. Due to the large study area, consecutive nights were required to complete the survey in its entirety. Each survey was conducted during appropriate weather conditions, beginning one half hour after sunset and concluding just prior to midnight (see **Table 4**). Surveys were completed during periods of peak anuran breeding activity and vocalization.

Anuran breeding evidence was documented for five species during the 2019 surveys. Vocalizing male American Toad (*Anaxyrus americanus*), Green Frog (*Lithobates clamitans*), Gray Tree Frog (*Hyla versicolor*), Western Chorus Frog (*Pseudacris triseriata*) and Spring Peeper (*Pseudacris crucifer*) were noted within the study area, or in the immediate vicinity of the study area. A summary of anuran species and their respective call level codes is presented in **Table 4**.

Overall, most aquatic habitats identified throughout the study area displayed evidence of amphibian breeding during the 2019 survey periods. Amphibian breeding behaviour was observed in the following locations:

- Tributary of Shoreacres Creek (east of 407 ETR north of Dundas Street);
- Tributary of Shoreacres Creek (east of 407 ETR, south of Walkers Line);
- two Tributaries of Sheldon Creek (east of 407 ETR, west of Palladium Way);
- Tributary of Sheldon Creek (west of 407 ETR, south of Appleby Line);
- Stormwater Management Pond (west of 407 ETR, north of Appleby Line off-ramp);
- Bronte Creek crossing (east of 407 ETR);
- Stormwater Management Pond (east of 407 ETR, north of Bronte Creek crossing);

- Tributary of Fourteen Mile Creek (west of 407 ETR, north of Tremaine Road at Truck Inspection Station);
- Sixteen Mile Creek (east of 407 ETR);
- Stormwater Management Pond (east of 407 ETR, south of Sixteen Mile Creek crossing);
- Agricultural Pond (east of 407 ETR off-ramp, south of Neyagawa Boulevard);
- Agricultural Pond (east of 407 ETR, north of 6th Line);
- Vernal Pool (east of 407 ETR, south of Trafalgar Road); and,
- Tributary of East Sixteen Mile Creek (east of 407 ETR, south of Ninth Line).

Herpetofauna occurrence records within the vicinity of the study area were obtained from the Ontario Reptile and Amphibian Atlas, CH and CVC. Data obtained from the Ontario Reptile and Amphibian Atlas and Conservation Halton confirmed records for the five species recorded during LGL's 2019 anuran surveys (**Table 4**), as well as an additional five species. These include American Bullfrog (*Lithobates catesbeianus*); Northern Leopard Frog (*Lithobates pipiens*); Wood Frog (*Lithobates sylvaticus*); Red-backed Salamander (*Plethodon cinereus*); Brownsnake (*Storeria dekayi*); and, Snapping Turtle (*Chelydra serpentina*) (Ontario Nature, 2017). Data obtained from Credit Valley Conservation included records for three of the above-mentioned species (American Toad, Gray Treefrog and Green Frog).

Only a single reptile species was observed by LGL during field investigations in 2018 and 2019. Several Eastern Gartersnake (*Thamnophis sirtalis sirtalis*) were observed along riparian areas associated with watercourses such as Bronte and Sixteen Mile Creek. Incidental observations of amphibian species such as Green Frog and American Toad were also made along these riparian areas.

Of the herpetofauna species observed by LGL, only one is a species at risk. The Western Chorus Frog, a species regulated under the federal *Species at Risk Act*, was identified at several anuran survey stations (see **Table 4**). Secondary source data contained records for two additional species at risk, Blanding's Turtle (*Emydoidea blandingii*) and Snapping Turtle (*Chelydra serpentina*), in the vicinity of the study area.

**TABLE 4.**  
**AMPHIBIAN SURVEY OF STUDY AREA AND ADJACENT LANDS BY LGL LIMITED**

Station	Scientific Name	Common Name	SARA	ESA	Local	Legal Status	Call Level Code	Habitat Type
1	<i>Anaxyrus americanus</i>	American Toad	-	-	L4	-	3	SWM Pond along Tributary of Shoreacres Creek
	<i>Hyla versicolor</i>	Gray Tree Frog	-	-	L2	FWCA(P)	2	
	<i>Lithobates clamitans</i>	Green Frog	-	-	L4	-	1	
2	<i>Anaxyrus americanus</i>	American Toad	-	-	L4	-	1	Roadside SWM Pond along Tributary of Shoreacres Creek
	<i>Hyla versicolor</i>	Gray Tree Frog	-	-	L2	FWCA(P)	2	
	<i>Lithobates clamitans</i>	Green Frog	-	-	L4	-	1	
3	<i>Pseudacris crucifer</i>	Spring Peeper	-	-	L2	-	2	Cattail Marsh along Tributary of Sheldon Creek
4	<i>Anaxyrus americanus</i>	American Toad	-	-	L4	-	1	Cattail Marsh along Tributary of Sheldon Creek
	<i>Hyla versicolor</i>	Gray Tree Frog	-	-	L2	FWCA(P)	1	
	<i>Pseudacris crucifer</i>	Spring Peeper	-	-	L2	-	2	
5	<i>Hyla versicolor</i>	Gray Tree Frog	-	-	L2	FWCA(P)	3	Swale/ Cattail Marsh
	<i>Pseudacris crucifer</i>	Spring Peeper	-	-	L2	-	3	
	<i>Pseudacris triseriata</i>	Western Chorus Frog	THR	-	L2	-	1	
6	<i>Hyla versicolor</i>	Gray Tree Frog	-	-	L2	-	1	SWM Pond
	<i>Pseudacris crucifer</i>	Spring Peeper	-	-	L2	-	1	
	<i>Pseudacris triseriata</i>	Western Chorus Frog	THR	-	L2	-	3	
7	<i>Pseudacris crucifer</i>	Spring Peeper	-	-	L2	-	3	Bronte Creek watercourse crossing
8	<i>Hyla versicolor</i>	Gray Tree Frog	-	-	L2	FWCA(P)	1	SWM Pond
	<i>Pseudacris crucifer</i>	Spring Peeper	-	-	L2	-	2	
9	<i>Pseudacris triseriata</i>	Western Chorus Frog	THR	-	L2	-	1	Cattail Marsh
	<i>Pseudacris crucifer</i>	Spring Peeper	-	-	L2	-	3	
10	<i>Pseudacris crucifer</i>	Spring Peeper	-	-	L2	-	1	Sixteen Mile Creek valley
10B	<i>Hyla versicolor</i>	Gray Tree Frog	-	-	L2	FWCA(P)	3	SWM Pond
	<i>Pseudacris crucifer</i>	Spring Peeper	-	-	L2	-	2	
11	<i>Hyla versicolor</i>	Gray Tree Frog	-	-	L2	FWCA(P)	2	Agricultural Pond
12	<i>Hyla versicolor</i>	Gray Tree Frog	-	-	L2	FWCA(P)	2	Agricultural Pond
	<i>Lithobates clamitans</i>	Green Frog	-	-	L4	-	1	
13	<i>Pseudacris crucifer</i>	Spring Peeper	-	-	L2	-	2	Deciduous forest – potential vernal pools
14*	-	-	-	-	-	-	-	SWM Pond
15	<i>Lithobates clamitans</i>	Green Frog	-	-	L4	-	1	SWM Pond
16*	-	-	-	-	-	-	-	SWM Pond along

**TABLE 4.**  
**AMPHIBIAN SURVEY OF STUDY AREA AND ADJACENT LANDS BY LGL LIMITED**

Station	Scientific Name	Common Name	SARA	ESA	Local	Legal Status	Call Level Code	Habitat Type
								Tributary of East Sixteen Mile Creek
17*	-	-	-	-	-	-	-	Small cattail marsh
18*	-	-	-	-	-	-	-	Small open aquatic area and cattail marsh along Tributary of East Sixteen Mile Creek
19*	-	-	-	-	-	-	-	SWM Pond

\* No anuran species/individuals identified  
 Call Level Codes – Abundance Count (according to Bird Studies Canada):  
 Call Level One (1) – Individual males can be counted accurately.  
 Call Level Two (2) - Frogs can be generally counted but calls overlap thus no exact number can be obtained.  
 Call Level Three (3) - Calls continuous and overlapping, no reasonable estimate of numbers.  
 For definitions of species ranks, refer to **Appendix E**

**2.3.3.3 Wildlife Species at Risk**

A review of secondary source data identified records for 19 wildlife species at risk located within the study area, and an additional seven wildlife species at risk with the potential to be found in the study area. These records are attributed to several data sources as described below. Several species at risk records compiled are considered historical (>20 years old) and/or were recorded near the study area, but records may not reflect the current condition of natural heritage features present within the lands examined. Of note, is that several species at risk were recorded from more than one secondary data source.

A review of the Natural Heritage Information Centre database (NHIC) (MNR 2017) returned records for eight species at risk. These include Eastern Meadowlark (*Sturnella magna*), Bobolink (*Dolichonyx oryzivorus*), Barn Swallow (*Hirundo rustica*), Henslow’s Sparrow (*Ammodramus henslowii*), Common Five-lined Skink (Southern Shield population) (*Plestiodon fasciatus* pop. 2), Milksnake (*Lampropeltis triangulum*), Jefferson X Blue-spotted Salamander (Jefferson genome dominates) (*Ambystoma hybrid* pop. 1) and Timber Rattlesnake (*Crotalus horridus*). Many of these records are considered dated (see **Table 5** and **Table 6**).

**TABLE 5.**  
**SUMMARY OF WILDLIFE SPECIES AT RISK ELEMENT OCCURRENCE RECORDS BASED ON THE NHIC DATABASE**

Scientific Name	Common Name	Date Last Observed
<i>Hirundo rustica</i>	Barn Swallow	2011
<i>Dolichonyx oryzivorus</i>	Bobolink	2005

**TABLE 5.**  
**SUMMARY OF WILDLIFE SPECIES AT RISK ELEMENT OCCURRENCE RECORDS BASED ON THE**  
**NHIC DATABASE**

Scientific Name	Common Name	Date Last Observed
<i>Plestiodon fasciatus pop. 2</i>	Common Five-lined Skink (Southern Shield population)	1992
<i>Sturnella magna</i>	Eastern Meadowlark	5/6/2009
<i>Lampropeltis triangulum</i>	Milksnake	8/19/1990
<i>Ammodramus henslowii</i>	Henslow's Sparrow	6/10/2000
<i>Ambystoma jeffersonianum</i>	Jefferson Salamander	1982-00-00
<i>Ambystoma hybrid pop. 1</i>	Jefferson X Blue-spotted Salamander, Jefferson genome dominates	6/14/1989
<i>Crotalus horridus</i>	Timber Rattlesnake	1950

Species at risk data was also received from the MNRF, Aurora District Office in a letter dated September 6, 2017 to include the list of species in **Table 5**. Two of the species listed have been documented in the study area (Bank Swallow and Jefferson Salamander). An additional ten species are identified to have the potential to occur (including Barn Swallow, Eastern Meadowlark, Bobolink, Canada Warbler (*Cardellina canadensis*), Chimney Swift (*Chaetura pelagica*), Snapping Turtle, Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, and Tri-coloured Bat) as shown in **Table 6**.

Breeding Bird Atlas data collected in the vicinity of the study area revealed records of several species at risk birds (Cadman *et al.* 2006). However, as the Breeding Bird Atlas data extends beyond the limits of the study area (i.e., 10 x 10 km data squares), it is not possible to determine which species were identified within the actual limits of the study area. Fourteen bird species at risk were recorded based on records from the Breeding Bird Atlas, several of which were also recorded in the data sources described above (see **Table 6** and **Appendix G**).

Field investigation conducted in 2018 and 2019 confirmed the presence of five species at risk including Western Chorus Frog, Eastern Wood Pewee, Barn Swallow, Bobolink and Eastern Meadowlark.

Species listed as Endangered or Threatened on the Species at Risk in Ontario (SARO) list are protected/regulated under the *Endangered Species Act, 2007 (ESA 2007)*. Specifically, Section 9(1) of the ESA prohibits a person from 'killing, harming, harassing, capturing or taking' a member of a species listed as Endangered, Threatened or Extirpated on the SARO list. Section 10(1) of the ESA prohibits the damage or destruction of habitat of a species listed as Endangered or Threatened on the SARO list.

Each of the 28 species identified above, their respective legal status, biological requirements and habitat suitability within the study area are discussed below and summarized in **Table 6**.

### **Western Chorus Frog**

Element occurrence data provided by Ontario Reptile and Amphibian Atlas (Ontario Nature 2017) contained two records (both dated 1995) of Western Chorus Frog in the vicinity of the study area. The Western Chorus Frog (Great Lakes/St. Lawrence Population) is regulated as 'Threatened' under the SARA, but the species is not designated under the ESA. The Western Chorus Frog is generally associated with marshes, meadows, swales and other open habitats (Harding 1997). The decline in Chorus Frog numbers is largely attributed to habitat destruction and fragmentation. As noted above, this species is not

regulated under the ESA, and lands within the study area are generally not federally owned, a criterion that would trigger a federal permit if the species was identified within the study area. Open habitats that have the potential to support Western Chorus Frog were identified across the project lands. Anuran call surveys conducted during 2019 surveys identified vocalizing male Western Chorus Frog at three stations (Stations #5, #6 and #9; **Figures 2a to 2f**). This species was identified breeding in small cattail marshes and a SWM pond.

### **Jefferson Salamander**

Review of the NHIC database contained three records (most recent 1989) of Jefferson Salamander and Jefferson X Blue-spotted Salamander, Jefferson genome dominates (hybrid population of Jefferson Salamander). MNRF confirmed that Jefferson Salamander has been recorded within the vicinity of the study area, although the record location is unknown. The Jefferson Salamander is regulated as 'Endangered' under the ESA and the SARA. The Jefferson X Blue-spotted Salamander, Jefferson genome dominates hybrid is also afforded protection under the ESA. The Jefferson Salamander (including hybrid populations) is generally associated with deciduous forest habitats. This species lives under leaf-litter and logs and is generally encountered when they move to vernal pools to breed in the early spring. Field investigations conducted in 2018 and 2019 identified one vernal pool located east of 407 ETR, south of Trafalgar Road. However, suitable general/dispersal habitat for Jefferson Salamander may include deciduous forest habitats that were identified at a number of sites across the study area.

### **Milksnake**

Review of the NHIC database contained 12 records of Milksnake (most recent 1990) which were located at sites across the study area. Milksnake was formerly listed as 'Special Concern' under the ESA and SARA; however, this species has recently been removed from the SARO list and is not a regulated species (Endangered or Threatened) under the ESA. Milksnake is found in a wide variety of habitats. This species is known to inhabit areas heavily disturbed by humans (e.g., farmland, urban parks and residential areas). Habitats that could be suitable to support Milksnake were found across much of the study area. Field investigations conducted in 2018 and 2019 did not identify this species.

### **Timber Rattlesnake**

Review of the NHIC database contained 15 records of Timber Rattlesnake (all dated 1950) which were located at sites across the study area. The Timber Rattlesnake is listed as 'Extirpated' under both the ESA and SARA. This species has been considered extirpated from Ontario for more than 50 years. Field investigations conducted in 2018 and 2019 did not identify this species.

### **Common Five-lined Skink (Southern Shield population)**

Review of the NHIC database contained two records (both dated 1992) of Common Five-lined Skink (Southern Shield population). The Common Five-lined Skink (Southern Shield population) is regulated as 'Special Concern' under the ESA and the SARA. The Carolinian population of this species ('Endangered' under SARA and SARO) is largely restricted to dunes, open woods or savannas with sandy substrates. No habitat considered suitable to support this species is expected within the study area. Field investigations conducted in 2018 and 2019 did not identify this species.

### **Snapping Turtle**

MNRF confirmed that Snapping Turtle have been recorded within the vicinity of study area, although the record location is unknown. The Snapping Turtle is listed as 'Special Concern' under the ESA and SARA; however, this species is not a regulated species ('Endangered' or 'Threatened') under either act. Snapping Turtle is generally associated with aquatic settings such as lakes, ponds, bays and inlets. This is a highly aquatic species; however Snapping Turtles may leave the water to seek out new aquatic habitats or to lay eggs. The potential exists for Snapping Turtles (from surrounding aquatic communities) to use

**TABLE 6.  
 WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area
<i>Pseudacris triseriata</i>	Western Chorus Frog	Ontario Reptile and Amphibian Atlas	-	THR	2019	Generally associated with marshes, meadows, swales and other open habitats.	Marshes, meadows, swales and potentially other open aquatic habitat types.
<i>Ambystoma hybrid pop. 1</i>	Jefferson X Blue-spotted Salamander, Jefferson genome dominates	NHIC	END	END	1992	The Jefferson salamander lives in deciduous forests and breeds in specialized aquatic habitats called vernal pools.	Deciduous forest habitat which contains vernal pool(s).
<i>Ambystoma jeffersonianum</i>	Jefferson Salamander	MNRF record, location unknown; NHIC.	END	END	1989	The Jefferson salamander lives in deciduous forests and breeds in specialized aquatic habitats called vernal pools.	Deciduous forest habitat which contains vernal pool(s).
<i>Lampropeltis triangulum</i>	Milksnake	NHIC	-	SC	1990	Habitat generalist, will occupy most natural areas and will live in anthropogenic areas which are bordered by natural area.	Has the potential to be found across the study area; in particular, valleyland and other natural areas.
<i>Crotalus horridus</i>	Timber Rattlesnake	NHIC	EXT	EXT	1950	This rattlesnake was found along the Niagara Escarpment, primarily in the Niagara area.	This species has been extirpated from the province for more than 50 years.



**TABLE 6.  
 WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area
<i>Plestiodon fasciatus pop. 2</i>	Common Five-lined Skink (Southern Shield population)	NHIC	SC	SC	1992	The Carolinian population of the species is mostly limited to dunes, open woods or savannas with sandy substrates and objects under which to take cover, such as logs and boards.	No suitable habitat identified through air-photo interpretation. No habitat considered suitable to support this species is expected within the study area. Field investigations conducted in 2018 and 2019 did not identify this species.
<i>Chelydra serpentina</i>	Snapping Turtle	MNRF identified species as potentially present in vicinity of study area.	SC	SC	Unknown	Found in a variety of aquatic habitats. Ponds, lakes and other slow moving waters with a soft bottom are preferred.	Aquatic habitats suitable to support this species are present within the study area. Potential exists for Snapping Turtles (from surrounding aquatic communities) to use road-shoulders present within the study area as nesting habitat. Similarly, Snapping Turtles from surrounding areas may use habitats within the study area during overland movements from one aquatic area to another.
<i>Chordeiles minor</i>	Common Nighthawk	Breeding Bird atlas data – precise location unknown.	SC	THR	Between 2001-2005	Nests in a wide range of open, vegetation-free habitats (i.e., logged forests, forest clearings, grasslands, open forests and rocky outcrops).	Open habitats suitable to support this species are present within the study area. Gravel rooftops, in particular, have the potential to provide nesting habitat for this species.

**TABLE 6.  
 WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area
<i>Chaetura pelagica</i>	Chimney Swift	MNRF identified species as potentially present in vicinity of study area.	THR	THR	2010	Urban/rural areas where the individuals have access to chimneys to use as nesting and resting sites. Open areas required for foraging.	Urbanized areas associated with the study area have the potential to function as suitable habitat for the species.
<i>Contopus virens</i>	Eastern Wood Pewee	Breeding Bird atlas data – precise location unknown	SC	SC	2019	Forest species, typically associated with forest openings, clearing or edges.	Forest and forest edges were identified as habitat for the species.
<i>Riparia riparia</i>	Bank Swallow	Breeding Bird atlas data – precise location unknown; MNRF record location unknown.	THR	-	2014	Bank Swallows live along rivers, streams, lake shorelines, or reservoirs. Nests are excavated along vertical surfaces such as eroded stream banks, sand/gravel piles and road cuts.	Watercourses and other open areas, including eroded river banks, associated with the study area have the potential to function as suitable habitat for the species.
<i>Hirundo rustica</i>	Barn Swallow	Breeding Bird atlas data – precise location unknown; MNRF identified species as potentially present in vicinity of study area.	THR	THR	2019	Open country and agricultural.	Open country and agricultural habitat types at the locations identified provide habitat suitable to support foraging Barn Swallow. A number of structures (e.g., barns, shed, outbuildings) which could provide nesting habitat for Barn Swallow were identified in the vicinity of the study area.

**TABLE 6.  
WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area
<i>Wilsonia canadensis</i>	Canada Warbler	MNR identified species as potentially present in vicinity of study area.	SC	THR	Unknown	This species breeds in a range of deciduous and coniferous, usually wet forest types, all with a well- developed, dense shrub layer.	Deciduous/coniferous forest communities.
<i>Vermivora chrysoptera</i>	Golden-winged Warbler	Breeding Bird atlas data – precise location unknown	SC	THR	Between 2001-2005	Nest in areas with young shrubs surrounded by mature forest – locations that have recently been disturbed, such as field edges and hydro or utility rights-of-way.	No suitable habitat for the species identified during field investigations.
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	Breeding Bird atlas data – precise location unknown	SC	SC	Between 2001-2005	Open grassland areas with well-drained, sandy soil. It will also nest in hayfields and pasture, as well as alvars, prairies and occasionally grain crops such as barley. It prefers areas that are sparsely vegetated.	Open country and agricultural habitat types at the locations identified may provide habitat suitable to support foraging this species; however, Grasshopper Sparrow is selective about vegetation composition, which may limit the suitability of open country habitats identified.
<i>Falco peregrinus</i>	Peregrine Falcon	Breeding Bird atlas data – precise location unknown	SC	SC	Between 2001-2005	Peregrine Falcons have adapted well to city life. Urban peregrines raise their young on ledges of tall buildings, even in busy downtown areas.	Tall buildings have the potential to support this species.

**TABLE 6.  
WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	Breeding Bird atlas data – precise location unknown	SC	THR	Between 2001-2005	The Red-headed Woodpecker lives in open woodland and woodland edges, and is often found in parks, golf courses and cemeteries. These areas typically have many dead trees, which are used for nesting and perching.	Woodlands and woodland edges.
<i>Ixobrychus exilis</i>	Least Bittern	Breeding Bird atlas data – precise location unknown	THR	THR	Between 2001-2005	In Ontario, the Least Bittern is found in a variety of wetland habitats, but strongly prefers cattail marshes with a mix of open pools and channels.	No suitable habitat for the species identified during field investigations.
<i>Parkesia motacilla</i>	Louisiana Waterthrush	Breeding Bird atlas data – precise location unknown	THR	THR	Between 2001-2005	The Louisiana Waterthrush is usually found in steep, forested ravines with fast-flowing streams. Although it prefers running water, especially clear, coldwater streams, it also less frequently inhabits heavily wooded, deciduous swamps having large pools of open water.	Forested ravine habitats with fast flowing watercourse(s).

**TABLE 6.  
 WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area
<i>Antrostomus vociferus</i>	Eastern Whip-poor-will	Breeding Bird atlas data – precise location unknown	THR	THR	Between 2001-2005	The Eastern Whip-poor-will is usually found in areas with a mix of open and forested areas, such as savannahs, open woodlands or openings in more mature, deciduous, coniferous and mixed forests.	Open woodland areas or openings in more mature, deciduous, coniferous and mixed forests.
<i>Ammodramus henslowii</i>	Henslow's Sparrow	NHIC records at various locations across the study area.	END	END	2000	This species lives in open fields with tall grasses, flowering plants, and a few scattered shrubs.	Open-country habitat; however, this species is now considered a rare breeder in Ontario.
<i>Hylocichla mustelina</i>	Wood Thrush	TRCA records at a number of locations; MNRF record location unknown.	SC	THR	2011	Deciduous and mixed forests with large trees, shade, and leaf litter for foraging.	Deciduous and mixed forest communities within the study area have the potential to function as suitable habitat for the species.
<i>Dolichonyx oryzivorus</i>	Bobolink	Breeding Bird atlas data – precise location unknown; MNRF identified species as potentially present in vicinity of study area.	THR	THR	2019	Open country/grasslands and agricultural.	Open country, meadow and agricultural habitat types at the locations identified provide habitat suitable to support Bobolink.

**TABLE 6.  
 WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area
<i>Sturnella magna</i>	Eastern Meadowlark	Breeding Bird atlas data – precise location unknown; MNRF identified species as potentially present in vicinity of study area; and NHIC records across portions of the study area.	THR	THR	2019	Open country and agricultural.	Open country, meadow and agricultural habitat types at the locations identified provide habitat suitable to support Eastern Meadowlark.
<i>Myotis lucifugus</i>	Little Brown Myotis	MNRF identified species as potentially present in vicinity of study area.	END	END	Unknown	Trees and buildings. Often select attics, abandoned buildings and barns for summer colonies where they raise their offspring.	Deciduous and mixed forest communities within the study area have the potential to function as suitable habitat for the species. Buildings may also provide habitat for this species.
<i>Myotis leibii</i>	Eastern Small-footed Myotis	MNRF identified species as potentially present in vicinity of study area.	END		Unknown	In the spring and summer, Eastern Small-footed Bats will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees.	Deciduous and mixed forest communities within the study area have the potential to function as suitable habitat for the species.

**TABLE 6.  
 WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat*	Potential Habitat in Study Area
<i>Perimyotis subflavus</i>	Tri-coloured Bat	MNRF identified species as potentially present in vicinity of study area.	END		Unknown	During the summer, the Tri-coloured Bat is found in a variety of forested habitats. It forms day roosts and maternity colonies in older forest and occasionally in barns or other structures	Deciduous and mixed forest communities within the study area have the potential to function as suitable habitat for the species.
<i>Myotis septentrionalis</i>	Northern Myotis	MNRF identified species as potentially present in vicinity of study area.	END	END	Unknown	Forests, roost under loose bark and in the cavities of trees.	Deciduous and mixed forest communities within the study area have the potential to function as suitable habitat for the species.

road shoulders present within the study area as nesting habitat and Snapping Turtles from surrounding areas may use habitats within the study area during overland movements from one aquatic area to another. Suitable habitat for Snapping Turtle may include storm water management facilities, ponds, watercourses and other aquatic habitats found across the study area. Field investigations conducted in 2018 and 2019 did not identify this species.

### **Common Nighthawk**

Records for this species were present in Breeding Bird Atlas data (dated from 2001-2005). Common Nighthawk is listed as 'Special Concern' under the ESA and 'Threatened' under the SARA; however, this species is not a regulated species ('Endangered' or 'Threatened') under the ESA. Common Nighthawk nest in rural and urban habitats such as logged forests, forest clearings, grasslands, open forests, and rocky outcrops. They may also nest on flat gravel rooftops. Open habitats that have the potential to support Common Nighthawk were identified across the project lands. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Chimney Swift**

MNRF confirmed that Chimney Swift has the potential to be found within the vicinity of the study area. Chimney Swift is regulated as 'Threatened' under the ESA and SARA. The Chimney Swift nests in urban and rural areas, largely in chimneys but also in hollowed trees or caves, and forages mainly over open areas (over forests, ponds, and residential areas). Habitats which have the potential to support Chimney Swift were found where deciduous habitat communities were identified within the project lands. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Eastern Wood Pewee**

Records for Eastern Wood Pewee were present in Breeding Bird Atlas data (dated from 2001-2005). Eastern Wood Pewee is listed as 'Special Concern' under the ESA and SARA; however, this species is not a regulated species ('Endangered' or 'Threatened') under the ESA. This species is found in deciduous and mixed forests and in forest openings/clearings/edges. Habitats which have the potential to support Eastern Wood Pewee were found where deciduous/mixed forest habitat communities and forest edges were identified within the project lands. This species was identified at several breeding bird stations (9-2019, 5-2019, 8-2019, 10-2019, 17-2019, 19-2019, 21-2019, 36-2019) during surveys conducted in 2019 (see **Figures 2a-2f**). Generally, observations of this species were associated with woodland edges.

### **Bank Swallow**

Breeding Bird Atlas data for areas within the vicinity of the study area contained records (dated from 2001-2005) for Bank Swallow. MNRF noted that Bank Swallow has been previously recorded in the vicinity of the study area, although the record location is unknown. Bank Swallow is regulated as 'Threatened' under the ESA. The Bank Swallow is listed as 'Special Concern' by COSEWIC, but has no status under the SARA. This species generally nests along rivers, streams, lake shorelines or reservoirs. Nests are excavated along vertical surfaces such as eroded stream banks, sand/gravel piles and road cuts. Nesting habitat for this species has the potential to be found in the study area, including along eroded riverbanks and potentially other vertical surfaces. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Barn Swallow**

Breeding Bird Atlas data for areas within the vicinity of the study area also contained records (dated from 2001-2005) for Barn Swallow. MNRF confirmed that Barn Swallow has the potential to be found in the vicinity of study area. Barn Swallow is regulated as 'Threatened' under the ESA and the SARA. The Barn Swallow generally builds mud nests on bridges, walls, ledges and barns (Cadman *et al.* 2007). The Barn Swallow typically forages in open areas such as agricultural lands, meadows or over water. Habitat considered suitable to support foraging Barn Swallow was identified across much of the study area, with



the exception of forested habitats. Nesting habitat for this species has the potential to be found in the study area, including bridges, buildings and other man-made structures. This species was identified at a number of breeding bird stations during surveys conducted in 2018 and 2019. However, most observations of this species were limited to foraging individuals, often over SWM ponds, agricultural fields or meadows. Confirmed breeding colonies were identified at several locations across the lands surveyed (see **Appendix H**). However, each breeding colony identified was located outside of the transitway alignment and station alternatives. Breeding colonies identified were typically associated with barns or other outbuildings within agricultural settings. This species was documented during field investigations at stations 5-2018, 6-2018, 7-2018, 10-2018, 11-2018, 13-2018, 16-2018, 17-2018, 18-2018, 19-2018, 1-2019, 2-2019, 8-2019, 14-2019, 15-2019, 23-2019, 25-2019, 30-2019, 30-2019, 31-2019, 33-2019, 34-2019, 35-2019, 40-2019 (**Figures 2a-2f** and **Appendix H**)

### **Canada Warbler**

MNR confirmed that Canada Warbler has the potential to be found within the vicinity of study area. The Canada Warbler is listed as ‘Special Concern’ under the ESA; however, this species is not a regulated species (‘Endangered’ or ‘Threatened’) under the ESA. The Canada Warbler is listed as ‘Threatened’ by COSEWIC and SARA. The Canada Warbler breeds in a variety of deciduous and coniferous wooded habitats, particularly those that contain a dense understory of shrubs or other vegetation. Habitat considered suitable to support Canada Warbler was identified (through air-photo analysis) where wooded areas exist; however, ground-truthing is required to confirm the suitability of potential habitat areas. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Golden-winged Warbler**

Breeding Bird Atlas data for areas within the vicinity of the study area contained records (dated from 2001-2005) for Golden-winged Warbler. The Golden-winged Warbler is listed as ‘Special Concern’ under the ESA; however, this species is not a regulated species (‘Endangered’ or ‘Threatened’) under the ESA. The Golden-winged Warbler is regulated as ‘Threatened’ under the SARA. The Golden-winged Warbler nests in areas with young shrub growth surrounded by mature forest communities, locations that have experienced disturbance, such as field edges, hydro or utility corridors. Habitat that may be considered suitable to support Golden-winged Warbler was identified (through air-photo analysis) where open-county habitat borders forest communities; however, ground-truthing is required to confirm the suitability of potential habitat areas. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Grasshopper Sparrow**

Breeding Bird Atlas data for areas within the vicinity of the study area contained records (dated from 2001-2005) for Grasshopper Sparrow. The Grasshopper Sparrow is listed as ‘Special Concern’ under the ESA; however, this species is not a regulated species (‘Endangered’ or ‘Threatened’) under the ESA. The Grasshopper Sparrow is listed as ‘Special Concern’ by the SARA. The Grasshopper Sparrow nests in open grassland, hayfields and pastureland. Habitat that may be considered suitable to support Grasshopper Sparrow was identified (through air-photo analysis) where open-county habitat exists; however, ground-truthing is required to confirm the suitability of potential habitat areas. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Peregrine Falcon**

Breeding Bird Atlas data for areas within the vicinity of the study area contained records (dated from 2001-2005) for Peregrine Falcon. The Peregrine is listed as ‘Special Concern’ under the ESA and SARA; however, this species is not a regulated species under either act. Historically, the Peregrine Falcon nested almost exclusively on rocky ledges near waterbodies; however, this species now nests on tall building ledges in large cities. Habitat that may be considered suitable to support Peregrine Falcon was identified (through air-photo analysis) where tall building ledges are found; however, ground-truthing is required to confirm the suitability of potential habitat areas. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Red-headed Woodpecker**

Red-headed Woodpecker is listed as ‘Special Concern’ under the SARO List; however, this species is not a regulated species (‘Endangered’ or ‘Threatened’) under the ESA. This species is regulated as Threatened under the SARA. The Red-headed Woodpecker lives in open woodland and woodland edges, and is often found in parks, golf courses and cemeteries. These areas typically have many dead trees, which the bird uses for nesting and perching. Habitats which could be suitable to support the Red-headed Woodpecker were generally absent from the study area; however, ground-truthing is required to confirm the suitability of potential habitat areas. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Least Bittern**

Breeding Bird Atlas data for areas within the vicinity of the study area contained records (dated from 2001-2005) for Least Bittern. The Least Bittern is regulated as ‘Threatened’ under the ESA and SARA. Least Bittern are typically found in wetland communities, particularly large contiguous tracts of coastal wetland habitat. No habitat considered suitable to support this species was identified within the study area. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Louisiana Waterthrush**

Breeding Bird Atlas data for areas within the vicinity of the study area contained records (dated from 2001-2005) for Louisiana Waterthrush. The Louisiana Waterthrush is regulated as ‘Threatened’ under the ESA and SARA. This species is typically associated with steep, forested ravines with fast-flowing streams. Habitat suitable to support this species may be found where watercourse valleylands are present within the study area. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Eastern Whip-poor-will**

Breeding Bird Atlas data for areas within the vicinity of the study area contained records (dated from 2001-2005) for Eastern Whip-poor-will. The Eastern Whip-poor-will is regulated as ‘Threatened’ under the ESA and SARA. This species is typically associated with a mix of open and forested areas, such as savannahs, open woodlands or openings in deciduous, coniferous and mixed forests. Habitat suitable to support this species may be found where forested communities are present within the study area. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Henslow’s Sparrow**

Review of the NHIC database contained four records of Henslow’s Sparrow (dated 1932 and 2000) which were located at a number of sites within the vicinity of the study area. The Henslow’s Sparrow is regulated as ‘Endangered’ under the ESA and the SARA. MNRF data included record(s) for this species within the vicinity (5 km) of the study area. Henslow’s Sparrow is typically found in large and undisturbed grassland communities. No habitat considered suitable to support this species was identified within the study area. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Wood Thrush**

Breeding Bird Atlas data for areas within the vicinity of the study area also contained records (dated between 2001-2005) for Wood Thrush. Wood Thrush is listed as ‘Special Concern’ under the ESA; however, this species is not a regulated species (‘Endangered’ or ‘Threatened’) under the ESA. The Wood Thrush is listed as ‘Threatened’ under the SARA. The Wood Thrush is found in mature deciduous and mixed forests with large trees, shade and leaf litter for foraging. Habitats which have the potential to support Wood Thrush were found where mature deciduous and mixed forest habitat communities were identified within the project lands. Breeding bird surveys conducted in 2018 and 2019 did not identify this species.

### **Bobolink**

Review of the NHIC database contained three records (most recent 2005) of Bobolink. Breeding Bird Atlas data for areas in the vicinity of the study area also contained records (dated between 2001-2005) for Bobolink. MNRFC confirmed that Bobolink has the potential to be found in the vicinity of study area. The Bobolink, a species with a broad distribution across southern Ontario, is regulated ‘Threatened’ under the ESA and under the SARA. Bobolinks are typically described as residents of grassland communities with an abundance of grass species that are typical of old fields (Cadman *et al.* 2007). Bobolinks are also commonly associated with agricultural lands. Open-country, meadow and agricultural habitat types found across the study area have the potential to provide habitat suitable to support this species. This species was documented during field investigations at stations 5-2018 and 34-2019 (Appendix C).

### **Eastern Meadowlark**

Review of the NHIC database contained five records (most recent 2009) of Eastern Meadowlark. Breeding Bird Atlas data for areas in the vicinity of the study area also contained records (dated between 2001-2005) for Eastern Meadowlark. MNRFC confirmed that Eastern Meadowlark has the potential to be found in the vicinity of study area. The Eastern Meadowlark, a species with a broad distribution across southern Ontario, is regulated ‘Threatened’ under the ESA and the SARA. The Eastern Meadowlark, formerly a prairie species, has adapted to agricultural practices of the European settlers (hayfields, pastures, etc.) (Cadman *et al.* 2007). As farming practices have become more efficient, Eastern Meadowlark numbers have declined. Open-country, meadow and agricultural habitat types found across the study area have the potential to provide habitat suitable to support this species. This species was documented during field investigations at stations 5-2018, 7-2019, and 33-2019 (Appendix C).

### **Bats**

There are currently four bat species regulated as ‘Endangered’ under the ESA, including Eastern Small-footed Myotis; Little Brown Myotis; Northern Myotis; and, Tri-coloured Bat. The ESA affords protection for both individuals of these species (subsection 9(1)) and their habitat (subsection 10(1)). Given that species-specific habitat regulations have not yet been developed for SAR bats, habitat is protected according to the general definition provided in the ESA. Specifically, according to section 2(1), the Act protects “an area, on which the species depends, directly or indirectly, to carry on its life processes, including processes such as reproduction, rearing, hibernation, migration or feeding”.

The distribution of the four bat species overlaps the study area (BCI 2019). The habitat that is important for the survival and recovery of the species are the swarming and hibernation sites, and maternity roosting locations (ECCC 2018, Humphrey 2019, Humphrey 2017). The potential for these habitats was assessed following A Framework for Assessment and Monitoring of Bat Habitat (Morningstar 2018).

Swarming and hibernation sites are underground features such as caves, mines or underground tunnels. The Karst of Ontario (Brunton 2008) describes known karst areas where there is potential for caves, crevices and other degraded limestone which could provide hibernation habitat for bats. Based on this resource, there is no known karst within the study area. A Tri-coloured Bat was known to hibernate in the

underground tunnel of the Roseland Creek, approximately 2.5 km south of the study area, and bats are known to hibernate at the caves of Mount Nemo Conservation Area, approximately 3 km west of the study area. Bats will also commonly use inactive tunnel mines, caves and constructed tunnels. The Abandoned Mines Information Database (AMIS) provides known locations of historic mining features, none of which have been identified within the study area. Underground tunnels are not mapped on a publicly available database. These occur frequently in urban areas where there is underground infrastructure (i.e. sewers, storm water management, etc) and can occur within the study area. To be suitable for bat hibernation, the underground feature must have undisturbed dark zones and stable winter climate with temperatures that remain above freezing. Five potential underground tunnels were identified from review of the aerial imagery available for the proposed runningway and stations. Site investigation was completed of the external conditions of these tunnels on August 8, 2019 to determine if they are suitable as potential bat hibernacula (**Table 7**).

**TABLE 7.  
 LOCATION AND DESCRIPTION OF UNDERGROUND TUNNEL ENTRANCES POTENTIALLY SUITABLE AS BAT  
 HIBERNACULA**

<b>Point</b>	<b>Location (NAD83 UTM)</b>	<b>Location Description</b>	<b>Entrance Description</b>	<b>Suitability as a Bat Hibernaculum</b>
1	17T594688E, 4799824N	407 ETR exit ramp to Highway 403	Not accessible in the field, appears to be vertical shaft	Assume potentially suitable
2	17T594610E, 4801044N	Cavendish Park under 407 ETR	3 m diameter round pipe, depth and length unknown. Covered in metal bar grate permeable to bats but restricts human entry	High probability hibernaculum
3	17T594504E, 4802971N	407 ETR at Guelph Line, North side	Appears to be 1.5 m round pipe, closed in with dense vegetation. Fenced to prevent human access	Possible hibernaculum
4	17T599402E, 4830353N	407 ETR at Hereford Street and Mississauga Road, south outfall into reservoir	Small PVC pipe, partly filled with mud	Not suitable as hibernaculum
5	17T599393E, 4830418N	407 ETR at Hereford Street and Mississauga Road, north outfall into reservoir	1.5 m high by 3 m wide concrete box culvert. Depth and length unknown. Covered in steel bars, permeable to bats but restricts human entry.	High probability hibernaculum

Maternity roosting habitat has been grouped into three types: treed habitat, buildings, and rock piles. The potential for trees to provide bat maternity roosting habitat changes over time, with more mature trees and treed habitats likely providing better quality habitat. Little Brown Myotis and Northern Myotis will use cavities in the trees or exfoliating bark, while Tri-coloured Bat roosts in clumps of leaves in the foliage. Within the study area, many treed habitats occur, and all of these are considered potentially suitable as bat roosting habitat. Buildings are also used for roosting, most frequently by Little Brown Myotis. Bats could use any building, regardless of building age, structure type or whether it is currently occupied by people. Therefore, all buildings are considered potentially suitable habitat. Eastern Small-footed Myotis is a saxicolous (rock-loving) species and will frequently roost in rock piles, talus, or crack and crevices in rock outcrops.

## **3.0 IMPACT ASSESSMENT AND MITIGATION**

Option 1 is the preferred runningway alignment option across all 11 Segments of the proposed transitway. Within Segments 6, 9 and 11, the preferred alignment will be constructed underground (tunnel) across most of these segments. This will result in limited impacts to vegetation, vegetation communities, wildlife and wildlife habitats within these areas. If the construction of the underground portions of the preferred alignment changes to include cut and cover construction, impacts to vegetation, vegetation communities, and wildlife habitats will need to be recalculated during detail design. However, such impacts are expected to be temporary until the completion of construction and with the restoration of disturbed lands.

### **3.1 *Physiography and Soils***

Generally, the soils within the study area have imperfect or poor drainage (with the exception of Oneida loam soils, which are moderately well-drained). The clay and loam soils located along the runningway and at station locations are susceptible to erosion and will be impacted during construction of the mainline and station facilities. Consequently, soil disturbance associated with drainage improvements, earth moving, culvert modifications, etc., may result in erosion of, and sedimentation to, sensitive receiving watercourses. For this reason, standard erosion and sedimentation control measures will be followed during construction in accordance with Ontario Provincial Standard Specification (OPSS) 805 (Construction Specification for Temporary Erosion and Sediment Control Measures) to minimize construction-related impacts on vegetation and vegetated communities. Site-specific erosion and sedimentation control measures to be implemented prior to construction will be identified prior to construction following the Environmental Guide for Erosion and Sediment Control during Construction of Highway Projects (MTO 2007). Erosion and sedimentation control measures will include:

- placing flow checks at regular intervals in ditches down-gradient from areas of soil disturbance in rural sections;
- stabilizing/reinforcing ditches based on ditch slope down-gradient from areas of soil disturbance in rural sections;
- managing surface water at the construction site to prevent contact with exposed soils and/or treat surface water that comes in contact with exposed soils using stormwater detention ponds, basins, traps and bags;
- protecting inlets to catch basins and maintenance holes in urban sections;
- placing silt fence along stream margins in areas of soil disturbance;
- limiting the extent and duration that soils are exposed to the elements to the minimum area and time necessary to perform the work;
- applying seed and mulch, tackifier and/or erosion control blanket in areas of soil disturbance to provide adequate slope protection and long-term slope stabilization; and,
- monitoring and maintenance of erosion and sedimentation control measures during construction to ensure their effectiveness.

These environmental protection measures will greatly reduce the potential for soil erosion and impairment of vegetation and vegetated communities.

### **3.2 *Vegetation and Vegetation Communities***

Implementation of the 407 Transitway from west of Brant Street to west of Hurontario Street has the potential to result in impacts to vegetation and vegetation communities. Effects on vegetation related to

the construction of the 407 Transitway from west of Brant Street to west of Hurontario Street and associated facilities could include:

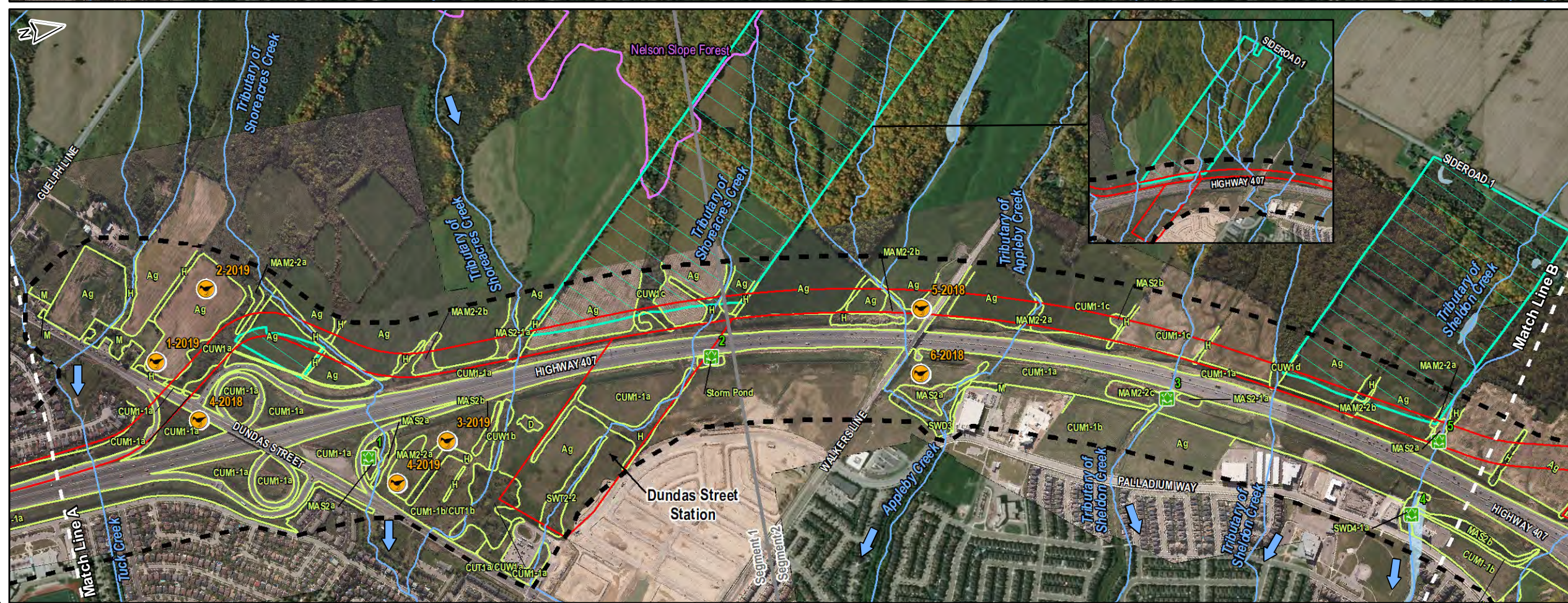
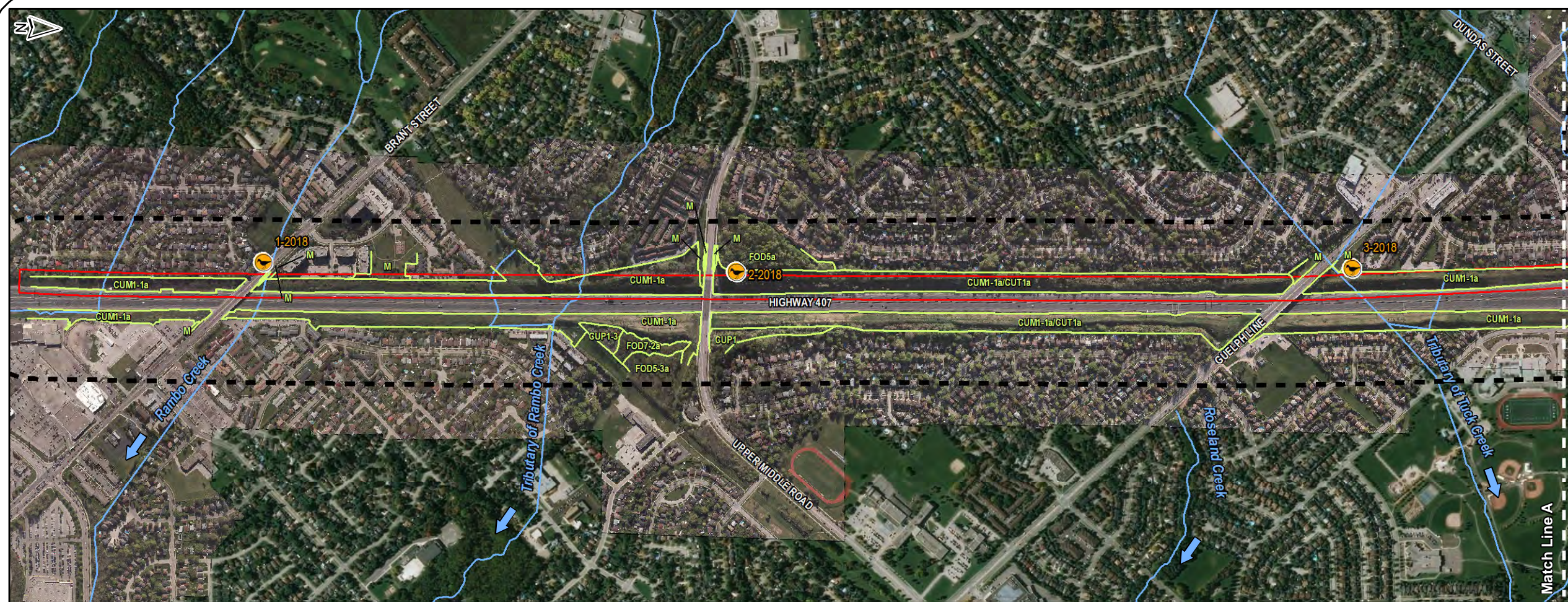
- displacement of and/or disturbance to vegetation and vegetation communities; and,
- displacement of and/or disturbance to rare, threatened or endangered vegetation and vegetation communities.

### **Displacement of and/or Disturbance to Vegetation and Vegetation Communities**

The loss of vegetation and vegetation communities has been broken down into two categories, the runningway for the 407 Transitway, and the associated stations and the bus storage yard.

Overall, there will be a loss of 255.47 ha of vegetation communities, which includes a loss of 212.86 ha due to the runningway and a loss of 42.61 ha due to the stations and the bus storage yard. Collectively, this will result in impacts to both terrestrial and wetland habitats.

The following is a detailed discussion of impacts to vegetation and vegetation communities discussed for the preferred runningway and stations and the bus storage yard. The existing conditions and the preferred runningway alignment and transitway stations and bus storage yard are presented in **Figures 3a to 3f**, which includes ELC vegetation communities identified, designated natural areas and wildlife survey locations, which are described and discussed above in **Sections 2.2 and 2.3**.



**LEGEND**

- Study Area
- Impact Assessment Corridor
- Tunnel Section
- Breeding Bird Point Count Station
- Anuran Monitoring Station
- Watercourse
- ANSI Earth Science
- ANSI Life Science
- Wetland Evaluated - Other
- Wetland Evaluated - Provincial
- Wetland not evaluated per OWES
- Environmentally Significant Area (CVC)
- Protected Site
- Vegetation Communities
- Vegetation Community Boundary

**Vegetation Communities**

- Ag** Agricultural
- BL01** Mineral Open Bluff Ecosite
- CUM1-1 (p-1)** Dry-Moist Old Field Meadow
- CUP1** Deciduous Plantation
- CUP1-1** Black Walnut Deciduous Plantation Type
- CUT1 (p-1)** Mineral Cultural Thicket
- CUT1-1** Sumac Shrub Thicket Type
- CUT1-4 (p-1)** Gray Dogwood Shrub Thicket Type
- CUT1 (p-1)** Mineral Cultural Woodland Ecosite
- D** Disturbed
- F002-2** Dry-Fresh White Cedar Coniferous Forest Type
- F002-2a** Dry-Fresh Oak-Hickory Deciduous Forest Type
- F002-4 (p-1)** Dry-Fresh Oak-Hickory Deciduous Forest Type
- F005 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Ecosite
- F005-1 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Type
- F005-2** Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
- F005-4 (p-1)** Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- F005-5** Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
- F004-2** Fresh-Moist Sugar Maple-Black Maple Deciduous Forest Type
- F004-4** Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
- F007-2 (p-1)** Fresh-Moist Ash Lowland Deciduous Forest Type
- F007-4 (p-1)** Fresh-Moist Willow Lowland Deciduous Forest Type
- H** Hedgerow
- M** Manicured
- MAM2 (p-1)** Mineral Meadow Marsh Ecosite
- MAM2-2 (p-1)** Reed-canary Grass Mineral Meadow Marsh Type
- MAM2-10** Mixed Forb Mineral Meadow Marsh Type
- MAS2 (p-1)** Mineral Shallow Marsh Ecosite
- MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type
- MAS2-3** Forb Mineral Shallow Marsh Type
- MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- MA2-1 (p-1)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- QAO** Open Aquatic
- SWD2-2 (p-1)** Green Ash Mineral Deciduous Swamp Type
- SWD6** Maple Mineral Deciduous Swamp Ecosite
- SWD4-4 (p-1)** Willow Mineral Deciduous Swamp Type
- SWD2-2** Willow Mineral Thicket Swamp Type

Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.

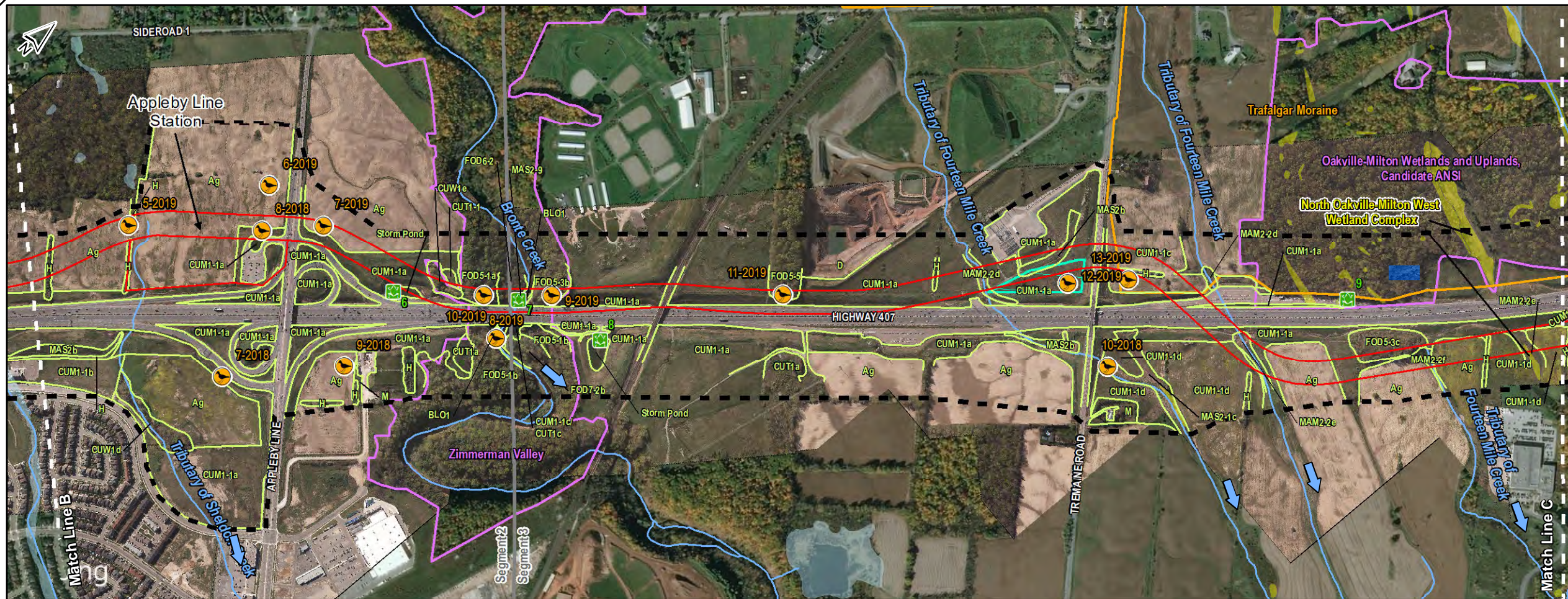
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**407 TRANSITWAY WEST -  
NATURAL HERITAGE/  
IMPACT ASSESSMENT**



<b>Project:</b> TA8733	<b>Figure:</b> 3a
<b>Date:</b> February, 2020	<b>Prepared By:</b> JJP
<b>Scale:</b> 1 : 12,000	<b>Checked By:</b> SK





**LEGEND**

- Study Area
- Impact Assessment Corridor
- Tunnel Section
- Breeding Bird Point Count Station
- Anuran Monitoring Station
- Watercourse
- ANSI, Earth Science
- ANSI, Life Science
- Wetland Evaluated - Other
- Wetland Evaluated - Provincial
- Wetland not evaluated per OWES
- Environmentally Significant Area (CVC)
- Protected Site
- Vegetation Communities**
- Vegetation Community Boundary

- Ag** Agricultural
- BL01** Mineral Open Bluff Ecosite
- CUM1-1 (p-1)** Dry-Moist Old Field Meadow
- CUM1** Deciduous Plantation
- CUM1-1a** Black Walnut Deciduous Plantation Type
- CUM1-1b** Mineral Cultural Thicket
- CUM1-1c** Sumac Shrub Thicket Type
- CUM1-1d** Gray Dogwood Shrub Thicket Type
- CUM1-1e** Mineral Cultural Woodland Ecosite
- D** Disturbed
- FOD2** Dry-Fresh White Cedar Coniferous Forest Type
- FOD2-1a** Dry-Fresh Oak-Hickory Deciduous Forest Type
- FOD2-1a (p-1)** Dry-Fresh Oak-Hardwood Deciduous Forest Type
- FOD5 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Ecosite
- FOD5-1 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Type
- FOD5-2** Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
- FOD5-1 (p-1)** Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- FOD5-3** Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
- FOD4-2** Fresh-Moist Sugar Maple-Black Maple Deciduous Forest Type
- FOD4-1** Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
- FOD7-2 (p-1)** Fresh-Moist Ash Lowland Deciduous Forest Type
- FOD7-4 (p-1)** Fresh-Moist Willow Lowland Deciduous Forest Type
- H** Hedgerow
- M** Manicured
- MAM2 (p-1)** Mineral Meadow Marsh Ecosite
- MAM2-2 (p-1)** Reed-canary Grass Mineral Meadow Marsh Type
- MAM2-10** Mixed Forb Mineral Meadow Marsh Type
- MAS2 (p-1)** Mineral Shallow Marsh Ecosite
- MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type
- MAS2-3** Forb Mineral Shallow Marsh Type
- MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- QAO** Open Aquatic
- SWD2-2 (p-1)** Green Ash Mineral Deciduous Swamp Type
- SWD6** Maple Mineral Deciduous Swamp Ecosite
- SWD4-1 (p-1)** Willow Mineral Deciduous Swamp Type
- SWD2-2** Willow Mineral Thicket Swamp Type

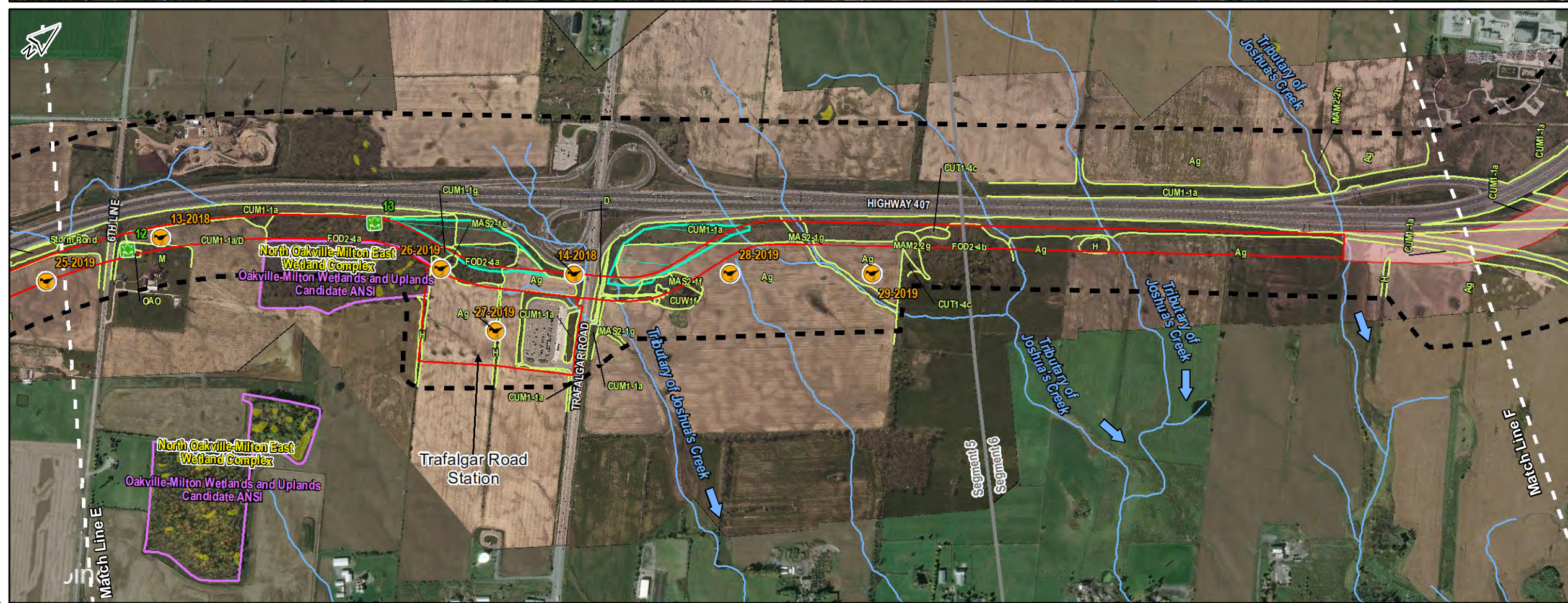
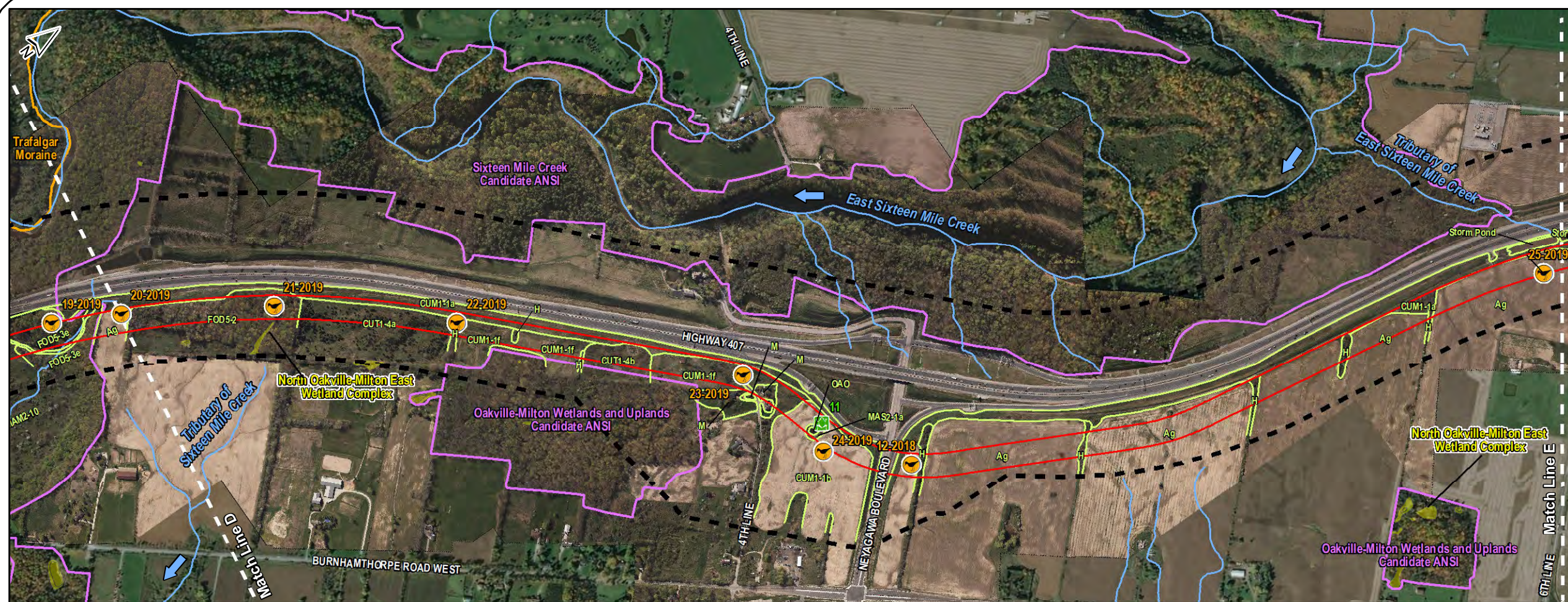
Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.

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**407 TRANSITWAY WEST -  
NATURAL HERITAGE/  
IMPACT ASSESSMENT**



<b>Project:</b> TA8733	<b>Figure:</b> 3b
<b>Date:</b> February, 2020	<b>Prepared By:</b> JJP
<b>Scale:</b> 1 : 12,000	<b>Checked By:</b> SK



**LEGEND**

- Study Area
- Impact Assessment Corridor
- Tunnel Section
- Breeding Bird Point Count Station
- Anuran Monitoring Station
- Watercourse
- ANSI, Earth Science
- ANSI, Life Science
- Wetland Evaluated - Other
- Wetland Evaluated - Provincial
- Wetland not evaluated per OWES
- Environmentally Significant Area (CVC)
- Protected Site
- Vegetation Communities**
- Vegetation Community Boundary
- Ag** Agricultural
- BL01** Mineral Open Bluff Ecosite
- CUM1-1 (p-1)** Dry-Moist Old Field Meadow
- CUP1** Deciduous Plantation
- CUP1-1** Black Walnut Deciduous Plantation Type
- CUT1 (p-1)** Mineral Cultural Thicket
- CUT1-1** Sumac Shrub Thicket Type
- CUT1-4 (p-1)** Gray Dogwood Shrub Thicket Type
- CUT1 (p-1)** Mineral Cultural Woodland Ecosite
- D** Disturbed
- FOD2** Dry-Fresh White Cedar Coniferous Forest Type
- FOD2-1a** Dry-Fresh Oak-Hickory Deciduous Forest Type
- FOD2-4 (p-1)** Dry-Fresh Oak-Hardwood Deciduous Forest Type
- FOD5 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Ecosite
- FOD5-1 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Type
- FOD5-2** Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
- FOD5-3 (p-1)** Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- FOD5-5** Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
- FOD4-2** Fresh-Moist Sugar Maple-Black Maple Deciduous Forest Type
- FOD4-4** Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
- FOD7-2 (p-1)** Fresh-Moist Ash Lowland Deciduous Forest Type
- FOD7-4 (p-1)** Fresh-Moist Willow Lowland Deciduous Forest Type
- H** Hedgerow
- M** Manicured
- MAM2 (p-1)** Mineral Meadow Marsh Ecosite
- MAM2-1 (p-1)** Reed-cornary Grass Mineral Meadow Marsh Type
- MAM2-10** Mixed Forb Mineral Meadow Marsh Type
- MAS2 (p-1)** Mineral Shallow Marsh Ecosite
- MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type
- MAS2-3** Forb Mineral Shallow Marsh Type
- MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- OAO** Open Aquatic
- SWD2-2 (p-1)** Green Ash Mineral Deciduous Swamp Type
- SWD6** Maple Mineral Deciduous Swamp Ecosite
- SWD4-4 (p-1)** Willow Mineral Deciduous Swamp Type
- SWD2-2** Willow Mineral Thicket Swamp Type

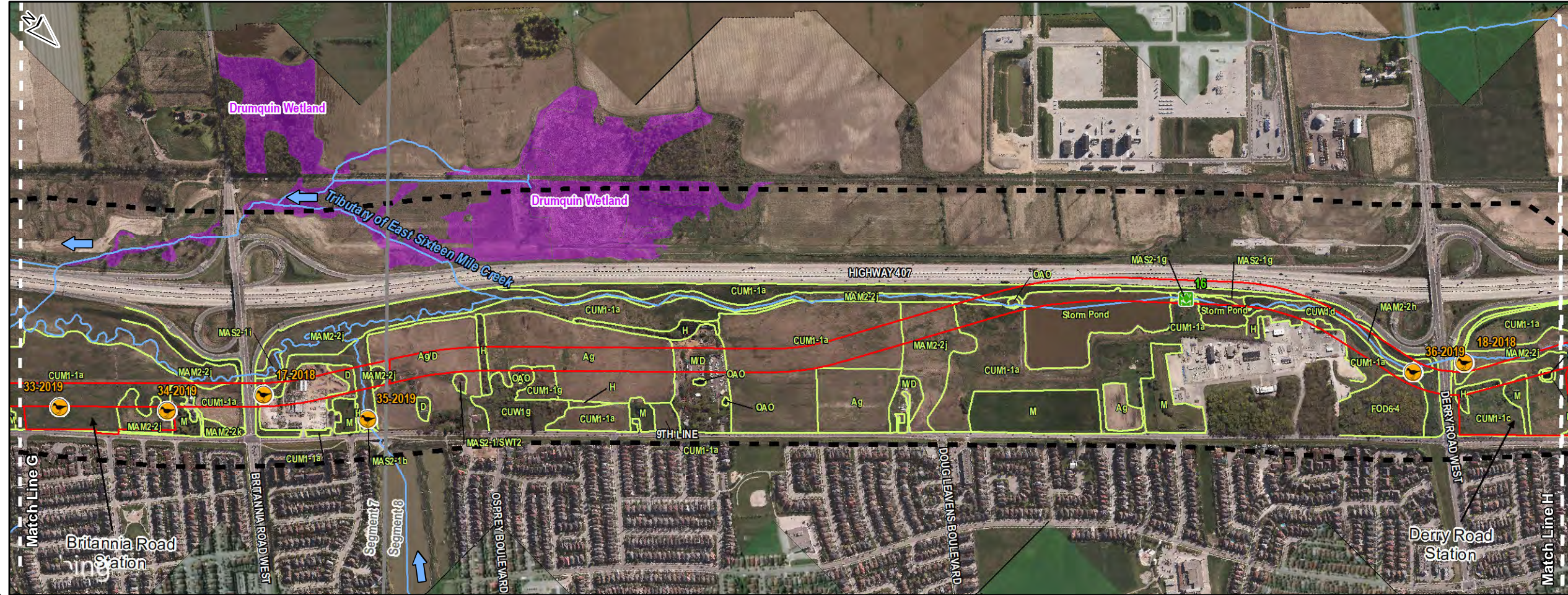
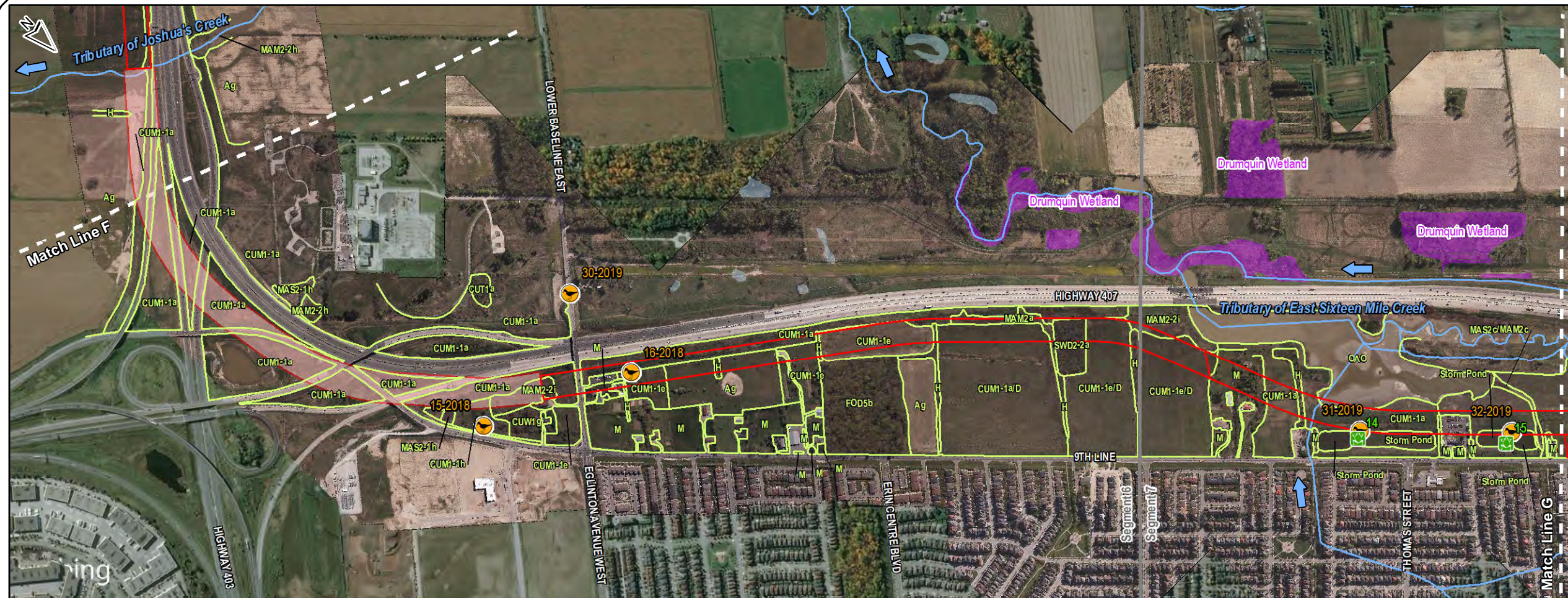
Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.

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Meters

**407 TRANSITWAY WEST -  
NATURAL HERITAGE/  
IMPACT ASSESSMENT**



Project: TA8733	Figure: 3c
Date: February, 2020	Prepared By: JJP
Scale: 1 : 12,000	Checked By: SK



### LEGEND

- Study Area
- Impact Assessment Corridor
- Tunnel Section
- Breeding Bird Point Count Station
- Anuran Monitoring Station
- Watercourse
- ANSI Earth Science
- ANSI Life Science
- Wetland Evaluated - Other
- Wetland Evaluated - Provincial
- Wetland not evaluated per OWES
- Environmentally Significant Area (CVC)
- Protected Site
- Vegetation Communities**
- Vegetation Community Boundary

- Ag** Agricultural
- BL01** Mineral Open Bluff Ecosite
- CUM1-1 (p-1)** Dry-Moist Old Field Meadow
- CUP1** Deciduous Plantation
- CUP1-1** Black Walnut Deciduous Plantation Type
- CUT1 (p-1)** Mineral Cultural Thicket
- CUT1-1** Sumac Shrub Thicket Type
- CUT1-1 (p-1)** Gray Dogwood Shrub Thicket Type
- CUT1 (p-1)** Mineral Cultural Woodland Ecosite
- D** Disturbed
- FOD2** Dry-Fresh White Cedar Coniferous Forest Type
- FOD2-1** Dry-Fresh Oak-Hickory Deciduous Forest Type
- FOD2-1 (p-1)** Dry-Fresh Oak-Hardwood Deciduous Forest Type
- FOD5 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Ecosite
- FOD5-1 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Type
- FOD5-2** Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
- FOD5-3 (p-1)** Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- FOD5-4** Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
- FOD6-1** Fresh-Moist Sugar Maple-Black Maple Deciduous Forest Type
- FOD6-1 (p-1)** Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
- FOD7-1 (p-1)** Fresh-Moist Ash Lowland Deciduous Forest Type
- FOD7-1 (p-1)** Fresh-Moist Willow Lowland Deciduous Forest Type
- H** Hedgerow
- M** Manicured
- MAM2 (p-1)** Mineral Meadow Marsh Ecosite
- MAM2-1 (p-1)** Reed-canary Grass Mineral Meadow Marsh Type
- MAM2-10** Mixed Forb Mineral Meadow Marsh Type
- MAS2 (p-1)** Mineral Shallow Marsh Ecosite
- MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type
- MAS2-10** Forb Mineral Shallow Marsh Type
- MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- OAO** Open Aquatic
- SWD2 (p-1)** Green Ash Mineral Deciduous Swamp Type
- SWD6** Maple Mineral Deciduous Swamp Ecosite
- SWD4-1 (p-1)** Willow Mineral Deciduous Swamp Type
- SWD2** Willow Mineral Thicket Swamp Type

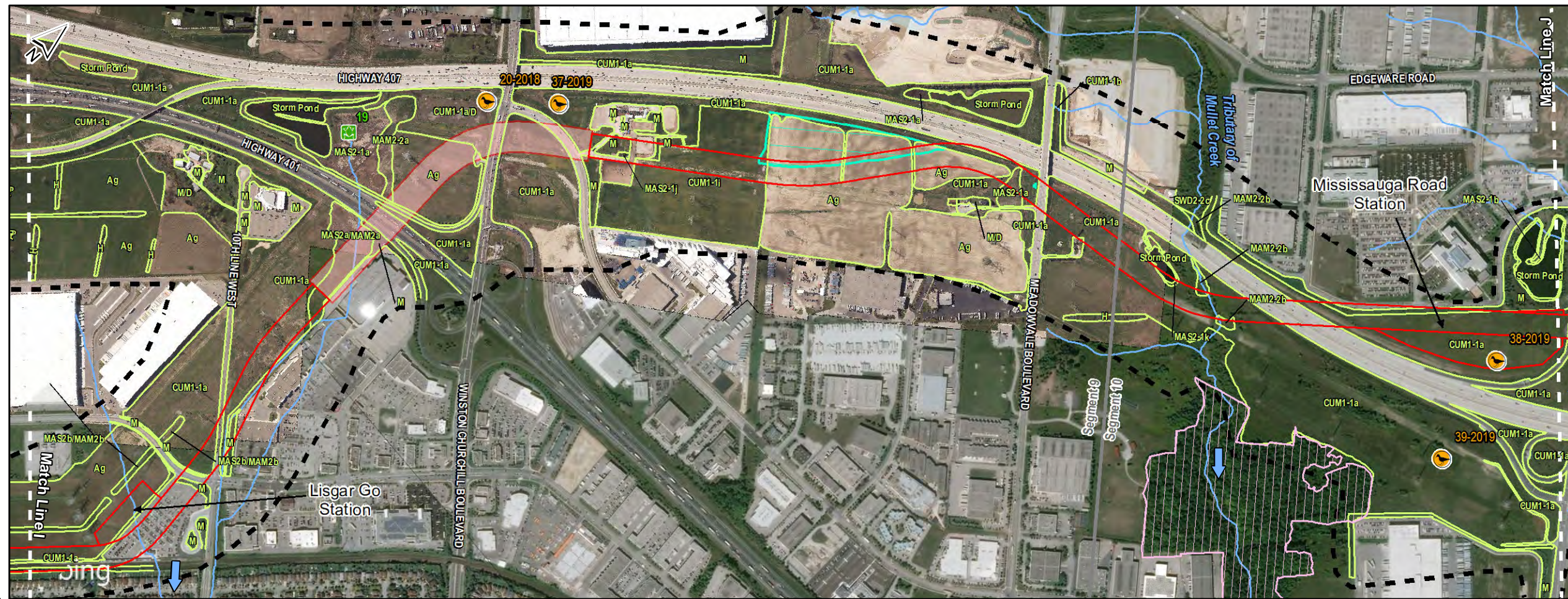
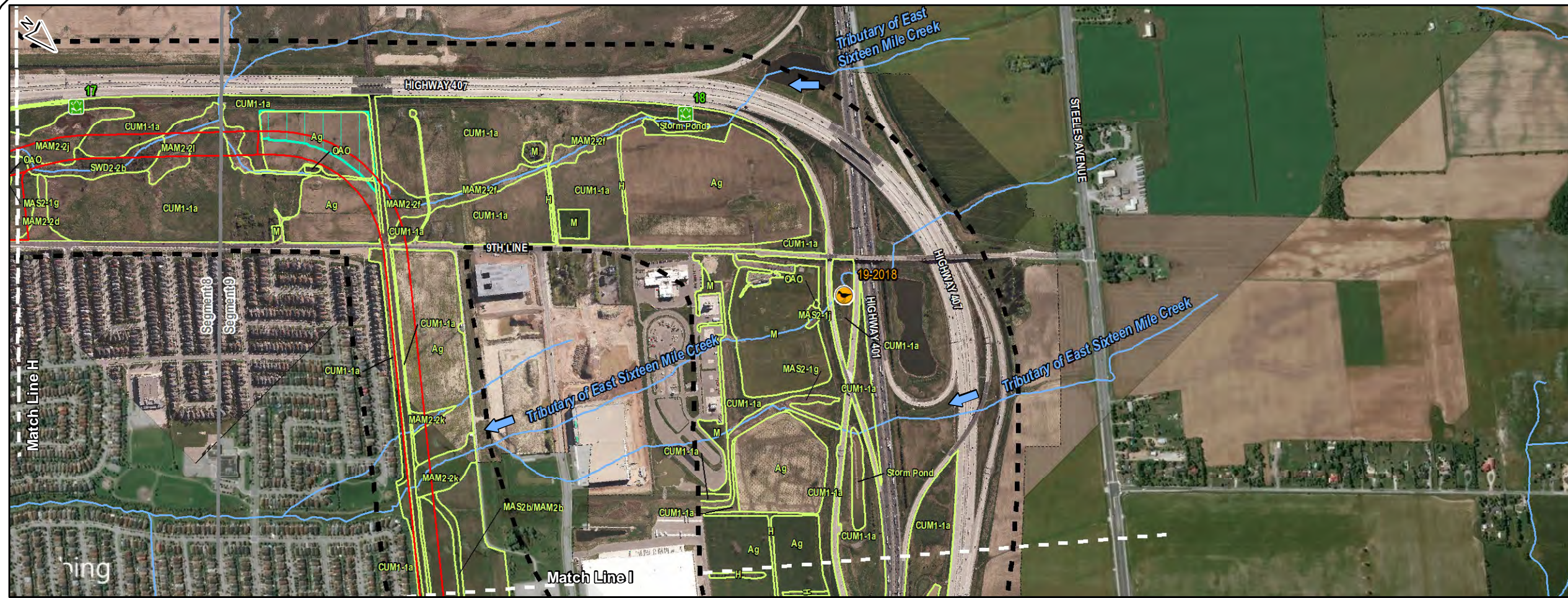
Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.

0 0.65 1.3 1.95 2.6  
Meters

## 407 TRANSITWAY WEST - NATURAL HERITAGE/ IMPACT ASSESSMENT



<b>Project:</b> TA8733	<b>Figure:</b> 3d
<b>Date:</b> March, 2020	<b>Prepared By:</b> JJP
<b>Scale:</b> 1 : 12,000	<b>Checked By:</b> SK



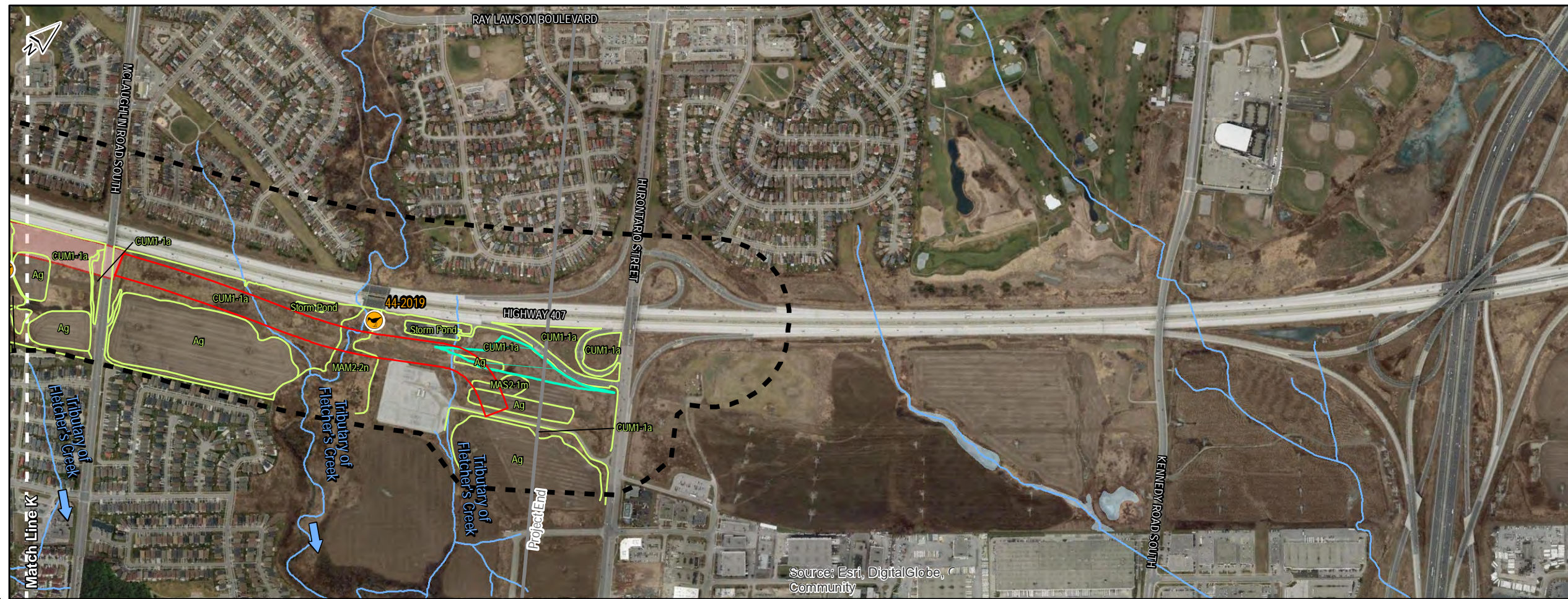
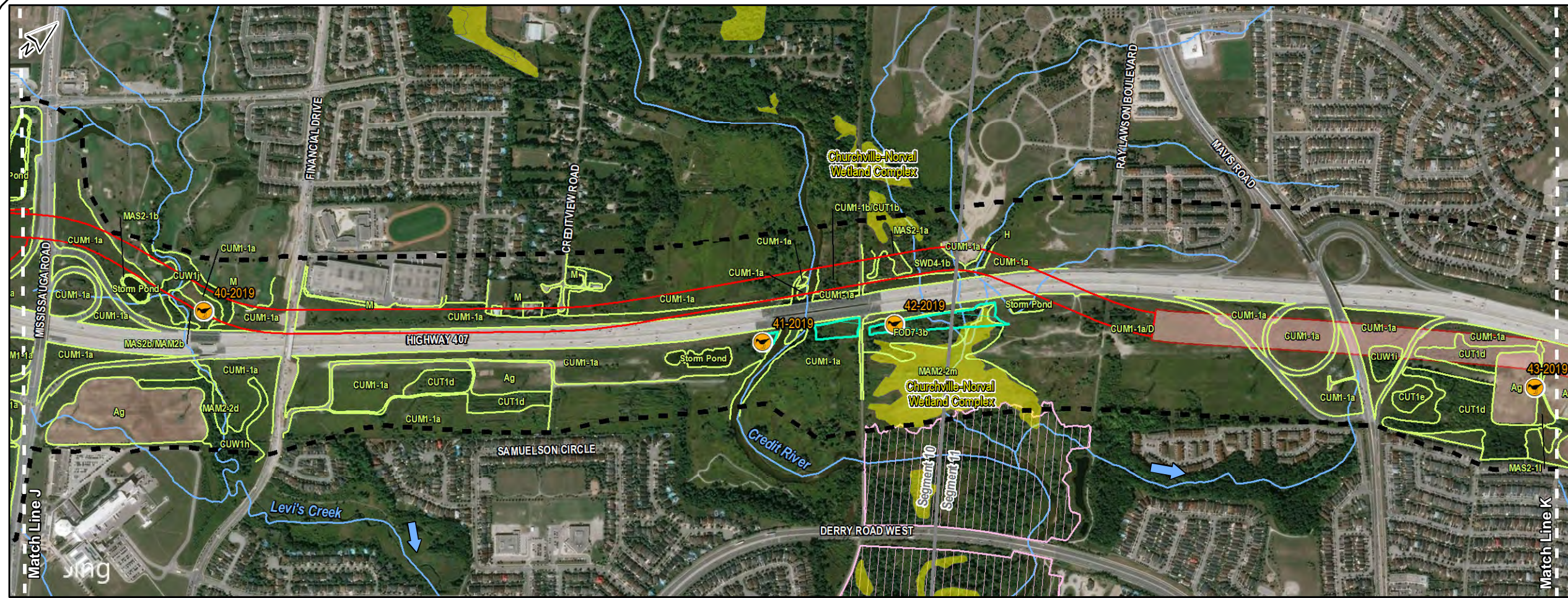
**LEGEND**

- Study Area
  - Impact Assessment Corridor
  - Tunnel Section
  - Breeding Bird Point Count Station
  - Anuran Monitoring Station
  - Watercourse
  - ANSI, Earth Science
  - ANSI, Life Science
  - Wetland Evaluated - Other
  - Wetland Evaluated - Provincial
  - Wetland not evaluated per OWES
  - Environmentally Significant Area (CVC)
  - Protected Site
  - Vegetation Communities**
  - Vegetation Community Boundary
  - Ag** Agricultural
  - BL01** Mineral Open Bluff Ecosite
  - CUM1-1 (p-1)** Dry-Moist Old Field Meadow
  - CUP1** Deciduous Plantation
  - CUP1-1** Black Walnut Deciduous Plantation Type
  - CUT1 (p-1)** Mineral Cultural Thicket
  - CUT1-1** Sumac Shrub Thicket Type
  - CUT1-1 (p-1)** Gray Dogwood Shrub Thicket Type
  - CUM1 (p-1)** Mineral Cultural Woodland Ecosite
  - D** Disturbed
  - FO02-1** Dry-Fresh White Cedar Coniferous Forest Type
  - FO02-2a** Dry-Fresh Oak-Hickory Deciduous Forest Type
  - FO02-4 (p-1)** Dry-Fresh Oak-Hardwood Deciduous Forest Type
  - FO05 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Ecosite
  - FO05-1 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Type
  - FO05-2** Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
  - FO05-4 (p-1)** Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
  - FO05-5** Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
  - FO04-1** Fresh-Moist Sugar Maple-Black Maple Deciduous Forest Type
  - FO04-4** Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
  - FO07-1 (p-1)** Fresh-Moist Ash Lowland Deciduous Forest Type
  - FO07-4 (p-1)** Fresh-Moist Willow Lowland Deciduous Forest Type
  - H** Hedgerow
  - M** Manicured
  - MAM2 (p-1)** Mineral Meadow Marsh Ecosite
  - MAM2-1 (p-1)** Reed-canary Grass Mineral Meadow Marsh Type
  - MAM2-10** Mixed Forb Mineral Meadow Marsh Type
  - MAS2 (p-1)** Mineral Shallow Marsh Ecosite
  - MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type
  - MAS2-10** Forb Mineral Shallow Marsh Type
  - MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
  - MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
  - OA0** Open Aquatic
  - SWD2-1 (p-1)** Green Ash Mineral Deciduous Swamp Type
  - SWD3** Maple Mineral Deciduous Swamp Ecosite
  - SWD4-1 (p-1)** Willow Mineral Deciduous Swamp Type
  - SWD4-2** Willow Mineral Thicket Swamp Type
- Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.
- 0 100 200 300 400 Meters

**407 TRANSITWAY WEST -  
NATURAL HERITAGE/  
IMPACT ASSESSMENT**



<b>Project:</b> TA8733	<b>Figure:</b> 3e
<b>Date:</b> February, 2020	<b>Prepared By:</b> JJP
<b>Scale:</b> 1 : 12,000	<b>Checked By:</b> SK



**LEGEND**

- Study Area
- Impact Assessment Corridor
- Tunnel Section
- Breeding Bird Point Count Station
- Anuran Monitoring Station
- Watercourse
- ANSI, Earth Science
- ANSI, Life Science
- Wetland Evaluated - Other
- Wetland Evaluated - Provincial
- Wetland not evaluated per OWES
- Environmentally Significant Area (CVC)
- Protected Site
- Vegetation Communities
- Vegetation Community Boundary

**Vegetation Communities**

- Ag** Agricultural
- BL01** Mineral Open Bluff Ecosite
- CUM1-1 (p-1)** Dry-Moist Old Field Meadow
- CUP1** Deciduous Plantation
- CUP1-1** Black Walnut Deciduous Plantation Type
- CUT1 (p-1)** Mineral Cultural Thicket
- CUT1-1** Sumac Shrub Thicket Type
- CUT1-1 (p-1)** Gray Dogwood Shrub Thicket Type
- CUT1-1 (p-1)** Mineral Cultural Woodland Ecosite
- D** Disturbed
- F002-2** Dry-Fresh White Cedar Coniferous Forest Type
- F002-2a** Dry-Fresh Oak-Hickory Deciduous Forest Type
- F002-4 (p-1)** Dry-Fresh Oak-Hardwood Deciduous Forest Type
- F005 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Ecosite
- F005-1 (p-1)** Dry-Fresh Sugar Maple Deciduous Forest Type
- F005-2** Dry-Fresh Sugar Maple-Beech Deciduous Forest Type
- F005-3 (p-1)** Dry-Fresh Sugar Maple-Oak Deciduous Forest Type
- F005-5** Dry-Fresh Sugar Maple-Hickory Deciduous Forest Type
- F004-2** Fresh-Moist Sugar Maple-Black Maple Deciduous Forest Type
- F004-4** Fresh-Moist Sugar Maple-White Elm Deciduous Forest Type
- F007-2 (p-1)** Fresh-Moist Ash Lowland Deciduous Forest Type
- F007-4 (p-1)** Fresh-Moist Willow Lowland Deciduous Forest Type
- H** Hedgerow
- M** Manicured
- MAM2 (p-1)** Mineral Meadow Marsh Ecosite
- MAM2-2 (p-1)** Reed-cornary Grass Mineral Meadow Marsh Type
- MAM2-10** Mixed Forb Mineral Meadow Marsh Type
- MAS2 (p-1)** Mineral Shallow Marsh Ecosite
- MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type
- MAS2-3** Forb Mineral Shallow Marsh Type
- MAS2-1 (p-1)** Cattail Mineral Shallow Marsh Type/Mineral Thicket Swamp Ecosite
- QAO** Open Aquatic
- SWD2-2 (p-1)** Green Ash Mineral Deciduous Swamp Type
- SWD6** Maple Mineral Deciduous Swamp Ecosite
- SWD4-1 (p-1)** Willow Mineral Deciduous Swamp Type
- SWD2-2** Willow Mineral Thicket Swamp Type

Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry.

0 100 200 300 400  
Meters

**407 TRANSITWAY WEST -  
NATURAL HERITAGE/  
IMPACT ASSESSMENT**



<b>Project:</b> TA8733	<b>Figure:</b> 3f
<b>Date:</b> April, 2020	<b>Prepared By:</b> JJP
<b>Scale:</b> 1 : 12,000	<b>Checked By:</b> SK

Source: Esri, DigitalGlobe, Community

### 3.2.1 Runningway Impacts

**Table 8** provides a summary of the vegetation removals required per segment of the runningway across the 407 Transitway between west of Brant Street to west of Hurontario Street. A discussion of the impacts to each segment follows **Table 8**.

**TABLE 8.**  
**SUMMARY OF VEGETATION REMOVALS WITHIN THE TRANSITWAY RUNNINGWAY**

<b>Transitway Segment</b>	<b>Total Area to Be Impacted (Ha)</b>
<i>Segment S1: West of Brant St to East of Dundas St</i>	
Cultural Communities (CUM1-1a, CUM1-1a/CUT1a, CUW1a and c)	19.64
Wetland Communities (MAM2-2a and b and MAS2-1a)	0.59
Anthropogenically Influenced Lands (Agricultural, Manicured and Hedgerow)	5.92
<b><i>Subtotal West of Brant St to East of Dundas St</i></b>	<b><i>26.15 ha</i></b>
<i>Segment S2: East of Dundas St to East of Appleby Line</i>	
Cultural Communities (CUM1-1a and c, CUT1-1, CUW1d and e)	6.68
Wetland Communities (MAM2-2a and b, MAS2a and MAS2b)	0.73
Forest Communities (FOD5-1a and FOD6-2)	0.51
Anthropogenically Influenced Lands (Agricultural, Hedgerows and Storm Pond)	12.31
<b><i>Subtotal East of Dundas St to East of Appleby Line</i></b>	<b><i>20.23 ha</i></b>
<i>Segment S3: East of Appleby Line to East of Tremaine Rd</i>	
Cultural Communities (CUM1-1a, c and d and CUM1-1c/CUT1c)	10.19
Mineral Open Bluff (BLO1)	0.02
Wetland Communities (MAM2-2d, e and f, MAS2-9 and MAS2b)	1.19
Forest Communities (FOD5-3b and c, FOD5-5 and FOD6-2)	0.93
Anthropogenically Influenced Lands (Agricultural and Hedgerows)	3.95
<b><i>Subtotal East of Appleby Line to East of Tremaine Rd</i></b>	<b><i>16.28 ha</i></b>
<i>Segment S4: East of Tremaine Rd to East of Bronte Rd</i>	
Cultural Communities (CUM1-1a and e, CUM1-1c/CUT1c)	11.67
Wetland Communities (MAM2-2b, MAS2-1a and d, MAS2b)	0.58
Forest Communities (FOD5-3d and e)	1.66
Anthropogenically Influenced Lands (Agricultural, Hedgerows and Storm Pond)	3.16
<b><i>Subtotal East of Tremaine Rd to East of Bronte Rd</i></b>	<b><i>17.07 ha</i></b>
<i>Segment S5: East of Bronte Rd to East of Trafalgar Rd</i>	
Cultural Communities (CUM1-1a, CUM1-1a/D, CUM1-1b, f, and g, CUT1-4a, b and c, CUT1b and CUW1f)	16.46
Mineral Open Bluff (BLO1)	0.06
Wetland Communities (MAM2-10, MAM2-2g, MAS2-1 and e, MAS2-1f and g, OAO)	0.85
Forest Communities (FOC2-2, FOD2-4a and b, FOD5-2, FOD5-3e and FOD7-3a)	8.63
Anthropogenically Influenced Lands (Agricultural, Manicured, and Hedgerows)	14.21
<b><i>Subtotal East of Bronte Rd to East of Trafalgar Rd</i></b>	<b><i>40.21 ha</i></b>
<i>Segment S6: East of Trafalgar Rd to East of Lower Base Line</i>	
Cultural Communities (CUM1-1a, CUM1-1a/D and CUM1-1e/D)	8.71
Wetland Communities (MAM2a, MAM2-2i, and SWD2-2a)	1.23
Forest Communities (FOD2-4b)	0.52
Anthropogenically Influenced Lands (Agricultural, Manicured and Hedgerows)	5.73
<b><i>Subtotal East of Trafalgar Rd to East of Lower Base Line</i></b>	<b><i>16.19 ha</i></b>
<i>Segment S7: East of Lower Base Line to North of Britannia Rd</i>	
Cultural Communities (CUM1-1a and CUM1-1e/D)	7.54
Wetland Communities (MAM2-2i and j, MAS2c/MAM2c and OAO)	0.66

**TABLE 8.**  
**SUMMARY OF VEGETATION REMOVALS WITHIN THE TRANSITWAY RUNNINGWAY**

<b>Transitway Segment</b>	<b>Total Area to Be Impacted (Ha)</b>
Anthropogenically Influenced Lands (Agricultural, Manicured, Hedgerows, Disturbed and Storm Pond)	1.72
<b><i>Subtotal East of Lower Base Line to North of Britannia Rd</i></b>	<b><i>9.92 ha</i></b>
<i>Segment S8: North of Britannia Rd to North of Derry Rd</i>	
Cultural Communities (CUM1-1a, c, and g, CUW1d and g)	9.16
Wetland Communities (MAM2-2h, j and l, MAS2-1g, SWD2-2b and OAO)	4.83
Forest Communities (FOD6-4)	0.11
Anthropogenically Influenced Lands (Agricultural, Manicured, Hedgerows, Disturbed and Storm Pond)	6.58
<b><i>Subtotal North of Britannia Rd to North of Derry Rd</i></b>	<b><i>20.68 ha</i></b>
<i>Segment S9: North of Derry Rd to West of Heritage Rd</i>	
Cultural Communities (CUM1-1a and i)	8.01
Wetland Communities (MAM2-2f, k, and l, MAS2-1a and j, MAS2a/MAM2a and MAS2b/MAM2b)	1.27
Anthropogenically Influenced Lands (Agricultural and Manicured)	9.11
<b><i>Subtotal North of Derry Rd to West of Heritage Rd</i></b>	<b><i>18.39 ha</i></b>
<i>Segment S10: West of Heritage Rd to East of Creditview Rd</i>	
Cultural Communities (CUM1-1a, CUM1-1b/CUT1b and CUW1j)	15.77
Wetland Communities (MAM2-2b, MAS2-1a and k, MAS2b/MAM2b, SWD4-1b)	1.64
Anthropogenically Influenced Lands (Manicured and Storm Pond)	1.55
<b><i>Subtotal West of Heritage Rd to East of Creditview Rd</i></b>	<b><i>18.96 ha</i></b>
<i>Segment S11: East of Creditview Rd to West of Hurontario St</i>	
Cultural Communities (CUM1-1a and CUM1-1a/D)	7.63
Wetland Communities (MAM2-2n, MAS2-1m and SWD4-1b)	0.55
Anthropogenically Influenced Lands (Agricultural)	0.60
<b><i>Subtotal East of Creditview Rd to West of Hurontario St</i></b>	<b><i>8.78 ha</i></b>
<b><i>Total Impacted Area (ha) for the Transitway Runningway</i></b>	<b><i>212.86 ha</i></b>

***Segment S1 – West of Brant Street to East of Dundas Street***

A total of 26.15 ha of predominately agricultural, cultural and/or planted areas will be removed because of the proposed 407 Transitway runningway from west of Brant St. to east of Dundas St. Cultural meadow and cultural meadow/cultural thicket communities (CUM1-1a, CUM1a/CUT1a) will experience the largest impact with over 18.0 ha to be removed, as well as impacts of 1.58 ha to cultural woodland habitat. Overall, impacts resulting in the loss of vegetation within these cultural communities is considered to be minor to moderate. Cultural meadows, thickets and woodlands are widespread and common throughout Ontario. It is expected that most plant species displaced and/or disturbed within the cultural communities due to the proposed construction will re-colonize available lands adjacent to the new right-of-way post-construction. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species.

Impacts will occur across two meadow marshes (MAM2-2a and MAM2-2b) and one shallow marsh (MAS2-1a). Reed canary grass is dominant within the meadow marsh communities. One meadow marsh is within a slight depression associated with a narrow cultural woodland that is surrounded by agriculture, and the other has developed along the side of the 407 ETR likely influenced by highway runoff. The shallow marsh is associated with a tributary of Shoreacres Creek and is dominated by broad-leaved cattails. Impacts related to the removal of 0.59 ha of these wetland communities that are widespread and

common throughout Ontario, is considered to be minor. It is expected that some wetland habitat would re-establish following the completion of transitway works.

Impacts to anthropogenically influenced lands will include the removal of 4.64 ha of agricultural land, the removal of 1.01 ha of associated hedgerows and 0.27 ha of manicured areas. Overall, impacts to these lands are considered to be minor.

### ***Segment S2 – East of Dundas Street to East of Appleby Line***

A total of 20.24 ha of predominately agricultural land, hedgerows, and cultural areas will be removed because of the proposed 407 Transitway runningway from East of Dundas St to east of Appleby Line. The largest impact will be to cultural meadow and cultural meadow/cultural thicket (CUM1-1a and c) with 6.27 ha to be impacted, and 0.41 ha of cultural thicket (CUT1-1) and cultural woodland (CUW1d and e) to be impacted within Segment S2. Overall, impacts resulting in the loss of vegetation within these cultural communities is considered to be minor. Cultural meadows, thickets and woodlands are widespread and common throughout Ontario. It is expected that most plant species displaced and/or disturbed within the cultural communities due to the proposed construction will re-colonize available lands adjacent to the new right-of-way post-construction. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species.

A total of 0.73 ha of marsh habitat will be removed, including impacts to three Reed-canary Grass Meadow Marshes (2 x MAM2-2a and MAM2-2b) and two shallow marshes (MAS2a and b). The shallow marshes are dominated by common reed (*Phragmites australis*). Most of these wetlands are either associated with Appleby Creek, a tributary of Appleby Creek, or tributaries of Sheldon Creek. Impacts will result in the removal of portions of these communities. Though only a smaller portion of these marsh communities will remain, it is expected that these communities would persist and may extend between 407 ETR and the runningway. Runoff from infrastructure is expected to provide adequate conditions for their continued persistence since the associated tributaries provide only intermittent flows. However, the shallow marsh (MAS2b) associated with a hedgerow that is dominated by common reed, will largely be removed. Given the nature of this narrow marsh, its loss is not significant. Overall, impacts to small portions of meadow marsh and shallow marsh communities noted above are considered to be minor. These wetland communities are considered widespread and common in Ontario.

Construction of the runningway in Segment S2 will result in the removal of 0.37 ha of Sugar Maple Deciduous Forest (FOD5-1a) and 0.14 ha of a Sugar Maple-Black Maple Deciduous Forest (FOD6-2) associated with Bronte Creek. These communities are within the Zimmerman Valley Life Science ANSI. The Sugar Maple-Black Maple Deciduous Forest is an uncommon forest community that has a provincial conservation rank of S3, and includes several significant plant species including pale touch-me-not and cow-parsnip (*Heracleum lanatum*). Removal of a portion of the Sugar Maple Deciduous Forest (0.37 ha) can have a negative impact, however, removals are along the community edge where it is already disturbed. This community extends beyond the limits identified for the purposes of this study and it is likely the community will continue to persist post-development. The Sugar Maple-Black Maple Deciduous Forest is small so the removal of 0.14 ha within Segment S2, will likely have a negative impact on this community where its location is restricted to within the floodplain. Forest edge management is required to enhance newly created forest edges and to increase resilience against invasive species and windthrow. Overall, impacts to the Sugar Maple Deciduous Forest are considered to be minor, but impacts to the Sugar Maple-Black Maple Deciduous Forest are considered to be high. During subsequent design phases, design refinements to minimize impacts to these forest communities should be undertaken, to the extent possible. Forest edge management to enhance forest edges and increase resilience against invasive species and windthrow, along with the restoration/enhancement of any suitable lands that remain south of the transitway adjacent to those forest communities or on identified Protected Sites, will be undertaken.



Impacts to anthropogenically influenced lands will include the removal of 11.68 ha of agricultural lands and the removal of 0.57 ha of hedgerow. Overall, impacts to these lands are considered to be minor.

***Segment S3 – East of Appleby Line to East of Tremaine Road***

A total of 16.28 ha of predominately cultural areas and agricultural land will be removed because of the proposed 407 Transitway runningway from East of Appleby Line to east of Tremaine Rd. The largest impact will be to cultural meadow and cultural meadow/cultural thicket (CUM1-1a, c and d, CUM1-1c/CUT1c) with 10.19 ha to be impacted within Segment S3. Overall, impacts resulting in the loss of vegetation within these cultural communities is considered to be minor. Cultural meadows are widespread and common throughout Ontario. Plant species displaced and/or disturbed within the cultural communities due to the proposed construction are expected to re-colonize available lands adjacent to the new right-of-way post-construction. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species.

A total of 1.19 ha of marsh habitat will be removed, including impacts to four Reed-canary Grass Meadow Marshes (MAM2-2d, 2 x MAM2-2e and MAM2-2f), a shallow marsh (MASb), and a Forb Mineral Shallow Marsh (MAS2-9). Three meadow marsh communities are associated with tributaries of Fourteen Mile Creek. These narrow communities continue beyond the study area where it is expected these will persist/reestablish post-development. The MAM2-2e, located close to the eastern limit of Segment S3 is likely also supported by runoff. This small wetland is complexed as part of the provincially significant North Oakville-Milton West Wetland Complex, of which 0.02 ha will be impacted. Overall, it is expected that remnants of these wetland communities would persist and wetland species will colonize suitable spaces between the 407 ETR and the runningway where runoff from infrastructure is expected to provide adequate conditions to support their continued existence where the associated tributaries provide intermittent flows. Common reed (*Phragmites australis*) dominates the shallow marsh with occasional narrow-leaved cattails that have established within a low-lying area, along a former laneway within the hydro facility. The Forb Mineral Shallow Marsh is a narrow (<1 m) marsh located along the western bank of Bronte Creek, within the the Zimmerman Valley Life Science ANSI, includes floating-leaved macrophytes along the water's edge. It is expected that the Forb Mineral Shallow Marsh would be impacted due to any bridgework to cross Bronte Creek. However, with favourable light conditions below a bridge similar in height to the existing structure – any proposed restoration works, and re-colonization of plants post-construction would mitigate impacts to this community. Overall, impacts to small portions of the wetland communities noted above are considered to be minor. These wetland communities are considered widespread and common in Ontario.

Construction of the runningway in Segment S3 will result in the removal of 0.93 ha of forested habitat primarily associated with Sixteen Mile Creek, within the Zimmerman Valley Life Science ANSI. This includes impacts to 0.09 ha of Sugar Maple-Black Maple Deciduous Forest (FOD6-2), a community ranked provincially as S3. This community also lies partially within Segment S2 where impacts to 0.14 ha are expected. In total, an area of 0.23 ha of the Sugar Maple-Black Maple Deciduous Forest is expected to be impacted. This uncommon community contains several regionally rare species. It is restricted to within the floodplain west of Bronte Creek. Impacts have the potential to cause considerable negative impacts to this community. Another forest community associated with Bronte Creek is the Sugar Maple-Oak Deciduous Forest (FOD5-3b) located on the upper slope and tableland beyond the top-of-slope, east of Bronte Creek. Impacts here will result in the removal of 0.38 ha of habitat. East of Bronte Creek, 0.15 ha of a Sugar Maple-Hickory Deciduous Forest (FOD5-5) will be removed along the southern edge of this narrow forest community. Impacts are associated primarily with edge habitat that is typically disturbed with a higher incidence of invasive species. In addition, the southern edge of a small, fragmented Sugar Maple-Oak Deciduous Forest (FOD5-3c) will be impacted with 0.31 ha removed along its southern edge. This is a good

quality remnant forest community with a diverse range of tree species that includes several mature trees (>50 cm diameter at breast height or DBH). Overall, impacts to forest communities discussed above are considered moderate to high. During subsequent design phases, design refinements to minimize impacts to these forest communities should be undertaken, to the extent possible. Forest edge management to enhance forest edges and increase resilience against invasive species and windthrow, along with the restoration/enhancement of any suitable lands that remain south of the transitway adjacent to those forest communities or on identified Protected Sites, should be undertaken.

A Mineral Open Bluff (BLO1) associated with Bronte Creek with impacts to 0.02 ha along the eastern bank of the creek was also identified. In addition, impacts to anthropogenically influenced lands will include the removal of 3.69 ha of agricultural land and the removal of 0.25 ha of associated hedgerow. Overall, impacts to these lands are considered to be minor.

#### ***Segment S4 – East of Tremaine Rd to East of Bronte Road***

Impacts between east of Tremaine Road to east of Bronte Road will result in the removal of 17.07 ha of vegetation communities and anthropogenically influenced lands. Impacted vegetation communities include cultural meadow (CUM1-1a and e) and cultural meadow/cultural thicket (CUM1-1c/CUT1c), Sugar Maple-Oak Deciduous Forest (FOD5-3d and e), Reed-canary Grass Meadow Marsh (MAM2-2b), Cattail Mineral Shallow Marsh (MAS2-1a and d), Mineral Shallow Marsh (MAS2b), agricultural lands, associated hedgerows and storm ponds.

Impacts to cultural habitats within Segment S4 includes the removal of 11.67 ha of meadow and meadow/thicket. Cultural vegetation communities are widespread and common throughout Ontario. Cultural vegetation communities typically persist in areas that are regularly disturbed, and as a result, generally contain a high proportion of invasive and non-native plant species that are disturbance tolerant. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species present in the cultural communities. Overall, impacts resulting in the loss of vegetation within these cultural communities are considered to be minor.

Impacts to the Reed-canary Grass Meadow Marsh (MAM2-2b) will result in the removal of this community (0.26 ha). This meadow marsh is located within a low-lying area supported by road runoff associated with the Regional Road 25 to the 407 ETR on-ramp. A total of 0.06 ha will be removed of a Cattail Mineral Shallow Marsh (MAS2-1a) that is located along a very narrow, eroded channel likely supported by road runoff. The MAS2-1d community is associated with a tributary of Fourteen Mile Creek and is complexed as part of the provincially significant North Oakville-Milton West Wetland Complex. Impacts are related to the removal of 0.09 ha along the northern portion of this wetland. The loss of a portion of this wetland and its proximity to the runningway and station may have a negative impact to the remaining portion of this community. Impacts to the Mineral Shallow Marsh (MAS2a) will result in the removal of the northern half of this community. Common reed is dominant within this community, which is located within a low-lying area and is supported by highway runoff associated with the 407 ETR to Regional Road 25 off-ramp. Overall, impacts resulting in the loss of vegetation within these wetland communities are considered to be minor.

A total of 1.66 ha of forest habitat will be impacted. Forest removals include 0.65 ha along the northern edge of a Sugar Maple-Oak Deciduous Forest (FOD5-3e), within the Sixteen Mile Creek Candidate ANSI, where a higher presence of non-native and invasive species was observed. It is important to note that the height of any bridge constructed to cross Sixteen Mile Creek would allow adequate light to habitat below, thus, vegetation within portions of FOD5-3e should be retained to the extent possible. Impacts of 1.01 ha which equates to approximately half of a small and isolated Sugar Maple-Oak Deciduous Forest (FOD5-3d), will occur due to construction of the runningway in Segment S4. Additional impacts due to the construction of

the bus storage yard will result in the complete removal of this community. This forest contains a variety of plant species including the regionally rare pointed broom sedge (*Carex scoparia*), and vegetation observed included a range of young to mid-aged trees. Impacts to these forest communities are considered to be moderate. Where surplus lands are available within the study area, restoration or enhancement of forest habitat should be undertaken, to the extent possible.

Impacts to anthropogenically influenced lands will include the removal of 2.66 ha of agricultural lands and 0.47 ha of associated hedgerows, with very minor impacts to an existing storm pond. The impacts to these lands is considered to be minor.

### ***Segment S5 – East of Bronte Road to East of Trafalgar Road***

The runningway portion of the Transitway will impact 40.21 ha of lands from east of Bronte Road to east of Trafalgar Road, with the greatest impact to cultural habitat and anthropogenically influenced lands. Impacts to cultural communities include cultural meadow (CUM1-1a, b, f and g), some of which were observed with existing disturbances (CUM1-1a/D), cultural thicket (CUT1-4a to c, and CUT1b), and cultural woodland (CUW1f). Impacts to wetlands include Reed-canary Grass Meadow Marsh (MAM2-2g), a Mixed Forb Mineral Meadow Marsh (MAM2-10), Cattail Mineral Shallow Marsh (MAS2-1a, e, f and g), and open aquatic (OAO). Impacts to forest communities include a White Cedar Coniferous Forest (FOC2-2), Oak-Hardwood Deciduous Forest (FOD2-4a and b), a Sugar Maple-Beech Deciduous Forest (FOD5-2), a Sugar Maple-Oak Deciduous Forest (FOD5-3e), and a Willow Lowland Deciduous Forest (FOD7-3a). Impacts to a Mineral Open Bluff (BLO1) associated with Sixteen Mile Creek have been identified, as well as impacts to agricultural lands, hedgerows and manicured areas. Communities in Segment S5, associated with Sixteen Mile Creek are within the Sixteen Mile Creek Candidate Life Science ANSI.

Impacts to cultural habitats include the removal of 16.46 ha of meadow, thicket, and woodland habitat. This includes impacts to 0.36 ha of cultural woodland comprised of a small, isolated community associated with a residence and surrounded by agricultural fields, east of Trafalgar Road. A total of 0.68 ha of a cultural thicket (CUT1b) will be impacted. This community is associated with Sixteen Mile Creek comprised of a range of non-native and invasive species including abundant coltsfoot (*Tussilago farfara*), giant hogweed (*Heracleum mantegazzianum*) and wild parsnip (*Pastinaca sativa*) observed occasionally, but also includes several sycamore (*Platanus occidentalis*) trees, a regionally rare species. A total of 2.95 ha of the northern portion of three Gray Dogwood Cultural Thickets (CUT1-4a to c) will also be impacted, all of these providing good quality habitat. Cultural thicket (CUT1-4b) and cultural meadow (CUM1-1f) are located in proximity to a forested community associated with the Oakville-Milton Wetlands and Uplands Candidate ANSI. Where impacts occur next to this ANSI restoration/enhancement and edge management on lands that are retained south of the runningway, should be undertaken. Overall, cultural vegetation communities identified are widespread and common throughout Ontario, and impacts resulting in the loss of vegetation within these cultural communities are considered to be minor. However, restoration/enhancement and edge management as noted above should be undertaken to mitigate impacts to the Candidate ANSI, and to help to sustain the good quality Gray Dogwood Cultural Thicket (CUT1-4a) that would be retained.

A total of 0.85 ha of wetland habitat will be impacted, including impacts to a Mixed Forb Mineral Meadow Marsh associated with Sixteen Mile Creek, a community that includes the regionally rare plant palmate-leaf sweet-coltfoot. Any bridgework undertaken to cross Sixteen Mile Creek would impact this wetland. However, with favourable light conditions below a bridge similar in height to the existing structure that crosses the creek – any proposed restoration works, and re-colonization of plants post-construction would mitigate impacts to this community. The Reed-canary Grass Meadow Marsh near to the eastern limit of Segment S5 is located within a low area, adjacent to a mix of meadow, thicket and

woodland communities where 0.20 ha or close to half of this community will be impacted. Two Cattail Mineral Shallow Marshes (MAS2-1a and e) will be removed due to impacts from the construction of the runningway. These shallow marshes are either associated with road drainage or associated with a tributary of Joshua's Creek. Two other shallow marshes (MAS2-1f and g) will be partially impacted by the runningway with additional impacts expected due to transitway infrastructure. These additional impacts are expected to result in a diminished wetland presence across Segment S5. Though these wetland communities are considered widespread and common in Ontario, overall, impacts to wetland communities within this segment are considered to be minor to moderate. Restoration of any low-lying areas, within remaining suitable habitat associated with local tributaries should be undertaken to mitigate impacts to the extent possible.

A total of 8.63 ha of forested habitat will be impacted across Segment S5. Of this area, 2.35 ha along the northern portion of Sugar Maple-Oak Deciduous Forest (FOD5-3e), Willow Lowland Deciduous Forest (FOD7-3a), and White Cedar Coniferous Forest (FOC2-2) communities associated with Sixteen Mile Creek, will be impacted. Efforts should be made to retain as much of these forest communities as possible below any bridge structure constructed to span Sixteen Mile Creek, where the bridge height is expected to permit adequate light. A total of 6.28 ha of habitat will be impacted across three other forest communities (FOD2-4a and b, and FOD5-2). East of Sixteen Mile Creek a Sugar Maple-Beech Deciduous Forest associated with a Tributary of Sixteen Mile Creek at its eastern edge, will be impacted with a small portion of forest to be retained south of the runningway. Within this forest is a narrow wetland that is complexed with the provincially significant North Oakville-Milton West Wetland Complex. Minor impacts of 0.004 ha are expected, but the removal of forest (FOD5-2) may cause indirect impacts. An Oak-Hardwood Deciduous Forest (FOD2-4a) west of Trafalgar Road, is contiguous with forest habitat that will remain south of the proposed runningway. This forest, south of the runningway is within the Oakville-Milton Wetlands and Uplands Candidate ANSI. The Oak-Hardwood Deciduous Forest (FOD2-4b) east of Trafalgar Road is a small, isolated forest with fair to good quality habitat, of which 0.41 ha is located within Segment S5. A portion of this habitat within Segment S6 will also be removed. The removal of almost half of this forest fragment would likely cause negative impacts to the remaining portion of this forest given the very small area of habitat to be retained, which would have a high edge-to-interior ratio with increased vulnerability to invasion by non-native species and increased exposure to windthrow. Overall, impacts to forest communities discussed above are considered high. During subsequent design phases, design refinements to minimize impacts to these forest communities should be undertaken, to the extent possible. Forest Edge management is required to enhance forest edges and to increase resilience against invasive species and windthrow. This is especially important along newly created forest edges associated with the Oakville-Milton Wetlands and Uplands Candidate ANSI, which also contains wetland habitat that is part of the North-Oakville-Milton East Provincially Significant Wetland Complex. The restoration/enhancement of any suitable lands remaining south of the runningway and adjacent to those forest communities should be carried out. If any excess or surplus lands are identified within the study area, forest restoration should be undertaken.

A Mineral Open Bluff (BLO1) associated with Sixteen Mile Creek with impacts to 0.06 ha along the eastern bank of the creek was identified. Also, impacts to anthropogenically influenced lands will include the removal of 12.96 ha of agricultural land, the removal of 0.66 ha of associated hedgerows and 0.52 ha of manicured areas. Overall, impacts to these lands are considered to be minor.

### ***Segment S6 – East of Trafalgar Road to East of Lower Base Line***

Impacts between east of Trafalgar Road to east of Lower Base Line will result in the removal of approximately 16.19 ha of vegetation communities and anthropogenically influenced lands, consisting primarily of cultural meadow and disturbed lands (CUM1-1a, CUM1-1a/D and CUM1-1e/D) with minor impacts to wetlands (MAM2a, MAM2-2i, and SWD2-2a) and forest (FOD2-4b). Impacts within this

section have been minimized to the extent possible where the preferred alignment will be tunneled across a portion of Segment S6.

The largest impact of 8.71 ha will be to cultural meadow communities that are already in a disturbed state with ongoing development. Overall, impacts resulting in the loss of vegetation within these cultural communities is considered to be minor. Cultural meadow is widespread and common throughout Ontario. It is expected that most plant species displaced and/or disturbed within the cultural communities due to the proposed construction will re-colonize available lands adjacent to the new right-of-way post-construction. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species.

A total of 1.23 ha will be impacted comprised of meadow marsh (MAM2a and MAM2-2i) communities and a deciduous swamp (SWD2-2a). These wetlands are located in a low-lying area and are surrounded by infrastructure. Common reed dominates the meadow marsh community (MAM2a) with abundant reed canary grass. Species diversity within the Reed-canary Grass Mineral Meadow Marsh (MAM2-2i) is limited. The Green Ash Mineral Deciduous Swamp is dominated by red ash (also known as green ash) of which many of dead or in decline. This community appeared to be in transition with common buckthorn occasional to abundant in the shrub layer. Lands adjacent to this community were in a disturbed state with ongoing construction. Overall, impacts resulting in the loss of vegetation within these wetland communities are considered to be minor.

The Oak-Hardwood Deciduous Forest (FOD2-4b) east of Trafalgar Road is a small, isolated forest with fair to good quality habitat of which 0.52 ha will be impacted within Segment S6, and an additional 0.41 ha within Segment S5, for a total impact of 0.93 ha. The removal of almost half of this forest fragment would likely cause negative impacts to the remaining portion of this forest given the small and isolated nature of retained habitat which would have a high edge-to-interior ratio with increased vulnerability to invasion by non-native species, and increased exposure to windthrow. Overall, impacts to forest communities discussed above are considered to be minor to moderate. Restoration/enhancement of any suitable lands remaining south of the runningway and adjacent to forest communities, should be carried out. If any excess or surplus lands are identified within the study area, forest restoration should be undertaken.

Impacts to anthropogenically influenced lands will include the removal of 5.05 ha of agricultural land, the removal of 0.51 ha of associated hedgerows and 0.17 ha of manicured areas. Overall, impacts to these lands are minor.

### ***Segment S7 – East of Lower Base Line to North of Britannia Road***

Impacts between east of Lower Base Line to North of Britannia Road will result in the removal of 9.92 ha of vegetation communities and anthropogenically influenced lands. Impacted vegetation communities include cultural meadow (CUM1-1a and CUM1-1e/D disturbed by ongoing development), Reed-canary Grass Mineral Meadow Marsh (MAM2-2i and j), Mineral Shallow Marsh/Mineral Meadow Marsh (MAS2c/MAM2c) and Open Aquatic (OAO).

The largest impact will be to cultural meadow communities (CUM1-1a and CUM1-1e/D) which cover an area of 7.54 ha across Segment S7. Overall, impacts resulting in the loss of vegetation within these cultural communities are considered to be minor. Cultural meadow is widespread and common throughout Ontario. It is expected that most plant species displaced and/or disturbed within the cultural communities due to the proposed construction will re-colonize available lands adjacent to the new right-of-way post-construction. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species.

Construction of the runningway will result in the removal 0.66 ha of meadow marsh, shallow marsh habitat and open aquatic. Both wetland communities are in low-lying areas between the 407 ETR and Ninth Line and are associated with a Tributary of East Sixteen Mile Creek. Impacts will mostly affect existing edge habitat and these communities exhibit limited plant diversity. Overall, impacts resulting in the loss of vegetation within these wetland communities are considered to be minor.

Impacts to anthropogenically influenced lands will include the removal of 1.72 ha of agricultural lands, manicured areas and hedgerows, with the greatest impact of 1.06 ha to manicured areas. The impact to these lands is considered to be minor.

***Segment S8 – North of Britannia Rd to North of Derry Road***

Impacts between north of Britannia Road to north of Derry Road will result in the removal of 20.68 ha of vegetation communities and anthropogenically influenced lands. Impacted vegetation communities include cultural meadow (CUM1-1a, c and g) and cultural woodland (CUW1d and g), Reed-canary Grass Mineral Meadow Marsh (MAM2-2h, j and l), Cattail Mineral Shallow Marsh (MAS2-1g), Green Ash Mineral Deciduous Swamp (SWD2-2b), Open Aquatic (OAO), and Sugar Maple-White Elm Deciduous Forest (FOD6-4).

The largest impact of 9.16 ha will be to cultural communities across Segment S8, with the greatest impact of 9.03 ha, to cultural meadow. Overall, impacts resulting in the loss of vegetation within these communities are considered to be minor. Cultural meadow is widespread and common throughout Ontario. It is expected that most plant species displaced and/or disturbed within the cultural communities due to the proposed construction will re-colonize available lands adjacent to the new right-of-way post-construction. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species.

Construction of the runningway will result in the removal 4.83 ha of Reed-canary Grass Mineral Meadow Marsh, Cattail Mineral Shallow Marsh, Green Ash Mineral Deciduous Swamp and open aquatic. The largest of these removals is associated with meadow marsh communities where 4.51 ha will be impacted. Two Reed-canary Grass Mineral Meadow Marshes (MAM2-2h and j) are associated with a tributary of East Sixteen Mile Creek, which crosses the length of Segment S8, immediately adjacent and east of the 407 ETR. Any surface alteration to tributary flows to accommodate for the construction of the runningway would provide suitable habitat for the re-establishment of meadow marsh habitat. A total of 0.51 ha of Green Ash Mineral Deciduous Swamp will be impacted. Most of the large red ash (also known as green ash) trees within this community are dying or are in decline with common buckthorn occasional in the shrub layer. This community is located within a low-lying area but appears to be in transition. There may be opportunity for the restoration of deciduous swamp in suitable habitat between the runningway and the 407 ETR. Overall, impacts resulting in the loss of vegetation within these wetland communities are considered to be minor to moderate.

A total of 0.11 ha of Sugar Maple-White Elm Deciduous Forest (FOD6-4) will be impacted at the northwest corner of this forest community. Overall, impacts resulting in the loss of vegetation along the forest edge are considered to be minor. However, forest edge management to enhance forest edges and increase resilience against invasive species is required to mitigate any additional impacts to the forest community.

Impacts to anthropogenically influenced lands will include the removal of 6.58 ha of agricultural and disturbed lands, manicured areas, hedgerows, and storm ponds, with the greatest impact of 4.15 ha to agricultural lands. The impact to these lands is considered to be minor.

***Segment S9 – North of Derry Road to West of Heritage Road***

Impacts between north of Derry Road to west of Heritage Road will result in the removal of 18.39 ha of vegetation communities and anthropogenically influenced lands. Impacted communities include cultural meadow (CUM1-1a and i), Reed-canary Grass Mineral Meadow Marsh (MAM2-2f, k and l), Cattail Mineral Shallow Marsh (MAS2-1a and j), and Mineral Shallow Marsh/Mineral Meadow Marsh (MAS2a/MAM2a and MAS2b/MAM2b). Impacts within this section have been minimized to the extent possible where the preferred alignment will be tunneled across a portion of Segment S9.

The largest impact will be to cultural communities and lands that are anthropogenically influenced. These impacts are associated with the removal of 8.01 ha of cultural meadow and 8.49 ha of agricultural lands that are largely associated with a hydro corridor. Impacts to cultural meadow communities are considered to be minor. Cultural meadows are widespread and common throughout Ontario. Cultural vegetation communities typically persist in areas that are regularly disturbed, and as a result, generally contain a high proportion of invasive and non-native plant species that are disturbance tolerant. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species present in cultural communities. Impacts to anthropogenically influenced lands are also considered to be minor

Construction of the runningway will result in the removal 1.27 ha of wetland habitat comprised of Reed-canary Grass Mineral Meadow Marshes and Cattail Mineral Shallow Marshes. These wetland communities are located in low-lying areas, are associated with Tributaries of East Sixteen Mile Creek and are partially influenced by runoff and/or drainage. The very small (0.04 ha) shallow marsh community (MAS2-1j) will be removed entirely due to runningway impacts. Impacts are typically associated with community edges. It is expected that most plant species displaced and/or disturbed within these wetlands that are dominated by reed-canary grass, cattails and/or common reed, will re-colonize available lands adjacent to the new right-of-way, post-construction. Overall, impacts resulting in the loss of vegetation within these wetland communities are considered to be minor.

***Segment S10 – West of Heritage Road to East of Creditview Road***

A change to this segment has been made since the initial analysis of Alignment Option 1 and Alignment Option 2. This was due to new information received regarding existing archaeological potential south of the 407 ETR around the Credit River area. The change consists of crossing the Credit River on the north side of 407 ETR. The impacts to the new alignment are presented here. The figure below presents the new preferred alignment for this segment.



Impacts between west of Heritage Road to east of Creditview Road will result in the removal of 18.96 ha of vegetation communities and anthropogenically influenced lands. Impacted vegetation communities include Mineral Cultural Meadow (CUM1-1a), Mineral Cultural Meadow/Mineral Cultural Thicket (CUM1-1b/CUT1b), Mineral Cultural Woodland (CUW1j), Reed-canary Grass Mineral Meadow Marsh (MAM2-2b), Cattail Mineral Shallow Marsh (MAS2-1a and k), Mineral Shallow Marsh/Mineral Meadow Marsh (MAS2b/MAM2b), and a Willow Mineral Lowland Deciduous Swamp (SWD4-1b).

The largest impact of 15.77 ha will be to cultural communities including the removal of 14.63 ha of meadow habitat across Segment S10. Overall, impacts resulting in the loss of vegetation within these cultural communities are considered to be minor. Cultural meadow is widespread and common throughout Ontario. It is expected that most plant species displaced and/or disturbed within the cultural communities due to the proposed construction will re-colonize available lands adjacent to the new right-of-way post-construction. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species.

Construction of the runningway will result in the removal 1.64 ha of wetland habitat. A total of 0.51 ha is associated with Reed-canary Grass Mineral Meadow Marsh, Cattail Mineral Shallow Marsh and Mineral Shallow Marsh/Mineral Meadow Marsh communities that are dominated by cattails, reed-canary grass or common reed. Impacts will mainly affect edge habitat. The greatest wetland impact within this segment is the removal of 1.13 ha of a willow lowland swamp. Overall, impacts resulting in the loss of vegetation within these wetland communities are considered to be minor to moderate. Where there are opportunities for the re-establishment and spread of similar wetland communities between the runningway and the 407 ETR, as well as south of the runningway, edge management/restoration efforts should be undertaken to mitigate impacts.

Impacts to anthropogenically influenced lands will include the removal of 1.55 ha of manicured areas and a small portion of a storm pond. The impact to these lands is considered to be minor.

### ***Segment S11 – East of Creditview Road to West of Hurontario Street***

Impacts between east of Creditview Road to west of Hurontario Street will result in the removal of 8.78 ha of vegetation communities and anthropogenically influenced lands. Impacted vegetation communities include cultural meadow (CUM1-1a and CUM1-1a/D which includes lands that have anthropogenic disturbances), Reed-canary Grass Mineral Meadow Marsh (MAM2-2n), Cattail Mineral Shallow Marsh (MAS2-1m), and a Willow Mineral Lowland Deciduous Swamp (SWD4-1b). Impacts within this section have been mitigated to the extent possible where the preferred alignment will be tunneled across a portion of Segment S11.

The largest impact will be to cultural meadow communities including an area of 7.62 ha across Segment S11. Overall, impacts resulting in the loss of vegetation within these cultural communities are considered to be minor. Cultural meadow is widespread and common throughout Ontario. It is expected that most plant species displaced and/or disturbed within the cultural communities due to the proposed construction will re-colonize available lands adjacent to the new right-of-way post-construction. Disturbance activities often serve to promote the establishment and/or spread of certain plant species such as those disturbance tolerant species.

Construction of the runningway will result in the removal 0.55 ha of wetland habitat, with the largest impact of 0.36 ha to the Reed-canary Grass Mineral Meadow Marsh, which is located within the floodplain of a Tributary of Fletcher's Creek. Impacts to this meadow marsh will be limited to impacts associated with the construction of a bridge to cross the tributary, where it is expected that reed canary grass will re-establish



post-construction. A total of 0.15 ha will be removed from the Cattail Mineral Shallow Marsh (MAS2-1m), a small wetland with abundant narrow-leaved cattails and abundant common reed surrounded by agriculture and cultural meadow. A total of 0.04 ha of the willow lowland swamp, which is partially within Segment S10, will also be impacted. Overall, impacts resulting in the loss of vegetation within these wetland communities are considered to be minor to moderate. Where there are opportunities for the re-establishment and spread of similar wetland communities between the runningway and the 407 ETR, as well as south of the runningway, edge management/restoration efforts should be undertaken to mitigate impacts. Impacts to anthropogenically influenced lands will include the removal of 0.44 ha of agricultural lands and 0.16 ha associated with a hedgerow. The impact to these lands is considered to be minor.

### 3.2.2 Station Impacts

**Table 9** provides a summary of the vegetation removals required per station for the preferred station locations for the 407 Transitway west of Brant Street to west of Hurontario Street. A discussion of the impacts to vegetation and vegetation communities per station is provided below.

**TABLE 9.  
 SUMMARY OF VEGETATION REMOVALS WITHIN THE TRANSITWAY STATIONS AND BRONTE ROAD  
 BUS STORAGE YARD IMPACTS**

Transitway Segment	Total Area to Be Impacted (Ha)
<i>Dundas Street Station</i>	
Cultural Communities (CUM1-1a, CUTa/CUW1a, and CUW1c)	4.39
Wetland Communities (SWT2-2)	0.91
Anthropogenically Influenced Lands (Agricultural, Hedgerows and Storm Pond)	3.58
<b>Subtotal Dundas Street Station</b>	<b>8.88 ha</b>
<i>Appleby Line Station</i>	
Cultural Communities (CUM1-1a)	0.68
Anthropogenically Influenced Lands (Agricultural and Hedgerow)	3.51
<b>Subtotal Appleby Line Station</b>	<b>4.19 ha</b>
<i>Bronte Road Station and The Bronte Road Bus Storage Yard</i>	
Cultural Communities (CUM1-1e)	13.33
Wetland Communities (MAS2-1a)	0.04
Forest Communities (FOD5-3d)	0.50
Anthropogenically Influenced Lands (Hedgerows)	0.33
<b>Subtotal Bronte Road Station/ Bronte Road Bus Storage Yard</b>	<b>14.20 ha</b>
<i>Trafalgar Road Station</i>	
Cultural Communities (CUM1-1a)	0.83
Forest Communities (FOD2-4a)	0.09
Anthropogenically Influenced Lands (Agricultural and Hedgerows)	4.34
<b>Subtotal Trafalgar Road Station</b>	<b>5.26 ha</b>
<i>Britannia Road Station</i>	
Cultural Communities (CUM1-1a)	1.60
Wetland Communities (MAM2-2j)	0.66
Anthropogenically Influenced Lands (Manicured)	0.05
<b>Subtotal Britannia Road Station</b>	<b>2.31 ha</b>
<i>Derry Road Station</i>	
Cultural Communities (CUM1-1c)	3.18
Wetland Communities (MAM2-2d, MAS2-1g and OAO)	0.12
Anthropogenically Influenced Lands (Manicured and Hedgerows)	0.55
<b>Subtotal Derry Road Station</b>	<b>3.85 ha</b>
<i>Lisgar GO Station</i>	
Cultural Communities (CUM1-1a)	0.14
Anthropogenically Influenced Lands (Agricultural)	0.83
<b>Subtotal Lisgar GO Station</b>	<b>0.97 ha</b>
<i>Mississauga Road Station</i>	
Cultural Communities (CUM1-1a)	2.95
<b>Subtotal Mississauga Road Station</b>	<b>2.95 ha</b>
<b>Total Impacted Area (ha) for the Transitway Stations and Bronte Road Bus Storage Yard</b>	<b>42.61 ha</b>

### ***Dundas Street Station***

Impacts associated with the construction of the Dundas Street Station will result in the removal of 8.88 ha of vegetation communities comprised of cultural habitat, wetland, hedgerow and storm ponds, and anthropogenically influenced lands. Impacted vegetation communities include cultural meadow (CUM1-1a), cultural thicket/cultural woodland (CUT1a/CUW1a), cultural woodland (CUW1c), and Willow Mineral Thicket Swamp (SWT2-2).

A total of 4.39 ha of cultural habitat will be impacted with the largest impact to cultural meadow communities including an area of 4.16 ha across the Dundas Street Station footprint. Overall, impacts resulting in the loss of vegetation within these cultural communities are considered to be minor. Cultural meadow is widespread and common throughout Ontario.

Impacts to 0.91 ha of Willow Mineral Thicket Swamp are expected. This swamp thicket is dominated by willows (*Salix* spp.), with Manitoba maple and black walnut observed occasionally. This thicket is associated with a tributary of Shoreacres Creek. Overall, impacts resulting in the loss of vegetation within this wetland community are considered to be minor to moderate. Where any surplus lands are available between the constructed station and the 407 ETR and suitable habitat is present, restoration or enhancement of wetland habitat should be undertaken.

Impacts to anthropogenically influenced lands will include the removal of 3.58 ha of agricultural lands and associated hedgerows, and this impact is considered to be minor.

### ***Appleby Line Station***

The preferred station footprint as presented on **Figure 3b** was modified and its footprint increased slightly in the southwest corner as compared to the inset presented in **Section 2.2.3.2**. Impacts associated with the construction of the Appleby Line Station will result in the removal of 4.19 ha of vegetation communities and anthropogenically influenced lands. Removals consist primarily of agricultural lands and associated hedgerows with a total removal of 3.51 ha, with 0.68 ha of cultural meadow (CUM1-1a). Overall, impacts resulting in the loss of anthropogenic lands and cultural meadow are considered to be minor. Cultural meadow is widespread and common throughout Ontario. It is expected that most plant species displaced and/or disturbed within the cultural communities due to the proposed construction will re-colonize available lands adjacent to the new right-of-way post-construction.

### ***Bronte Road Station and Bronte Road Bus Storage Yard***

The preferred station footprint as presented on **Figure 3b** was modified and its footprint has significantly decreased with the entire footprint now only east of the mineral shallow marsh community, as compared to the inset presented in **Section 2.2.3.2**. Impacts associated with the construction of the Bronte Road Station will result in the removal of 14.20 ha of vegetation communities and anthropogenically influenced lands. Removals consist primarily of cultural meadow (CUM1-1e) with a total of 13.33 ha to be impacted. Overall, impacts resulting in the loss of anthropogenic lands and cultural meadow are considered to be minor. Cultural meadow is widespread and common throughout Ontario. It is expected that most plant species displaced and/or disturbed within the cultural communities due to the proposed construction will re-colonize available lands adjacent to the new right-of-way post-construction.

Impacts include the removal of 0.50 ha of a Sugar Maple-Oak Deciduous Forest (FOD5-3d). With additional impacts associated with the runningway portion of the transitway, this entire forest will be removed. As previously noted, this community contains a variety of plant species including the regionally rare pointed broom sedge (*Carex scoparia*) and vegetation present included a range of young to mid-aged trees. Overall, impacts to this community are considered to be moderate. The restoration/enhancement of any suitable lands remaining south of the runningway and adjacent to those forest communities should be

carried out. If any excess or surplus lands are identified within the study area forest restoration should be undertaken.

Impacts to a Cattail Mineral Shallow Marsh (MAS2-1a) includes the removal of 0.04 ha of this community. With additional impacts associated with the runningway portion of the transitway, this entire wetland will be removed. This wetland is located along a very narrow, eroded channel that crosses agricultural fields that is likely supported by runoff/drainage. This meadow marsh community is considered widespread and common in Ontario, and impacts to this wetland are considered to be minor.

A Cattail Mineral Shallow Marsh (MAS2-1d) is located adjacent and east of the station. This marsh is associated with a Tributary of Fourteen Mile Creek and is complexed as part of the provincially significant North Oakville-Milton West Wetland Complex. Although the marsh is outside of the footprint of the Bronte Road Station and the bus storage yard, development close to adjacent lands may cause negative impacts. During detail design, design consideration should be given to mitigate negative impacts to this wetland.

Impacts of 0.33 ha to anthropogenically influenced lands will be to hedgerows associated with agricultural lands. This impact is considered to be minor.

#### ***Trafalgar Road Station***

Impacts associated with the construction of the Trafalgar Road Station will result in the removal of 5.26 ha of vegetation communities and anthropogenically influenced lands. Removals are primarily to agricultural fields and associated hedgerows with a total of 4.34 ha to be impacted. Minor impacts to cultural meadow (CUM1-1a) of 0.83 ha are also expected. Overall, impacts resulting in the loss of anthropogenic lands and cultural meadow are considered to be minor. Cultural meadow is widespread and common throughout Ontario. It is expected that most plant species displaced and/or disturbed within the cultural communities due to the proposed construction will re-colonize available lands adjacent to the new right-of-way post-construction.

A total of 0.09 ha of the Oak-Hardwood Deciduous Forest (FOD2-4a) will be impacted due to the Trafalgar Road Station. This impact is considered to be minor; however, additional impacts to this forest are associated with the runningway portion of the transitway. As a result, a total of 3.4 ha of this forest community will be removed. This Oak-Hardwood Deciduous Forest is contiguous with forest habitat that will remain south of the proposed runningway, which is within the Oakville-Milton Wetlands and Uplands Candidate ANSI. Overall, impacts to this forest community are considered to be moderate to high. During subsequent design phases, design refinements to minimize impacts should be undertaken, to the extent possible. Forest edge management is required to enhance newly created forest edges and to increase resilience against invasive species and windthrow. Also, the restoration/enhancement of any suitable, surplus lands within the study area should be undertaken.

#### ***Britannia Road Station***

Impacts associated with the construction of the Britannia Road Station will result in the removal of 2.31 ha of vegetation communities and anthropogenically influenced lands. Impacts include the removal of 1.60 ha of cultural meadow (CUM1-1a) and manicured areas. Cultural communities typically persist in areas that are subject to regular disturbance. Consequently, impacts to the cultural communities are considered to be minor. Cultural meadows are widespread and common throughout Ontario.

Impacts are expected to a Reed-canary Grass Meadow Marsh (MAM2-2j) with the removal of 0.66 ha of wetland along its eastern edge. There may be opportunities for the re-establishment and spread of similar wetland habitat between the runningway and the 407 ETR, as well as opportunity adjacent to the station.

Overall, impacts resulting in the loss of vegetation within this wetland community are considered to be minor to moderate.

#### ***Derry Road Station***

Impacts associated with the construction of the Derry Road Station will result in the removal of 3.73 ha of vegetation communities and anthropogenically influenced lands. Impacts include the removal of 3. ha of cultural meadow (CUM1-1c) and manicured areas. Cultural communities typically persist in areas that are subject to regular disturbance. Consequently, impacts to the cultural communities are considered to be minor. Cultural meadows are widespread and common throughout Ontario.

Impacts are expected to two wetland communities. A Reed-canary Grass Meadow (MAM2-2d) will be impacted along its eastern edge with impacts of 0.03 ha. Impacts to a Marsh Cattail Mineral Shallow Marsh and open aquatic (MAS2-1g and OAO) will result in its removal (0.09 ha). There may be opportunities for the re-establishment and spread of similar wetland habitat between the runningway and the 407 ETR, as well as opportunity adjacent to the station. The remaining impacts will result in the removal of 0.49 ha of hedgerow and manicured areas. Overall, impacts resulting in the loss of vegetation within two wetland communities are considered to be minor.

#### ***Lisgar GO Station***

Impacts associated with the construction of the Lisgar GO Station will result in the removal of 0.97 ha of vegetation communities and anthropogenically influenced lands. Impacts are to agricultural lands, and to a lesser extent, cultural meadow. Cultural communities typically persist in areas that are subject to regular disturbance. Consequently, impacts to the cultural communities are considered to be minor. Cultural meadows are widespread and common throughout Ontario.

#### ***Mississauga Road Station***

The preferred station footprint as presented on **Figure 3e** was modified and its footprint has decreased with a narrow section along Hereford Street removed, as compared to the inset presented in **Section 2.2.3.2**. Impacts associated with the construction of the Mississauga Road Station will result in the removal of 2.95 ha of cultural meadow (CUM1-1a) and manicured areas. Cultural communities typically persist in areas that are subject to regular disturbance. Consequently, impacts to the cultural communities are considered to be minor. Cultural meadows are widespread and common throughout Ontario.

### **3.2.3 Displacement of Rare, Threatened or Endangered Vegetation and Vegetation Communities**

A Fresh-Moist Sugar Maple-Black Maple Deciduous Forest (FOD6-4) was identified along the west side of Bronte Creek, north of the 407 ETR. This is a vulnerable community type, which is provincially ranked as S3. This community contained several conservative species. All of the other vegetation communities identified within the study area are considered to be widespread and common in Ontario and secure globally. As noted previously, two butternut trees and numerous seedlings were identified within the study area. The construction of the runningway will directly impact these butternut trees. During detail design a designated butternut health assessor will assess those butternut trees. It may be beneficial to collect branch/leaf/bud samples and have these sent to the MNRF Ontario Forest Research Institute for genetic testing to confirm these are not hybrid. Mitigation and/or permitting may be required to be undertaken later in the design process. No other plant species at risk were identified during the plant surveys undertaken throughout the study area in 2018 and 2019.

As noted previously, **22** plant species identified as rare in Peel and Halton Regions, were observed within several communities associated with the study area. Efforts will be made, where warranted, to locate

regionally rare plants that will be impacted due to the proposed 407 Transitway. Where possible, these plant species will be salvaged through transplanting into nearby vegetation communities with suitable habitat characteristics that will afford ongoing protection.

**Impacts to Designated Natural Areas**

The 407 Transitway spanning from west of Brant Street to west of Hurontario Street is planned to travel adjacent to/or near to several designated natural areas and Plan Policy Areas. These include three Provincially Significant Wetlands (PSW) and one Unevaluated Wetland; the North Oakville-Milton West PSW and the Drumquin unevaluated wetland are all over 120 m from the study area. There are several wetlands associated with the North Oakville-Milton East PSW that are within 120 m of the study area. Wetlands that are complexed with this PSW where direct impacts to small portions of those wetlands are expected are located within Segments 3, 4 and 5. Within Segment 5 immediately south of the alignment and east of Sixteen Mile Creek, direct impacts to a wetland within the Sugar Maple-Beech Deciduous Forest (FOD5-2) are very minor (0.004 ha). However, impacts due to forest removals may cause indirect impacts. Just west of Trafalgar Road still in Segment S5, several small wetland pockets are located within a forest to the south of the Oak-Hardwood Deciduous Forest (FOD2-4a). These wetlands will not be impacted directly, but forest removal may cause indirect wetland impacts.

**TABLE 10. IMPACTS TO DESIGNATED NATURAL AREAS AND PLAN POLICY AREAS**

Designated Natural Area / Plan Policy Area	Segment #	Total Area to be Impacted (ha)
<b>Designated Natural Areas</b>		
Zimmerman Valley Life Science ANSI	2 and 3	1.3
Trafalgar Moraine Earth Science ANSI	3	1.15
Sixteen Mile Creek Candidate Life Science ANSI	4	0.73
Oakville-Milton Wetlands and Uplands Candidate Life Science ANSI	5	0.11
North Oakville-Milton West Wetland Complex, Evaluated - Provincial	3, 4 and 5	0.053
<i>Designated Natural Areas Total</i>		<b>3.34</b>
<b>Plan Policy Areas</b>		
<b>Greenbelt Plan</b>		
Protected Countryside	1, 2 and 3	39.18
Urban River Valley	3, 4 and 5	2.57
<i>Sub-total</i>		<b>41.75</b>
<b>Niagara Escarpment Plan</b>		
Escarpment Natural Area	1	0.24
Escarpment Protection Area	1 and 2	0.74
<i>Sub-total</i>		<b>0.98</b>
<i>Plan Policy Areas Total</i>		<b>46.07</b>

**Designated Natural Features**

Five designated natural areas are present within the study area. Four Areas of Natural and Scientific Interest (ANSI) were identified, including the provincially significant Zimmerman Valley Life Science

and Trafalgar Moraine Earth Science ANSIs, and the candidate Sixteen Mile Creek and Oakville-Milton Wetlands and Uplands Life Science ANSIs.

Impacts to vegetation communities within the Zimmerman Valley Life Science ANSI, along Bronte Creek, are associated with runningway impacts in Segments 2 and 3. Impacted vegetation communities include a mineral open bluff, cultural meadow, cultural thicket, cultural woodland, deciduous forest and shallow wetland communities. Forested communities include a Fresh-Moist Sugar Maple-Black Maple Deciduous Forest (FOD6-4) associated with the Bronte Creek floodplain. This is a vulnerable community type provincially ranked as S3. Several regionally rare species and Butternut trees/seedlings were identified within this ANSI. Butternut trees are listed as Endangered under the *ESA 2007*. Mitigation should include tree fencing with filter cloth to minimize edge impacts along the construction limit.

Within the Trafalgar Moraine Earth Science ANSI within Segment S3, impacts will occur to a small portion of cultural meadow (CUM1-1c) and hedgerow (H), just east of Tremaine Road. These impacts are associated with the construction of the runningway.

Within the Sixteen Mile Creek Candidate Life Science ANSI within Segments 4 and 5, impacts will occur to a small portion of cultural meadow. As well, 0.62 ha of Sugar Maple- Oak Deciduous Forest (FOD5-3e) will be impacted within this ANSI where several regionally rare species were identified.

Just west of Trafalgar Road within Segment S5, the northern portion (2.6 ha) of an Oak-Hardwood Deciduous Forest (FOD2-4a) will be impacted by the runningway. This portion of forest is located outside of the Oakville-Milton Wetlands and Uplands Life Science Candidate ANSI, but is contiguous with forest to the south, which is within the ANSI where 0.11 ha of forest habitat will also be impacted. The removal of forest both outside and within the ANSI may cause indirect impacts to remaining forest habitat. These impacts will be mitigated to the extent possible. Mitigation should include tree fencing with filter cloth to minimize edge impacts to the extent possible, and edge management plantings.

Further to the west, west of Neyagawa Boulevard, the runningway is approximately 15 m to 30 m north of another forest community associated with the Oakville-Milton Wetlands and Uplands Life Science Candidate ANSI. No direct, inadvertent impacts shall occur to the forest, and indirect impacts should be minimized to the extent possible. Mitigation should include tree fencing with filter cloth to minimize edge impacts along the construction limit.

Within Segments 3 and 4 and 5, minor impacts are expected to wetland habitat within the North Oakville-Milton West Wetland Complex PSW. This includes impacts of 0.11 ha to meadow marsh and shallow marsh (MAM2-2e and MAS2-1d) habitat. As previously noted, the meadow marsh is likely additionally supported by runoff from the highway and it is expected that the wetland remnant would persist with wetland species colonizing suitable spaces between the 407 ETR and the runningway where runoff from infrastructure is expected to provide adequate conditions to support its continued existence. Impacts to the shallow marsh where the proposed infrastructure is immediately adjacent, may cause negative impacts. During detail design, design consideration should be given to mitigate negative impacts to this wetland, to the extent possible.

### **Plan Policy Areas**

Within the Greenbelt Plan Area, 39.18 ha of cultural, forest and wetland habitat will be impacted within Segments 1, 2 and 3. These impacts are within the Protected Countryside designation which includes the Greenbelt Natural Heritage System. This includes impacts along Bronte Creek. A total of 2.57 ha of similar habitat within Segments 3, 4, and 5 will be impacted within the Urban River Valley Area.

Watercourses across the study area located within this plan area include Fourteen Mile Creek and Sixteen Mile Creek.

Within the Niagara Escarpment Area, a total of 0.98 ha of cultural and wetland habitat will be impacted within Segments 1 and 2, associated with the Escarpment Natural Area and the Escarpment Protection Area (between Dundas Street and Walkers Line). Impacts are primarily to agricultural lands and cultural meadow habitat. Several meadow marsh and shallow marsh communities will also be impacted, these communities are typically supported by intermittent watercourses that bisect the 407 ETR, as well as by runoff from infrastructure.

Overall, the environmental protection/mitigation measures outlined will help maintain/enhance habitat within the Protected Countryside and the Urban River Valleys designations to ensure that the policies of the Greenbelt Plan will be adhered to at these features. Such measures will also help to support connections between the Natural Heritage System and the local, regional and broader natural heritage systems of southern Ontario.

Protection of vegetation communities within designated natural and plan policy areas is important to mitigate impacts to the extent possible. Protective measures including offsetting forest and wetland loss are discussed below.

### 3.2.4 Vegetation Community Offsets

Terrestrial and wetland impacts associated with the construction of the runningway portion of the 407 Transitway will result in the removal of 12.36 ha of forest and 14.12 ha of wetland. Impacts associated with the stations and the bus storage yard will result in the removal of 0.59 ha of forest and 1.73 ha of wetland. Total removals of 12.95 ha of forest habitat and 15.85 ha of wetland habitat have been calculated. During subsequent design phases, design refinements to minimize impacts to forest and wetland communities should be undertaken, to the extent possible. The removal of wetland and forest communities should be offset. The restoration/enhancement of any suitable lands that remain south of the transitway or on identified Protected Sites, should be undertaken. Where suitable habitat to restore wetland habitat is less than calculated removals, the restoration of forest habitat in lieu of wetland, should be considered. A total of 12 Protected Sites that are outside of the runningway, stations and the bus storage yard footprints have been identified and are presented on **Figures 3a to 3f**.

These include an area of 106.5 ha; however, existing forest habitat comprises approximately 33 ha where compensation opportunities would be limited. To the extent possible, forest compensation should be prioritized on lands adjacent to existing forest to increase/create interior habitat, to the extent possible. Where lands are identified for forest and wetland offsetting, no fill placement will be undertaken and plantings will be installed into natural, good quality soils. If planting for butternut under the ESA 2007 is required as determined during detail design, consideration should be given to planting pure butternut seedlings within forest restoration sites. However, such plantings must be installed in accordance with mitigation or overall benefit conditions as required under the ESA 2007, to be determined during detail design. Overall, butternut seedlings should be planted in an area for optimal establishment and growth. Where wetland restoration is undertaken bio-engineering may be required on lands that require augmentation to ensure wetland function. If during construction, additional forest or wetland habitat is impacted, suitable sites along the 407 Transitway will be identified and protected for additional offsetting to compensate for additional habitat loss.

There is potential for impacts to Bobolink and Eastern Meadowlark habitat based on the screening undertaken during this preliminary design phase. Protected Sites will also serve as areas to create/restore



suitable nesting and foraging habitat to benefit the species. Suitable compensation habitat requirements for Bobolink and Eastern Meadowlark areas under the ESA 2007, includes but is not limited to:

- the creation of grass dominated habitat;
- compensation areas must be larger than the SAR habitat that is damaged or destroyed by an activity;
- compensation areas must be a minimum of 4 ha in size; and,
- no area within the compensation area will measure less than 200 m in width.

Habitat should be restored as far back from roadways/highways as possible, and created/restored habitat should be relatively flat. Seeding will be undertaken with a suitable grass dominated seed mix that adheres to mitigation/overall benefit conditions required under the ESA 2007, as determined during detail design.

Three Protected Sites across the study area meet the criteria outlined above. The first site, east of Walkers Line and north of the 407 ETR covers an area of 54.3 ha including approximately 20 ha of existing forest (see **Figure 3a**). Associated agricultural/pasture lands have the potential to meet the above noted criteria, but would require clearing of two hedgerows including a portion of a hedgerow associated with a Tributary of Shoreacres Creek. The second Protected Site east of Walkers Line, also north of the 407 ETR covering an area of 25.7 ha including approximately 13.5 ha of existing forest (see **Figure 3a**). Associated agricultural/pasture lands in this Protected Site have the potential to meet the above noted criteria with the removal of a hedgerow. The third Protected Site is located east of Bronte Road, the Bronte Road Station, and the bus storage yard, south of the 407 ETR. It covers an area of 7.7 ha which is comprised of cultural meadow habitat (see **Figure 3b**).

If Protected Sites used for Bobolink and Eastern Meadowlark are considered for the purposes of fill during construction, a minimum of six inches and up to 1 m of topsoil shall be disked into the final graded surface, smoothed and seeded. However, fill sites should not negatively impact adjacent, existing habitat, and no fill will be placed within 5m to 10 m of an existing forest or wetland edge. If additional impacted habitat is identified based on species at risk surveys undertaken prior to construction, suitable sites along the 407 Transitway will be similarly identified and protected for additional SAR habitat offsets.

Restoration of suitable forest and/or wetland habitat should be undertaken at a compensation ratio to be determined through further discussion with regulatory agencies (e.g., MNRF, CVC), as part of implementing the project. As part of habitat restoration and/or enhancement, consideration for suitability should include:

- potential conditions for specific habitat function (e.g., suitability for wetland creation/restoration where variable or prolonged flooding conditions are possible for wetland species, etc.);
- habitat for species protected under the ESA 2007, if confirmed that the Transitway will impact existing SAR habitat and a permit is required for overall benefit;
- buffering capacity to protect existing vegetation communities;
- increasing species diversity;
- supporting/increasing habitat connectivity; and,
- improving habitat conditions to facilitate the movement of wildlife.

Impacts to wetland communities within the study area will be very small portions of primarily meadow marsh habitat. These wetlands are typically located along several watercourses that traverse the study area or along low-grade areas through cultural meadows, as well as adjacent to agricultural fields. These wetland vegetation communities include meadow and shallow marshes, and deciduous swamp that

provide valuable ecological functions such as flood mitigation, and habitat for more sensitive wildlife and plant species. It is expected that post-construction, new wetland areas will be created because of changes in drainage related to the construction of the 407 Transitway and its related components and this can, in part, mitigate for removals of similar wetland types. Additionally, edge management, which would include high-density plantings of robust, native wetland plant species, should be undertaken, with priority in areas associated with designated natural areas. Edge management plantings can mitigate impacts related to invasive species establishment/encroachment further into wetlands, and can increase local diversity. Other mitigation measures include the removal of dumped garbage, and the treatment of invasive species such as common reed.

Forest community impacts within the study area are typically related to the creation of new forest edges where complete forest removal has been avoided. Forest edge management is required to enhance forest edges and to increase resilience against invasive species and windthrow. This is especially important along newly created forest edges associated with the Zimmerman Valley Life Science ANSI, the Sixteen Mile Creek Candidate Life Science ANSI, and the Oakville-Milton Wetlands and Uplands Candidate ANSI.

Where restoration is undertaken across the study area as part of compensation, the contractor will be required to provide a warranty on planted materials to ensure that the newly planted material survives and fulfils the intended function. The inadvertent spread of aggressive or non-native plant species shall be appropriately managed. It is recommended that restoration plantings not be undertaken infill, but in areas with suitable soil conditions for sustained vegetation growth and health. Where these conditions cannot be met, soil amendments primarily incorporating/mixing suitable soils into the top 1.0 m of fill should be considered.

### **Riparian Habitat and Valleyland Management**

Riparian habitat should be retained at a minimum of 3 m to 5 m from the bank edge of any watercourse impacted during construction. This measure is expected to ensure bank stability, mitigate erosion, and mitigate negative impacts to aquatic habitat. Suitable tree protection fencing and erosion control fencing should be installed and regularly maintained. Restoration/enhancement of riparian habitat should be undertaken immediately following the completion of work in riparian zones. Suitable deep rooting graminoid, herbaceous and shrub species, with a variety of trees where suitable, should be installed to prevent streambank erosion and improve riparian conditions. Plant species selected will be native and/or non-invasive.

Where valleylands are impacted, the zone of construction impacts should be limited, and staging areas should be well outside of forested valleys. Suitable tree protection fencing and erosion control fencing should be installed and regularly maintained. Restoration of newly impacted edges should be undertaken, and methods for the enhancement of these areas should be carried out as outlined in the forest edge management section presented below. Plant species selected will be native and/or non-invasive.

The contractor will be required to provide a warranty on planted materials to ensure that the newly planted material survives and fulfils the intended function. The inadvertent spread of aggressive or non-native plant species shall be appropriately managed.

### **Forest Edge Management**

The removal of forest vegetation along existing forest edges or the removal of a portion of a forested feature that results in the exposure of a new forest edge will have several negative impacts along forest borders and within the forest interior. Some of the direct and indirect impacts as a result of newly exposed edges include:

- exposure of the retained vegetation to the effects of increased light, wind, and sun which results in decreased soil moisture;
- exposure to salt spray;
- reduced establishment of shade tolerant plant species and an overall reduction in plant species richness and abundance;
- increased invasion/spread of aggressive non-native plant species;
- loss of native seedbank;
- decreased presence of interior habitat;
- exposure of “edge” trees to windthrow;
- changes in wildlife diversity and abundances;
- destabilization of landforms composed of unconsolidated material and/or soil compaction; and
- changes to hydrology.

Forest edge management in accordance with the TRCA *Forest Edge Management Plan Guidelines* (2004) is recommended at forest communities, including deciduous and coniferous forests and deciduous and thicket swamps across the study area. Where new forest edges are exposed, forest management techniques will be implemented to mitigate the associated impacts to forest communities. As part of the forest edge management, mitigation measures will include, but not be limited to the following:

- Planting of appropriate native trees, shrubs and ground flora, which shall be undertaken as soon as possible following vegetation removals. Plantings along the disturbed forest edges will provide a protective buffer. Newly exposed forest edges become exposed to a greater potential for aggressive and invasive species infiltration further into the forest interior causing greater impacts. Micro-habitat conditions are also altered due to a greater incident of light penetrating further into the forest resulting in decreased soil moisture and increased windthrow. Plant species used within the buffer shall be somewhat similar to those in the adjacent habitat and be non-invasive in nature.
- Grading within areas where edges will be newly created shall be designed to meet existing grades a minimum of 3 m away from the tree drip-line.
- Compaction of soils on lands immediately adjacent to the newly exposed forest edge will be minimized to the extent possible. Construction activities can result in cut roots, and soil compaction due to re-grading and fill placement. Cut tree roots can reduce a tree’s capacity to uptake and transfer water and nutrients, and soil compaction can result in a decrease in air spaces within the soil, which can reduce the infiltration capacity of the soil, limits soil oxygen and limits root penetration. Decomposition efforts and methodology shall be site specific. Where decomposition is required, it shall extend to a minimum depth of approximately 25 cm.
- Drainage patterns adjacent to newly created edges shall be maintained to avoid changes in soil moisture, this is especially important around wetland areas and forest communities with substrates that maintain increased moisture capacity.
- Suitable tree protection fencing should be installed and regularly maintained along any newly exposed forest edges.
- The spread/invasion of aggressive plant species must be immediately mitigated. The inclusion of filter fabric along all tree protection fencing, to enhance protection from the spread of invasive, aggressive plant species, should be undertaken.

- The contractor will be required to provide a warranty on planted material to ensure that the newly planted material survives and fulfils the intended function. The inadvertent spread of aggressive or non-native plant species shall be appropriately managed.

Prior to construction, forest edge management will be considered for those communities where forest edge management is recommended.

### **Invasive Species Management**

Efforts to control non-native and invasive plant species that have become established, as well as prevent the establishment of new non-native and invasive plant species at a minimum should include the following:

- where there are dense patches of common buckthorn, swallow-wort (*Cynanchum rossicum*), common reed or garlic mustard, Canada thistle (*Cirsium arvensis*), Russian or Autumn olive (*Elaeagnus angustifolia* and *E. umbellata*), Japanese knotweed (*Fallopia japonica*) the appropriate removal and control of these species by a qualified specialist should be undertaken. Swallow-wort, Canada thistle, common reed, common buckthorn and Japanese knotweed are particularly invasive. These species establish dense stands in meadow habitat but can also invade into forested sites displacing numerous native species. Any emerging or established populations observed should be effectively treated. Treatment of these species may include two or three applications of herbicide, over time, with the use of foliar-applied herbicides when the plants are actively growing. With common reed, only a herbicide formulation that is approved for aquatic use shall be used. Herbicide treatment should be used in conjunction with cutting or mowing to also mitigate spread by seed. Invasive species management is particularly important where restoration and/or enhancement is undertaken as part of supporting restoration trajectories/objectives;
- minimize the exposure of bare soil, where bare soil must persist over a period of time these should be planted with a non-invasive annual cover crop for an interim period; and
- no non-native and invasive ornamentals plants should be used for landscaping (e.g., Norway maple, purple loosestrife, Japanese knotweed, Japanese honeysuckle, etc.).

### **Planting Plans**

Detailed planting plans should be developed prior to construction once areas identified for restoration have been determined in consultation with the respective agencies. It is recommended that the planting of forest and wetland habitat be undertaken with the appropriate native and non-invasive plant species that will be presented on site-specific plans to be developed by an experienced landscape architect/ecologist. At a minimum, planting plans will show the following:

- detailed maps of the planting locations along with the respective allocations of tree, shrub, herbaceous and grass species to be planted inclusive of species, ratio of plantings or abundances, and stock size; and
- a description of the best management practices that are to be followed in the planting and tending of these sites for a minimum of five to 10 years following the initial planting stage. In particular, management will need to be undertaken for those invasive / aggressive plant species.

### **Construction Best Management Practices**

At a minimum, the following mitigation measures should be implemented during construction:

- the inclusion of filter fabric along all tree protection fencing, to enhance protection from the spread of invasive, aggressive plant species;

- during construction implement methods for the short-term stabilization of soils, including but not limited to coir fibre or a suitable alternative, as required;
- additionally, vegetation cover will be used to protect any exposed surfaces in accordance with OPSS 804 Construction Specification for Seed and Cover;
- topsoil from stockpiles to be in accordance with OPSS 802 Construction Specification for Topsoil;
- old field seed mix and mulching or erosion control blanket (in accordance with NSSP-Erosion Control Blanket) will be placed in areas of soil disturbance to provide adequate slope protection and long-term slope stabilization; and
- tree protection to be in accordance with OPSS 801(Construction Specification for the Protection of Trees).

The 407 Transitway will cross three large valleylands associated with Bronte Creek, Sixteen Mile Creek and the Credit River. At these three crossing locations, consideration shall be given to providing an access management plan to minimize encroachment into the stream valley to the extent possible.

### **3.3 Wildlife and Wildlife Habitat**

Implementation of the 407 Transitway from west of Brant Street to west of Hurontario Street has the potential to result in impacts to wildlife and wildlife habitat including:

- displacement of wildlife and wildlife habitat;
- barrier effects on wildlife passage;
- wildlife/vehicle conflicts;
- wildlife passage considerations;
- disturbance to wildlife from noise, light and visual intrusion;
- potential impacts to migratory birds; and,
- displacement of rare, threatened or endangered wildlife or significant wildlife habitat.

As a result of the proposed development of the Transitway corridor, there is the potential for disturbance/destruction to wildlife and wildlife habitat. However, the study area has been subject to extensive disturbance from existing highway infrastructure, residential/commercial/industrial development and agricultural practices. As such, most species residing in habitats within or directly adjacent to the right-of-way are tolerant of anthropogenic disturbances. However, provisions should be developed to ensure that the areas containing more sensitive wildlife habitat are avoided to the extent possible.

Large wildlife movement or passage corridors were identified in the study area. The existing large bridge structures present within the study area offer significant opportunities for wildlife passage. No modification/replacement of any of these structures are proposed within the study area and any new structures needed for the Transitway should be constructed of similar dimensions. As a result, wildlife movement through the study area will be maintained. However, provisions should be developed to ensure that the Contractor does not block or prohibit wildlife access to culverts/bridge structures and the passage corridors during construction.

A number of bird species identified within the study area are offered protection under the MBCA. Additional species protected under the MBCA are expected to breed within the study area. The MBCA prohibits the killing, capturing, injuring, taking or disturbing of migratory birds (including eggs) or damaging, destroying, removing or disturbing of nests. Because migratory bird species were documented (through secondary sources) within the study area, provisions should be developed to ensure all activities associated with the Transitway works are in compliance with the MBCA.

Development of the Transitway corridor has the potential to impact wildlife species at risk and species at risk habitat. Surveys have been undertaken to determine the potential for wildlife species at risk presence within the study area. A total of 28 wildlife species at risk have been recorded through field investigations, secondary source data, or identified as having the potential to be found in or near the study area. Many of these wildlife species at risk are regulated under the Ontario ESA and/or the Canada SARA. Targeted species-specific field investigations during the appropriate timing window is necessary to confirm whether these species and their habitat are present, and to determine whether any additional wildlife species at risk and species at risk habitat are present in the study area. Environmental protection/mitigation measures to protect species at risk and their habitat should be developed later in the design process.

### 3.3.1 Runningway Impacts

A discussion of the impacts along the runningway segments is provided below

#### ***Segment S1: West of Brant Street to East of Dundas Street***

Much of the habitat found within this segment consists of cultural meadow/thicket/woodland, deciduous forest, hedgerow, manicured lawns or active agricultural lands. Additionally, there are several small seasonal watercourses also present, including Tuck Creek, Rambo Creek and tributary, and tributary of Shoreacres Creek. The watercourse valleylands may provide amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife. This segment contains the Nelson Slope Forest, which is a regionally significant life science area of natural and scientific interest (ANSI). With the exception of the ANSI and aquatic features, no significant effects on wildlife or wildlife habitat are expected. Limited negative effects are anticipated as most habitats identified within the study area consist of previously modified/disturbed wildlife habitat with low habitat diversity and limited habitat potential, due to extensive disturbance from existing highway infrastructure, residential/commercial/industrial development and agricultural practices. Efforts should be made to minimize impacts to habitats and maintain opportunity for wildlife movement through the Nelson Slope Forest ANSI.

#### ***Segment S2: East of Dundas Street to East of Appleby Line***

The runningway in this segment will largely affect cultural meadow, deciduous forest, manicured land, agricultural habitat types and small seasonal watercourses. These habitats were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences. Along with these vegetation communities, this segment contains tributaries of Appleby and Sheldon Creeks. Deciduous forest habitats in this segment may also function as important wildlife habitat because of the large, connective nature of the natural heritage features. Limited negative effects are anticipated as habitats identified within this segment consist almost entirely of previously modified/disturbed wildlife habitat with low habitat diversity and limited habitat potential. Implementation of mitigation measures such as forest edge management and vegetation community offsets are recommended. Furthermore, opportunity for wildlife movement through these natural heritage features should be maintained.

#### ***Segment S3: East of Appleby Line to East of Tremaine Road***

This segment is comprised of cultural meadow, deciduous forests, meadow/shallow marsh, agricultural and manicured lands. Along with these vegetation communities, this segment contains areas of natural

and scientific interest (ANSI) and candidate ANSI: Trafalgar Moraine ANSI, Earth Science (Provincial) and Oakville-Milton Wetlands and Uplands Candidate ANSI, Life Science (Provincial). The Oakville-Milton Wetlands and Uplands Life Science Candidate ANSI supports a diversity of 115 vegetation communities, including rare wetland communities such as buttonbush thicket, bur oak and swamp white oak swamp; a high concentration of 59 significant plant species and 46 significant faunal species are also supported (Natural Heritage Information Centre 2011). Trafalgar Moraine ANSI, Earth Science (Provincial), is an environmentally sensitive area which can be highly impacted by any activity that alters its natural contours through grading and/or covering of the landforms (Ministry of Natural Resources 2006c). Additionally, tributaries of the high quality natural heritage feature, Fourteen Mile Creek, are present throughout the segment. Fourteen Mile Creek valleylands and natural features associated with Trafalgar Moraine, and Oakville-Milton Wetlands and Uplands provide higher quality natural heritage features and opportunity for wildlife movement across the local landscape. Limited negative effects are anticipated as habitats identified within the study area consist almost entirely of previously modified/disturbed wildlife habitat with low habitat diversity and limited habitat potential. Efforts should be made to minimize impacts to habitats and maintain opportunity for wildlife movement through the Tributary of Fourteen Mile Creek, Trafalgar Moraine and Oakville-Milton Wetlands and Uplands.

***Segment S4: East of Tremaine Road to East of Bronte Road***

The segment of runningway between these two stations consists mainly of cultural vegetation communities bordering agricultural and manicured lands. Deciduous forest, and cultural meadow/thicket communities are associated with Fourteen Mile Creek and Sixteen Mile Creek. Sixteen Mile Creek Candidate ANSI, (Life Science Provincial) is also present, which supports a high concentration of plant species and several vegetation communities that are provincially and regionally rare (Natural Heritage Information Centre 2011). Limited negative effects are anticipated as habitats identified within the study area consist almost entirely of previously modified/disturbed wildlife habitat with low habitat diversity and limited habitat potential. Efforts should be made to minimize impacts to habitats in the Fourteen Mile Creek, Sixteen Mile Creek and Sixteen Mile Creek Candidate ANSI, as well as to maintain opportunity for wildlife movement through these features.

***Segment S5: East of Bronte Road to East of Trafalgar Road***

The majority of the habitat in this segment consists largely of agricultural lands and cultural meadow communities, as well as deciduous forests, manicured lands, hedgerow, and storm ponds. However, this segment also consists of several watercourse crossings of East Sixteen Mile Creek and Joshua's Creek, which also feed into the North Oakville-Milton East provincially significant wetland (PSW) and Oakville-Milton Wetlands and Uplands Candidate ANSI (Life Science Provincial). Several other small PSW's are also present throughout the segment within agricultural and deciduous forest communities. Sixteen Mile Creek and Oakville-Milton Wetlands and Uplands (Candidate Areas of Natural and Scientific Interest) are present throughout the segment area as well. Sixteen Mile Creek is an environmentally significant area (ESA) which supports a high diversity of plant species. The North Oakville-Milton East PSW supports 45 significant species, including 41 locally rare plant species, four regionally rare plant species and the locally rare Northern Ribbon Snake. No significant effects on wildlife and wildlife habitat are expected to occur given the level of disturbance present within natural heritage features. With regard to the East Sixteen Mile Creek, Oakville-Milton Wetlands and Uplands, and North Oakville-Milton East PSW, several habitat types will be impacted, but these removals will be along edges previously disturbed by the creation of the 407 ETR corridor. As such, limited negative effects are anticipated; however, efforts should be made to minimize impacts to habitats in these natural heritage features, and to maintain opportunity for wildlife movement through these natural heritage features.

***Segment S6: East of Trafalgar Road to East of Lower Base Line***

Wildlife habitat in this segment consists almost entirely of cultural meadows/woodlands, agricultural lands, hedgerow and manicured grass. Additionally, there are some deciduous forest lands, mineral deciduous swamps, reed-canary grass and mineral meadow marshes. This segment contains a very high level of disturbance and few natural heritage features which provide habitat for wildlife, with the exception of watercourses from tributaries of Joshua's Creek. Across Segment S6, impacts to wildlife are minimized because much of the runningway will be constructed underground (tunnel). Where below ground works will be conducted, there is potential for localized impacts to wildlife that may result from noise and/or vibration. However, if such impacts are observed at the surface these are expected to be minimal and temporary in nature. When such works are interrupted day to day and upon the completion of construction, wildlife are expected to return. Where impacts will occur above ground, no significant effects on wildlife and wildlife habitat are expected given the level of disturbance present within natural heritage features. However, efforts should be made to minimize impacts to habitats in Joshua's Creek watercourses, and to maintain opportunity for wildlife movement through this natural heritage feature.

***Segment S7: East of Lower Base Line to North of Britannia Road***

Most of the land within this segment is comprised of deciduous forests, cultural meadow/thicket/savannah, agricultural/manicured lands, hedgerow and storm ponds. Tributaries of East Sixteen Mile Creek are also present throughout the segment area, which feed into open aquatic vegetation communities. The East Sixteen Mile Creek is expected to function as a locally significant wildlife movement corridor because of the linear natural areas associated with the feature in an otherwise highly disturbed landscape. These features do experience disturbance and fragmentation resulting from extensive agricultural lands and nearby roads. Efforts should be made to avoid and/or minimize impacts to East Sixteen Mile Creek tributaries and maintain their function as wildlife corridors.

***Segment S8: North of Britannia Road to North of Derry Road***

The majority of the habitat in this segment consists of agricultural/manicured lands, hedgerow, cultural meadows/thicket/woodlands and deciduous forests. The segment is also comprised of several aquatic features, including shallow marsh, thicket swamp, stormwater management ponds, as well as the more sensitive tributaries of East Sixteen Mile Creek. As mentioned in Segment S7, the East Sixteen Mile Creek acts as a high quality natural heritage feature within this segment and can provide important north-south movement opportunity/linkages for wildlife within, or in the immediate vicinity of the study area. The swamp features may function as amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife. However, these habitats were found to contain a wildlife assemblage which is considered tolerant to human disturbance/anthropogenic influences. Limited negative effects are anticipated as habitats identified within the study area consist almost entirely of previously modified/disturbed wildlife habitat with low habitat diversity and limited habitat potential. Efforts should be made to minimize impacts to habitats within East Sixteen Mile Creek valleyland and swamp features, as well as maintain opportunity for wildlife movement.

***Segment S9: North of Derry Road to West of Heritage Road***

This segment contains wildlife habitat primarily within vegetation communities such as cultural meadow, hedgerow, agricultural and manicured fields. One of the agricultural fields is listed as a protected site. Aquatic features are also present, such as shallow marsh, meadow marsh, reed-canary grass mineral meadow marsh, and cattail mineral shallow marsh, which are associated tributaries of East Sixteen Mile Creek. As mentioned in Segment S7, the East Sixteen Mile Creek is a high-quality natural heritage feature within this segment and can provide important north-south movement opportunity/linkages for wildlife within, or in the immediate vicinity of the study area. The wetland and swamp features may also function as amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife. Most of Segment S9 will be constructed underground (tunnel) so impacts to wildlife and wildlife habitat will be minimal. Where below ground works will be conducted, there is potential for localized impacts to wildlife that may result



from noise and/or vibration. However, if such impacts are observed at the surface these are expected to be minimal and temporary in nature. When such works are interrupted day to day and upon the completion of construction, wildlife are expected to return. Above ground impacts are associated with habitats that consist almost entirely of previously modified/disturbed wildlife habitat with low habitat diversity and limited habitat potential, limited negative effects are anticipated; however, efforts should be made to minimize impacts to habitats in these natural heritage features, and to maintain opportunity for wildlife movement through this natural heritage feature.

***Segment S10: West of Heritage Road to East of Creditview Road***

A change to this segment has been made since the initial analysis of Alignment Option 1 and Alignment Option 2. This was due to new information received regarding existing archaeological potential south of the 407 ETR around the Credit River area. The change consists of crossing the Credit River on the north side of 407 ETR. The impacts to the new alignment are presented here. The figure below presents the new preferred alignment for this segment.



Much of the habitat within this segment consists of cultural meadow/woodland/thicket communities, agricultural or manicured land and some storm ponds. Reed-canary grass mineral meadow marsh, cattail mineral shallow marsh and willow mineral deciduous swamp is also present, as the segment contains watercourses from Mullet Creek, Levi’s Creek and the Credit River. The watercourses and marsh meadow communities may contain higher quality wildlife habitat, as it may function as amphibian breeding habitat and habitat for aquatic or semi-aquatic wildlife. With the exception of the aquatic features, no significant effects on wildlife or wildlife habitat are expected. Limited negative effects are anticipated as most habitats identified within the study area consist of previously modified/disturbed wildlife habitats with low habitat diversity and limited habitat potential.

***Segment S11: East of Creditview Road to West of Hurontario Street***

The majority of the habitat in this segment consists largely of cultural meadow communities, as well as cultural woodland/thicket, manicured lands and agricultural fields. This segment also contains watercourse crossings including the Credit River with associated willow mineral deciduous swamp north of the 407 ETR, and Fletcher’s Creek with associated reed-canary grass mineral meadow marsh and cattail mineral shallow marsh, south of the 407 ETR. Most of the runningway in Segment S11 will be constructed underground (tunnel). Where such works will be conducted, there is potential for localized impacts to wildlife that may result from noise and/or vibration. However, if such impacts are observed at the surface these are expected to be minimal and temporary in nature. When such works are interrupted

day to day and upon the completion of construction, wildlife are expected to return. Where impacts will occur above ground, no significant effects on wildlife and wildlife habitat are expected to occur given the level of disturbance present within natural heritage features within Segment S11. However, efforts should be made to minimize impacts to habitats in the aquatic natural heritage features, and to maintain opportunity for wildlife movement through these watercourses.

### 3.3.2 Station Impacts and The Bronte Road Bus Storage Yard

A discussion of the impacts at the stations and the bus storage yard is provided below.

#### ***Dundas Street Station***

Construction of the Dundas Street Station will result in the removal of portions of cultural meadow communities. This station will also impact watercourses from Tuck Creek and a tributary of Shoreacres Creek. Impacts to these communities are considered to be minor based on the wildlife and wildlife habitat assemblage identified at the station location and the availability of similar habitat types in the immediate vicinity.

#### ***Appleby Line Station***

Construction of the Appleby Line Station will result in the disturbance of agricultural lands, hedgerow, stormwater management ponds and cultural meadow communities. A tributary of Sheldon Creek also intersects Appleby Line Station construction zone. Impacts to these communities are considered to be minor based on the wildlife and wildlife habitat assemblage identified at the station location and the availability of similar habitat types in the immediate vicinity.

#### ***Bronte Road Station***

Impacts associated with the construction of the Bronte Road Station will occur to cultural meadow communities, agricultural lands and hedgerow. Cultural meadow communities containing PSWs (North Oakville-Milton West Wetland Complex) and watercourses from Fourteen Mile Creek and tributaries may be impacted with construction as well. This station location contains a high level of disturbance and some natural heritage features which provide habitat for wildlife. As a result, no significant effects on wildlife and wildlife habitat are expected to occur given the level of disturbance present within natural heritage features; however, efforts should be made to avoid impact to these natural features during construction.

#### ***Bronte Road Bus Storage Yard***

The construction of the bus storage yard will result in disturbance to cultural meadow communities and hedgerow. This location contains a high level of disturbance and natural heritage features which provide habitat for wildlife.

#### ***Trafalgar Road Station***

The construction of the Trafalgar Road Station will result in the disturbance of cultural meadow, deciduous forest, agricultural, hedgerow and manicured communities. This station is situated immediately east of the Oakville-Milton Wetlands and Uplands Candidate ANSI, which provides important habitat for wildlife. Wildlife habitat within deciduous forest communities situated in this natural feature, containing provincially significant wetlands, can possibly be impacted during construction. However, the Trafalgar Road Station is largely fragmented from the Oakville-Milton Wetlands and Uplands feature. This station location contains a high level of disturbance and few natural heritage features which provide habitat for wildlife. As a result, no significant effects on wildlife and wildlife habitat are expected to occur given the level of disturbance present within natural heritage features.

***Derry Road Station***

Impacts associated with the construction of the Derry Road Station will occur to cultural meadow and deciduous forest communities. Aquatic features associated with East Sixteen Mile Creek, such as shallow marsh vegetation communities, will be impacted as well. This station location contains a high level of disturbance and few natural heritage features which provide habitat for wildlife. As a result, no significant effects on wildlife and wildlife habitat are expected to occur given the level of disturbance present within natural heritage features; however, efforts should be made to avoid impact to these natural features during construction.

***Lisgar GO Station***

Impacts associated with the construction of the Lisgar GO Station will occur to cultural meadow and manicured communities. However, the site largely consists of an existing parking lot. This station location contains a high level of disturbance and few natural heritage features which provide habitat for wildlife. As a result, no significant effects on wildlife and wildlife habitat are expected to occur given the level of disturbance present within natural heritage features; however, efforts should be made to avoid impact to these natural features during construction.

***Mississauga Road Station***

Impacts associated with the construction of the Mississauga Road Station will occur to cultural meadow communities, manicured land, and stormwater management ponds. This station location contains a high level of disturbance and few natural heritage features which provide habitat for wildlife, with the exception of the watercourse crossing from Levi's Creek. As a result, no significant effects on wildlife and wildlife habitat are expected to occur given the level of disturbance present within natural heritage features.

### 3.3.3 Displacement of Rare, Threatened or Endangered Wildlife or Significant Wildlife Habitat

A total of 19 wildlife species at risk have been recorded within the vicinity of the study area based on secondary source data, and an additional seven wildlife species at risk have been identified as having the potential to be found within the study area. Five species at risk were confirmed in the study area by LGL during 2018 and 2019 field investigations: Western Chorus Frog; Eastern Wood Pewee; Barn Swallow; Bobolink; and, Eastern Meadowlark. The following sections provide a brief review of each species' status, the results of field surveys undertaken, and the potential impacts to the species at risk and their populations as a result of the 407 Transitway project.

#### **Western Chorus Frog**

Western Chorus Frog (Great Lakes/St. Lawrence Population) is regulated as 'Threatened' under the SARA, but the species has no designation and is not regulated under the ESA. Western Chorus Frogs were identified at several anuran breeding stations during field investigations. No permitting is anticipated as this species is not regulated under the ESA.

#### **Jefferson Salamander**

Jefferson Salamander is regulated as 'Endangered' under the ESA and the SARA. The Jefferson X Blue-spotted Salamander, Jefferson genome dominates hybrid is also afforded protection under the ESA. The Jefferson Salamander (including hybrid populations) is generally associated with deciduous forest habitats. This species lives under leaf-litter and logs and is generally encountered when they move to vernal pools to breed in the early spring. Suitable habitat for Jefferson Salamander may include deciduous forest habitats that were identified at several sites across the study area. However, no habitat for this species was found during field investigations conducted in 2018 and 2019. No habitat is anticipated for removal from the construction of the transitway. No permitting is anticipated for this species.

#### **Milksnake**

Milksnake was formerly listed as 'Special Concern' under the ESA and SARA; however, this species has recently been removed from the SARO list and is not a regulated species (Endangered or Threatened) under the ESA. Milksnake is found in a wide variety of habitats. This species is known to inhabit areas heavily disturbed by humans (e.g., farmland, urban parks and residential areas). Habitats that could be suitable to support Milksnake were found across much of the study area. Field investigations conducted in 2018 and 2019 did not identify this species. No permitting is anticipated as this species is not regulated under the ESA.

#### **Timber Rattlesnake**

Timber Rattlesnake is listed as 'Extirpated' under both the ESA and SARA. This species has been considered extirpated from Ontario for more than 50 years. Field investigations conducted in 2018 and 2019 did not identify this species. No permitting is anticipated for this species.

#### **Common Five-lined Skink (Southern Shield population)**

Common Five-lined Skink (Southern Shield population) is regulated as 'Special Concern' under the ESA and SARA (Great Lakes/ St. Lawrence population). The Carolinian population of this species ('Endangered' under SARA and SARO) is largely restricted to dunes, open woods or savannas with sandy substrates. No habitat considered suitable to support this species is found within the study area. Field investigations conducted in 2018 and 2019 did not identify this species. No permitting is anticipated for this species.

### **Snapping Turtle**

Snapping Turtle is listed as ‘Special Concern’ under the ESA and SARA; however, this species is not regulated (‘Endangered’ or ‘Threatened’) under the ESA. As previously noted, despite this species not being documented within the study area, field investigations have concluded that Snapping Turtle have the potential to be present in a variety of aquatic habitats identified. No permitting is anticipated as this species is not regulated under the ESA.

### **Common Nighthawk**

Common Nighthawk is listed as ‘Special Concern’ under the ESA and ‘Threatened’ under the SARA; however, this species is not a regulated species (‘Endangered’ or ‘Threatened’) under the ESA. As previously noted, field investigations have concluded that Common Nighthawk has the potential to be present within a wide range of open, vegetation-free rural and urban habitats such as forest clearings, grasslands, open forests, and rocky outcrops; they may also nest on flat gravel rooftops. However, no Common Nighthawk were identified during LGL’s 2018 and 2019 breeding bird surveys. No permitting is anticipated as this species is not regulated under the ESA.

### **Chimney Swift**

Chimney Swift is regulated as ‘Threatened’ under the ESA and SARA. Habitats which have the potential to support Chimney Swift were found where deciduous habitat communities were identified within the project lands. However, breeding bird surveys conducted in 2018 and 2019 did not identify this species. Therefore, no permitting is anticipated for this species.

### **Eastern Wood Pewee**

Eastern Wood Pewee is listed as ‘Special Concern’ under the ESA; however, this species is not a regulated species (‘Endangered’ or ‘Threatened’) under the ESA. The Eastern Wood Pewee is listed as ‘Special Concern’ under SARA. This species was identified at several breeding bird stations (9-2019, 5-2019, 8-2019, 10-2019, 17-2019, 19-2019, 21-2019, 36-2019) during surveys conducted in 2019 (see Figures 2a-2f). Generally, observations of this species were associated with woodland edges. No permitting is anticipated as this species is not regulated under the ESA.

### **Bank Swallow**

Bank Swallow is listed and is regulated as ‘Threatened’ under the ESA. There is potential for suitable Bank Swallow nesting habitat at open bluffs in the Bronte Creek and Sixteen Mile Creek valleys. In addition, no Bank Swallow were identified during LGL’s 2018 and 2019 breeding bird surveys. Therefore, no permitting is anticipated for this species.

### **Barn Swallow**

Breeding Bird Atlas data for areas within the vicinity of the study area also contained records (dated from 2001-2005) for Barn Swallow. MNRF confirmed that Barn Swallow has the potential to be found in the vicinity of study area. Barn Swallow is regulated as ‘Threatened’ under the ESA and under SARA. This species was identified at several breeding bird stations during surveys conducted in 2018 and 2019. However, most observations of this species were limited to foraging individuals, often over SWM ponds, agricultural fields or meadows. Confirmed breeding colonies were identified at several locations across the lands surveyed (see Appendix C). However, each breeding colony identified was located outside of the transitway alignment and station locations. Breeding colonies identified were typically associated with barns or other outbuildings within agricultural settings. This species was documented during field investigations at stations 5-2018, 6-2018, 7-2018, 10-2018, 11-2018, 13-2018, 16-2018, 17-2018, 18-2018, 19-2018, 1-2019, 2-2019, 8-2019, 14-2019, 15-2019, 23-2019, 25-2019, 30-2019, 30-2019, 31-2019, 33-2019, 34-2019, 35-2019, 40-2019 (Figures 2a-2f and Appendix C). As such, no permitting is anticipated for this species.

### **Canada Warbler**

Canada Warbler is listed as ‘Special Concern’ under the ESA; however, this species is not a regulated species (‘Endangered’ or ‘Threatened’) under the ESA. The Canada Warbler is listed as ‘Threatened’ by COSEWIC and under the SARA. The Canada Warbler breeds in a variety of deciduous and coniferous wooded habitats, particularly those that contain a dense understory of shrubs or other vegetation. Habitat considered suitable to support Canada Warbler was identified (through air-photo analysis) where wooded areas exist; however, ground-truthing is required to confirm the suitability of potential habitat areas. Breeding bird surveys conducted in 2018 and 2019 did not identify this species. No permitting is anticipated as this species is not regulated under the ESA.

### **Golden-winged Warbler**

Golden-winged Warbler is regulated as ‘Threatened’ under the SARA. The Golden-winged Warbler is listed in Ontario as ‘Special Concern’ under the *ESA 2007*. The Golden-winged Warbler nests in areas with young shrub growth surrounded by mature forest communities, locations that have experienced disturbance, such as field edges, hydro or utility corridors. Habitat that may be considered suitable to support Golden-winged Warbler was identified (through air-photo analysis) where open-county habitat borders forest communities; however, ground-truthing is required to confirm the suitability of potential habitat areas. Breeding bird surveys conducted in 2018 and 2019 did not identify this species. No permitting is anticipated for this species.

### **Grasshopper Sparrow**

Grasshopper Sparrow is listed as ‘Special Concern’ under the ESA; however, this species is not a regulated species (‘Endangered’ or ‘Threatened’) under the ESA. The Grasshopper Sparrow is listed as ‘Special Concern’ by COSEWIC and under the SARA. The Grasshopper Sparrow nests in open grassland, hayfields and pastureland. Habitat that may be considered suitable to support Grasshopper Sparrow was identified (through air-photo analysis) where open-county habitat exists; however, ground-truthing is required to confirm the suitability of potential habitat areas. Breeding bird surveys conducted in 2018 and 2019 did not identify this species. No permitting is anticipated as this species is not regulated under the ESA.

### **Peregrine Falcon**

Peregrine Falcon is listed as ‘Special Concern’ under the ESA and SARA; however, this species is not a regulated species under either act. Historically, the Peregrine Falcon nested almost exclusively on rocky ledges near waterbodies; however, this species now nests on tall building ledges in large cities. Habitat that may be considered suitable to support Peregrine Falcon was identified (through air-photo analysis) where tall building ledges are found; however, ground-truthing is required to confirm the suitability of potential habitat areas. Breeding bird surveys conducted in 2018 and 2019 did not identify this species. No permitting is anticipated as this species is not regulated under the ESA.

### **Red-headed Woodpecker**

Red-headed Woodpecker is listed as ‘Special Concern’ under the SARO List; however, this species is not a regulated species (‘Endangered’ or ‘Threatened’) under the ESA. This species is regulated as ‘Threatened’ under the SARA. The Red-headed Woodpecker lives in open woodland and woodland edges, and is often found in parks, golf courses and cemeteries. These areas typically have many dead trees, which the bird uses for nesting and perching. Habitats which could be suitable to support the Red-headed Woodpecker were generally absent from the study area; however, ground-truthing is required to confirm the suitability of potential habitat areas. Breeding bird surveys conducted in 2018 and 2019 did not identify this species. No permitting is anticipated as this species is not regulated under the ESA.

### **Least Bittern**

Least Bittern is regulated as ‘Threatened’ under the ESA and SARA. Least Bittern are typically found in wetland communities, particularly large contiguous tracts of coastal wetland habitat. No habitat considered suitable to support this species was identified within the study area. Breeding bird surveys conducted in 2018 and 2019 did not identify this species. No permitting is anticipated for this species.

### **Louisiana Waterthrush**

Louisiana Waterthrush is regulated as ‘Threatened’ under the ESA and SARA. This species is typically associated with steep, forested ravines with fast-flowing streams. Habitat suitable to support this species may be found where watercourse valleylands are found within the study area. Breeding bird surveys conducted in 2018 and 2019 did not identify this species. No permitting is anticipated for this species.

### **Eastern Whip-poor-will**

Eastern Whip-poor-will is regulated as ‘Threatened’ under the ESA and SARA. This species is typically associated with a mix of open and forested areas, such as savannahs, open woodlands or openings in deciduous, coniferous and mixed forests. Habitat suitable to support this species may be found where forested communities are present within the study area. Breeding bird surveys conducted in 2018 and 2019 did not identify this species. No permitting is anticipated for this species.

### **Henslow’s Sparrow**

Henslow’s Sparrow is regulated as ‘Endangered’ under the ESA and the SARA. MNRF data included record(s) for this species within the vicinity (5 km) of the study area. Henslow’s Sparrow is typically found in large and undisturbed grassland communities. No habitat considered suitable to support this species was identified within the study area. Breeding bird surveys conducted in 2018 and 2019 did not identify this species. No permitting is anticipated for this species.

### **Wood Thrush**

Wood Thrush is listed as ‘Special Concern’ under the ESA; however, this species is not a regulated species (‘Endangered’ or ‘Threatened’) under the ESA. The Wood Thrush is listed as ‘Threatened’ by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and under the SARA. The Wood Thrush is found in mature deciduous and mixed forests with large trees, shade and leaf litter for foraging. Habitats which have the potential to support Wood Thrush were found where mature deciduous and mixed forest habitat communities were identified within the project lands. Breeding bird surveys conducted in 2018 and 2019 did not identify this species. No permitting is anticipated as this species is not regulated under the ESA.

### **Bobolink**

Bobolink, a species with a broad distribution across southern Ontario, is regulated as ‘Threatened’ under the ESA and is listed as ‘Threatened’ under the SARA. Bobolinks are typically described as residents of grassland communities with an abundance of grass species that are typical of old fields (Cadman *et al.* 2007). Bobolinks are also commonly associated with agricultural lands. Open-country, meadow and agricultural habitat types found across the study area have the potential to provide habitat suitable to support this species. This species was documented during field investigations at stations 5-2018 and 34-2019 (**Appendix H**). Additional field investigations are required prior to construction to confirm species presence/impacts. If Bobolink are confirmed during fieldwork, permitting under the ESA may be required.

### **Eastern Meadowlark**

Eastern Meadowlark, a species with a broad distribution across southern Ontario, is regulated ‘Threatened’ under the ESA and under the SARA. The Eastern Meadowlark, formerly a prairie species,

has adapted to agricultural practices of the European settlers (hayfields, pastures, etc.) (Cadman *et al.* 2007). As farming practices have become more efficient, Eastern Meadowlark numbers have declined. Open-country, meadow and agricultural habitat types found across the study area have the potential to provide habitat suitable to support this species. This species was documented during field investigations at stations 5-2018, 7-2019, and 33-2019 (Appendix C). Additional field investigations are required prior to construction to confirm species presence/impacts. If Eastern Meadowlark are confirmed during fieldwork, permitting under the ESA may be required.

### **Bats**

There are currently four bat species regulated as ‘Endangered’ under the ESA, including Eastern Small-footed Myotis; Little Brown Myotis; Northern Myotis; and, Tri-coloured Bat. The ESA affords protection for both individuals of these species (subsection 9(1)) and their habitat (subsection 10(1)). Given that species-specific habitat regulations have not yet been developed for SAR bats, habitat is protected according to the general definition provided in the ESA. Specifically, according to section 2(1), the Act protects “an area, on which the species depends, directly or indirectly, to carry on its life processes, including processes such as reproduction, rearing, hibernation, migration or feeding”.

As stated previously, five potential underground tunnels were identified from review of the aerial imagery available for the proposed runningway and stations. A site investigation was completed of the external conditions of these tunnels on August 8, 2019 to determine if they are suitable as potential bat hibernacula. A search for all underground features meeting these criteria will be completed as part of the permitting phase of the project in advance of construction. Surveys of these features through internal or external survey methods may be required prior to disturbance.

Maternity roosting habitat has been grouped into three types: treed habitat, buildings, and rock piles. Within the study area, many treed habitats occur, and all of these are considered potentially suitable as bat roosting habitat. Buildings areas also used for roosting, most frequently by Little Brown Myotis. Bats could use any building, regardless of building age, structure type or whether it is currently occupied by people. Therefore, all buildings are considered potentially suitable habitat. Eastern Small-footed Myotis is a saxicolous (rock-loving) species and will frequently roost in rock piles, talus, or crack and crevices in rock outcrops. In all cases, habitat occupancy must be either demonstrated or conservatively assumed for protection to be applied. A more detailed evaluation of bat habitat and the occupancy of their habitat will be completed as part of the permitting phase of the project in advance of construction.

### **3.3.4 Barrier Effects on Wildlife Passage**

No new barriers to wildlife passage are expected to occur as a result of the construction of the 407 Transitway. All major corridors associated with valleylands will be maintained and new crossings will mimic the existing crossings to facilitate wildlife passage.

The bridge structures at several watercourse/valley crossings within the study area provide the only significant wildlife passage corridors as the entire 407 ETR corridor is fenced and/or the smaller culvert associated with small watercourse crossings do not generally accommodate wildlife passage. These crossings are (from west to east): Bronte Creek, Sixteen Mile Creek, East Sixteen Mile Creek and the Credit River. At present, these large structures provide passage to both small wildlife species (e.g., small mammals, herpetofauna, etc.) and large species (e.g., white-tailed deer). Important habitat connectivity is also achieved at the following crossings: Fourteen Mile Creek, several tributaries of East Sixteen Mile Creek and the tributary of Fletcher’s Creek. Lands in the vicinity of these structures comprise some of the highest quality natural heritage features found within the vicinity of the study area and provide important north-south/east-west movement corridors for wildlife within, or in the immediate vicinity of the study area. The fencing mentioned above, also provides some function to funnel wildlife species towards these



corridors by forcing them to move laterally until they reach a suitable crossing area. However, the chain-link fencing currently present is not wildlife-specific funnel fencing and may be permeable by some wildlife species.

Openness ratio (OR) is a calculation which is used to determine the tunnel effect created by a structure and thus the likelihood wildlife species would utilize that structure. This evaluation is completed by analysing a structure's component measurements (i.e., height x width / structure length). Generally, a greater openness ratio value is expected to increase the likelihood of wildlife utilization of a given structure or culvert. To maximize the openness ratio, structures should be designed to have a larger opening and the shortest length as possible, since wildlife species are more likely to enter a culvert if they can see light at the other end. Minimum OR was determined by a review of secondary source data regarding wildlife passage at road crossings (Clevenger *et al.* 2001). The minimum OR for small animals should be 0.05 and the minimum OR for large animals should be 0.6. Research indicates that small mammals prefer small diameter openings (e.g., concealment may decrease exposure to predation), and subsequently, smaller OR structures (Ministry of Transportation, 2006). A minimum clearance height of 3 m for structures that will provide passage for large animals (e.g. white-tailed deer) is recommended. In addition, natural substrates should be used to encourage wildlife to utilize crossing structures. Ground cover should be continuous with the substrates found outside and adjacent to the structural entrances thereby encouraging animals to pass through the structure (Yanes *et al.* 1995).

As part of project implementation, once structure sizes are confirmed, OR can be calculated for each of the new structures to determine whether target animal groups can use the structures for passage. It should be noted that structures sizes for the 407 ETR are already generally large enough to accommodate large wildlife species. Constructing new structures of similar size will allow for continued use of these corridors for all species of wildlife.

### 3.3.5 Wildlife/Vehicle Conflicts

Wildlife/vehicle conflicts appear to be minor at present within the 407 ETR corridor as large corridors exist at the larger watercourse crossings (valleylands), which are typically spanned by bridges. Because these corridors will be maintained under the 407 Transitway through construction of similarly dimensioned structures, no additional conflicts are expected to occur, and the structures will allow for the continued use of these wildlife corridors for all species of wildlife.

Construction duration and disturbance in the vicinity of existing culverts and bridges should be minimized to the extent possible to reduce the potential for increase in road mortality caused by wildlife avoidance of these structures.

### 3.3.6 Wildlife Passage Considerations for Enhanced Functionality

#### **Vegetation Planting at Wildlife Crossing Structures**

Low stature vegetation is considered an important component of wildlife crossing used by reptiles, amphibians and small mammals (Cavallaro *et al.* 2005). Bare and exposed earth surrounding the entrance to a wildlife passage will deter use by wildlife as a result of perceived vulnerability to predators. To the extent possible, all existing natural vegetation should be salvaged surrounding all crossing locations. Where vegetation has been removed or is found to be absent, in the immediate vicinity of crossings, planting of low stature vegetation (e.g., grasses and small shrubs) should occur. Shrubs should be spaced apart from one another by approximately 3-5 m, as to not cause a visual obstruction of the wildlife crossing structure.

### **Internal Cover at Wildlife Crossing Structures**

Reptiles, amphibians and small mammals prefer low stature vegetation or other forms of shelter within crossing structures (Cavallaro et al. 2005). An assessment of light penetration into the crossing structures will be required to determine if adequate vegetation growth and establishment as cover will occur. Other natural forms of cover such as stumps, logs (preferably hollowed), and rock piles, can be used to provide shelter and moist microclimates for wildlife. It is recommended that a mix of stumps, logs and rock piles be placed within each of the crossing structures. Cover objects should be present at intervals of approximately every 10 m, within enclosed areas. Rock piles may be constructed out of rip-rap or other similar sized material, but should be no larger than 0.5 m height x 1 m wide, to avoid impediment of wildlife movement through the structure. Similarly, logs placed within the crossing structure should be oriented lengthwise within the structure wall so as to not impede wildlife movement.

### **Substrate Materials within Wildlife Crossing Structures**

Natural substrates should be used to encourage wildlife to utilize crossing structures. Ground cover should be continuous with the substrates found outside and adjacent to the structural entrances thereby encouraging animals to pass through the structure. Substrates covering the ground within and surrounding the crossing structures should contain a mix of soil and small granular materials, matching what is found on lands surrounding the crossing structures (locally excavated soils is recommended).

### **Funnel Fencing**

Where it is necessary to construct new roads, expand existing highways, or similar infrastructure, wildlife crossing structures (e.g., bridges and culverts) can be used to enable wildlife movement across roads (Beier et al. 2008). Funnel and/or barrier fencing is the most effective way to guide wildlife to a given crossing structure and reduce road-mortality (Clevenger 2011; Ministry of Transportation 2006). Wildlife fencing is recommended at the crossing structures to improve their effectiveness at safely moving wildlife across the landscape. Further analysis at a site-specific level will be required to determine fencing requirements and to further explore fencing type required (e.g. small animal fencing vs. large animal fencing). Given the level of disturbance and lack of extensive natural cover, wildlife fencing would be constructed in close association with valleylands.

### **3.3.7 Disturbance to Wildlife from Noise, Light and Visual Intrusion**

Noise, light and visual intrusion may alter wildlife activities and patterns. In the 407 ETR setting, wildlife has generally become acclimatized to the noise, light and visual conditions associated with the operation of the multi-lane highway and only those fauna that are tolerant of human activities tend to persist. Given that wildlife found within the study area are generally acclimatized to the presence of road infrastructure, disturbance to wildlife from any increase in noise, light and visual intrusion potentially caused by the operation of the 407 Transitway are not expected to have any significant adverse effects.

Potential disturbance caused by light pollution from the proposed improvements to the transportation network can be mitigated by using reflectors to focus light beams onto the facility and away from natural heritage features adjacent to the 407 Transitway.

### **3.3.8 Potential Impacts to Migratory Birds**

A number of bird species listed under the MBCA are located within the study area. The MBCA prohibits the killing, capturing, injuring, taking or disturbing of migratory birds (including eggs) or the damaging, destroying, removing or disturbing of nests. While migratory insectivorous and non-game birds are protected year-round, migratory game birds are only protected from March 10 to September 1. Environment Canada provides Nesting Periods when migratory birds are most likely to be nesting, within a respective geographic zone. The 407 Transitway falls within Environment Canada's Nesting Zone C2

(Nesting Period: end of March – end of August). To comply with the requirements of the MBCA, disturbance, clearing or disruption of vegetation where birds may be nesting should be completed outside the migratory bird nesting timing window of April 1 to August 31. In the event that these activities must be undertaken from April 1 to August 31, a pre-clearing nest survey will be conducted by a qualified avian biologist to identify and locate active nests of species covered by the MBCA.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

The following outlines the proposed environmental protection/mitigation measures for terrestrial ecosystems. These measures should be reviewed as part of project implementation and included in the contract package, where warranted:

- identify regionally rare plants that will be impacted due to the proposed 407 Transitway and associated stations and, where possible, transplant any impacted species into vegetation communities with suitable habitat characteristics that are afforded protection;
- surplus lands or Protected Sites have been identified to offset impacts for the removal of forest, wetland and habitat for species at risk;
- review sites protected for forest and wetland restoration/enhancement opportunities as part of compensation (with the rate of compensation to be determined through further discussion with regulatory agencies (e.g., MNRF, MECP, and conservation authorities) as part of project implementation), with a minimum of 1:1 for forest and wetland restoration recommended;
- identify all forest and wetland restoration areas required for compensation, as well as all forest edge, riparian and valleyland areas where vegetation management is required prior to construction commencement;
- ensure forest edge, riparian and valleyland management for those vegetation communities where such management is recommended;
- develop detailed planting plan(s) once areas identified for compensation/restoration have been determined in consultation with the respective regulatory agencies;
- control non-native and invasive plant species that have become established and prevent the establishment of new non-native and invasive plant species;
- ensure the policies of the Greenbelt Plan (2017) are reviewed/adhered to;
- during construction implement methods for the short-term stabilization of soils, including but not limited to coir fibre or a suitable alternative, as required;
- additionally, utilize vegetation cover to protect any exposed surfaces in accordance with OPSS 804 (Construction Specification for Seed and Cover);
- topsoil from stockpiles to be in accordance with OPSS 802 (Construction Specification for Topsoil);
- place tree protection fencing 1 m outside of the dripline of trees to minimize impacts and ensure no construction activity shall occur within the tree protection zone in accordance with OPSS 801 (Construction Specification for the Protection of Trees);
- filter fabric should be placed along the tree protection fencing to mitigate the colonization of wind dispersed invasive species during construction along forest edges;
- prepare construction access management plans for work to be carried out at Bronte Creek, Sixteen Mile Creek and the Credit River, in order to minimize encroachment into the stream valley to the extent possible;
- calculate openness ratio prior to construction, or once structure sizes are determined, for each of the new structures to determine whether target animal groups can use the structures for passage;
- construct new structures of similar size to allow for continued use of these wildlife corridors for all species of wildlife;

- minimize construction duration and disturbance in the vicinity of existing culverts and bridges to the extent possible to reduce the potential for increase in road mortality caused by wildlife avoidance of these structures;
- implement wildlife passage considerations for enhanced functionality;
- utilize reflectors to focus light beams onto the facility and away from natural heritage features adjacent to the 407 Transitway to reduce potential disturbance caused by light pollution;
- include NSSP (Operation Constraint – Migratory Bird Protection – General) in the contract document to ensure the contractor is in compliance with the MBCA;
- all disturbance, clearing or disruption of vegetation where birds may be nesting shall occur outside of the migratory bird nesting timing window (typically running from April 1 to August 31) to avoid the breeding season for the majority of the bird species, unless a pre-clearing nest search is undertaken to confirm the absence of bird nests;
- wildlife salvage shall occur prior to clearing and grubbing activities where possible, particularly in wetland habitats, to preserve vulnerable wildlife species (e.g., herpetofauna). All applicable permits will be obtained prior to any salvage activities; and,
- further field investigations will be undertaken during the appropriate season using MECP/MNRF protocols as required (i.e. for Barn Swallow, Bobolink, Eastern Meadowlark, bats, butternut, etc.). Surveying for these species will be conducted to establish their presence or absence, and, thus, the appropriate steps for protection and permitting.

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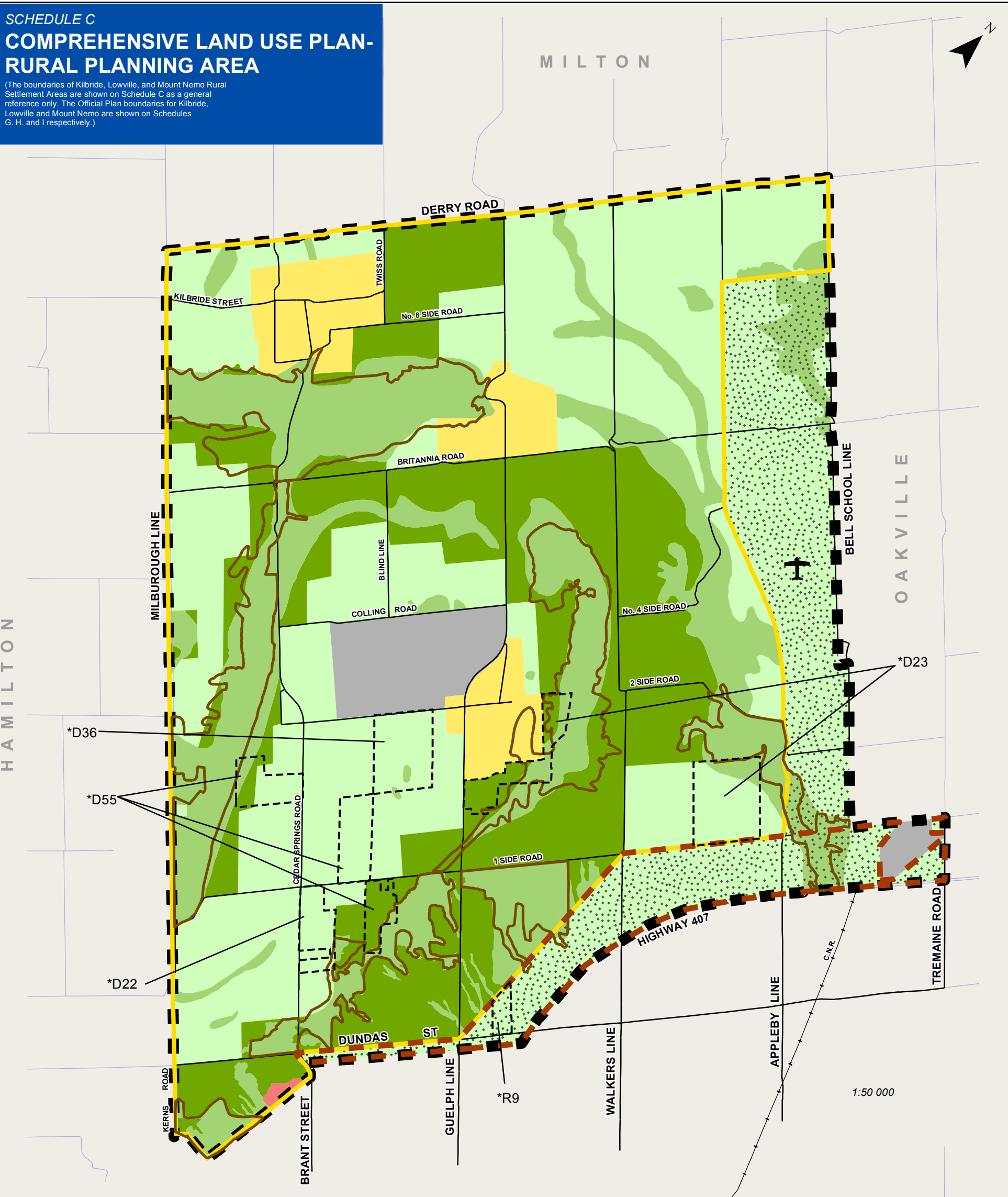


**APPENDIX A.  
MUNICIPAL OFFICIAL PLAN NATURAL HERITAGE  
SCHEDULES/ MAPS**

SCHEDULE C

COMPREHENSIVE LAND USE PLAN-  
RURAL PLANNING AREA

(The boundaries of Kilbride, Lowville, and Mount Nemo Rural Settlement Areas are shown on Schedule C as a general reference only. The Official Plan boundaries for Kilbride, Lowville and Mount Nemo are shown on Schedules G, H, and I respectively.)



Legend

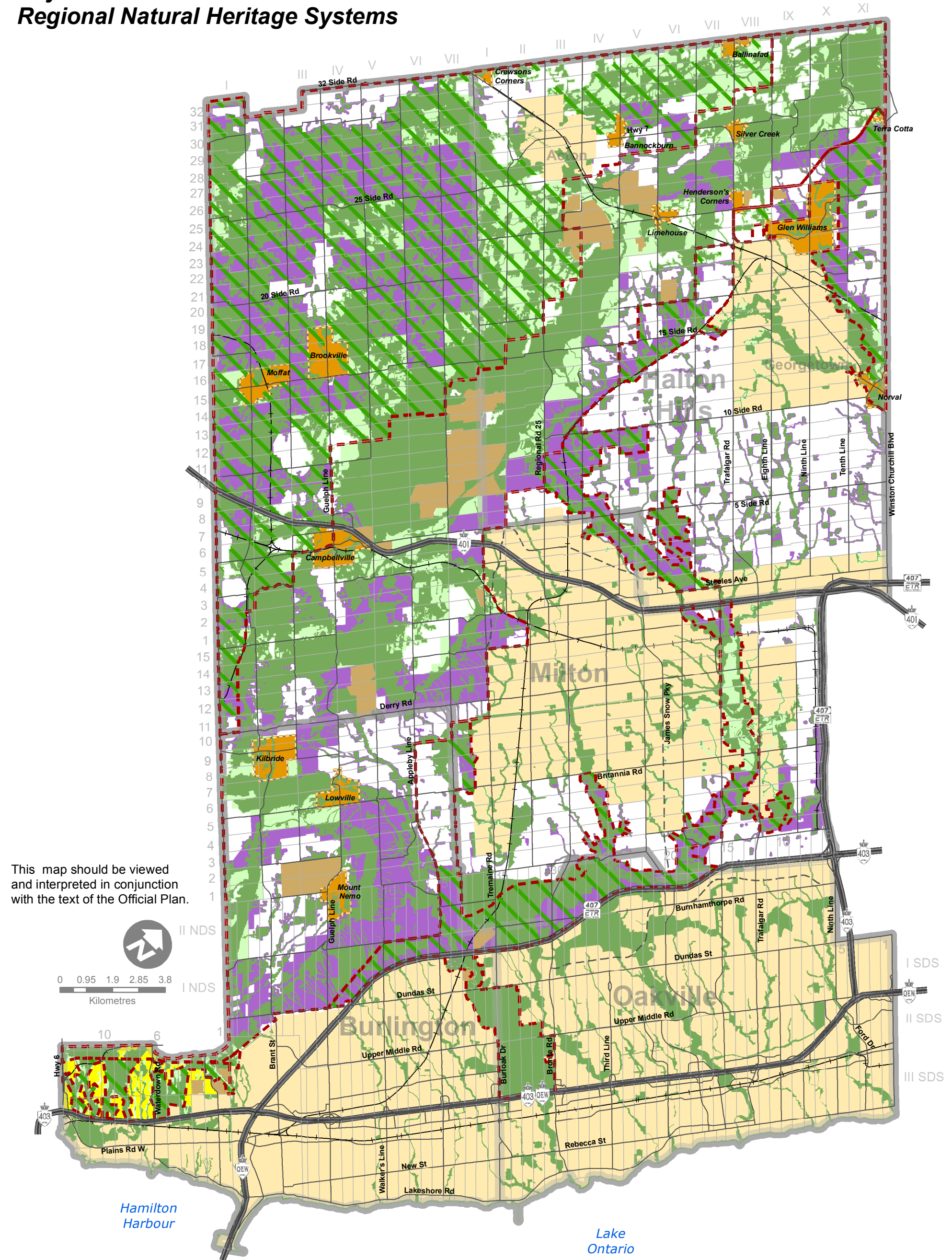
- |                                       |                            |                                  |   |
|---------------------------------------|----------------------------|----------------------------------|---|
| Niagara Escarpment Plan Area          | Escarpment Protection Area | Agricultural Rural Area          | Rural Planning Area   |
| Greenlands (Escarpment Plan Area)     | Escarpment Rural Area      | Mineral Resource Extraction Area | Environmentally Sensitive Area<br><small>(Note: Boundaries based on Map 1 of the Region of Halton Official Plan (2006))</small> |
| Greenlands (Non-Escarpment Plan Area) | Escarpment Urban Area      | Rural Settlement Area            | Parkway Belt Plan Area<br><small>(Note: All lands within Parkway Belt West Plan Area subject to Deferral *D9)</small>           |

NOTE: For information on Deferrals and Referrals (\*D or \*R), please see the Explanatory Notes of the Official Plan.



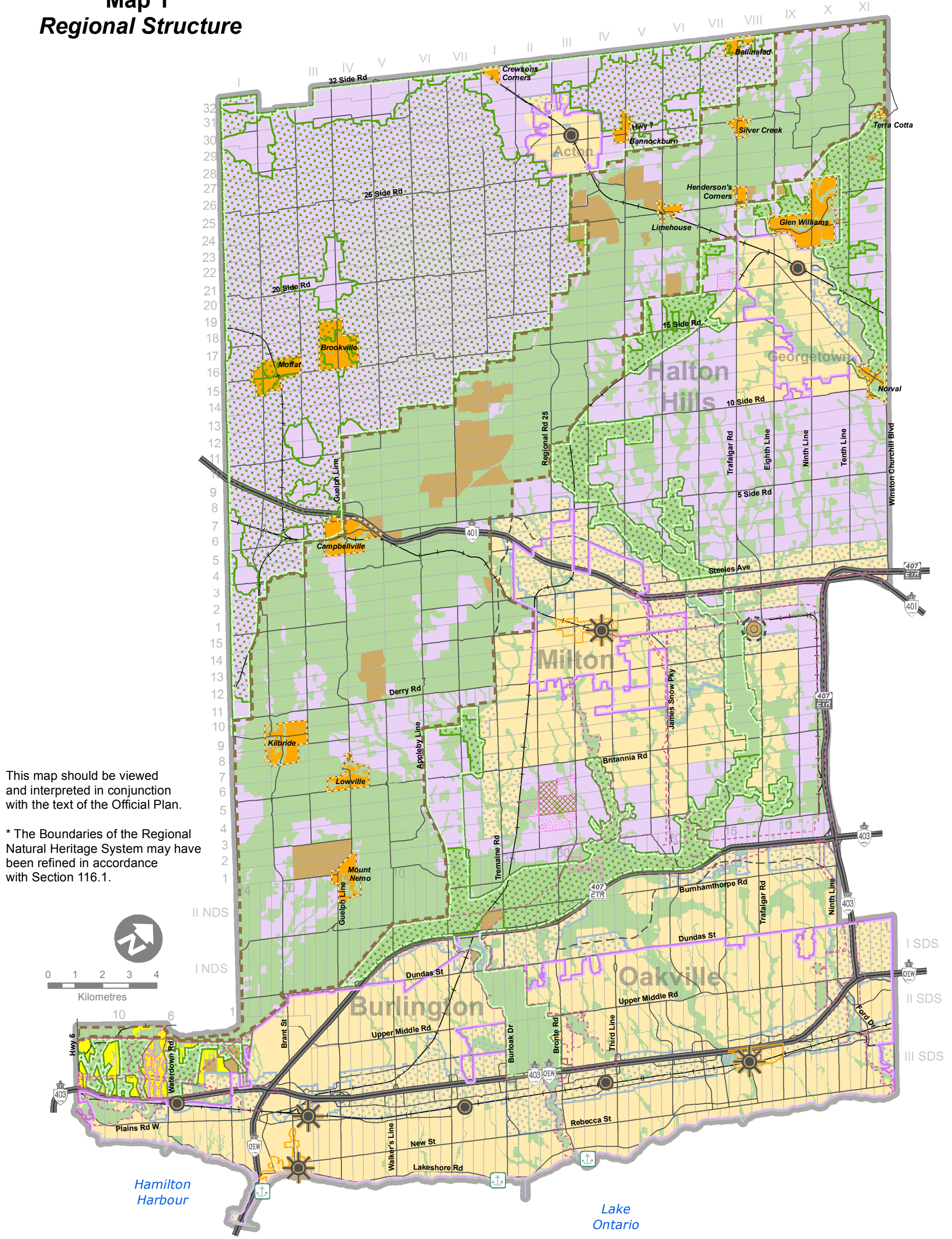
OCTOBER 2017

# Map 1G Key Features within the Greenbelt and Regional Natural Heritage Systems



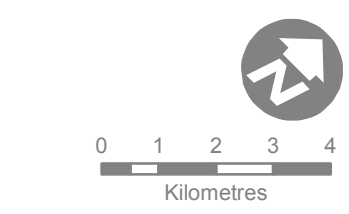
- +— Rail Line
- - - Proposed Major Arterial
- Major Road
- Provincial Freeway
- Lot and Concession Line
- Municipal Boundary
- - - Greenbelt Plan Boundary
- Urban Area
- Hamlet
- Key Features
- Enhancement Areas, Linkages and Buffers
- Prime Agricultural Areas in NHS Enhancements/Linkages/Buffers
- Mineral Resource Extraction Area
- Greenbelt NHS
- North Aldershot Policy Area

# Map 1 Regional Structure



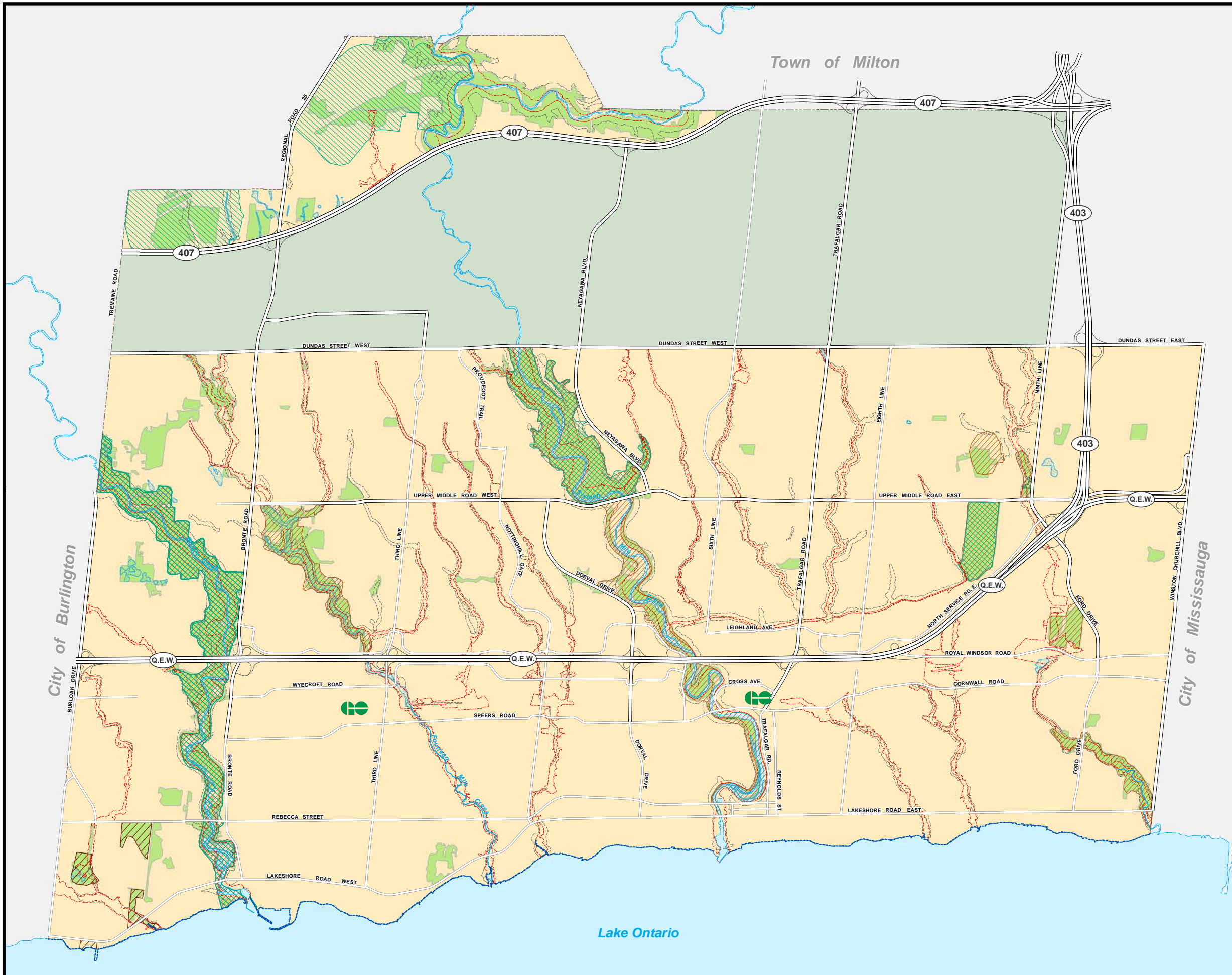
This map should be viewed and interpreted in conjunction with the text of the Official Plan.

\* The Boundaries of the Regional Natural Heritage System may have been refined in accordance with Section 116.1.



- Waterfront Park (See Map 2)
- Major Transit Station
- Proposed Major Transit Station
- Mobility Hub
- Rail Line
- Proposed Major Arterial
- Major Road
- Provincial Freeway
- Lot and Concession Line
- Municipal Boundary
- Urban Area
- Hamlet
- Agricultural Area
- Regional Natural Heritage System \*
- Mineral Resource Extraction Area
- North Aldershot Policy Area
- Greenbelt Natural Heritage System (Overlay)
- Greenbelt Plan Protected Countryside Boundary
- Niagara Escarpment Plan Boundary
- Parkway Belt West Plan Boundary
- Built Boundary
- Employment Area
- Urban Growth Centre
- Area Eligible for Urban Servicing
- Halton Waste Management Site

# SCHEDULE B NATURAL FEATURES & HAZARD LANDS

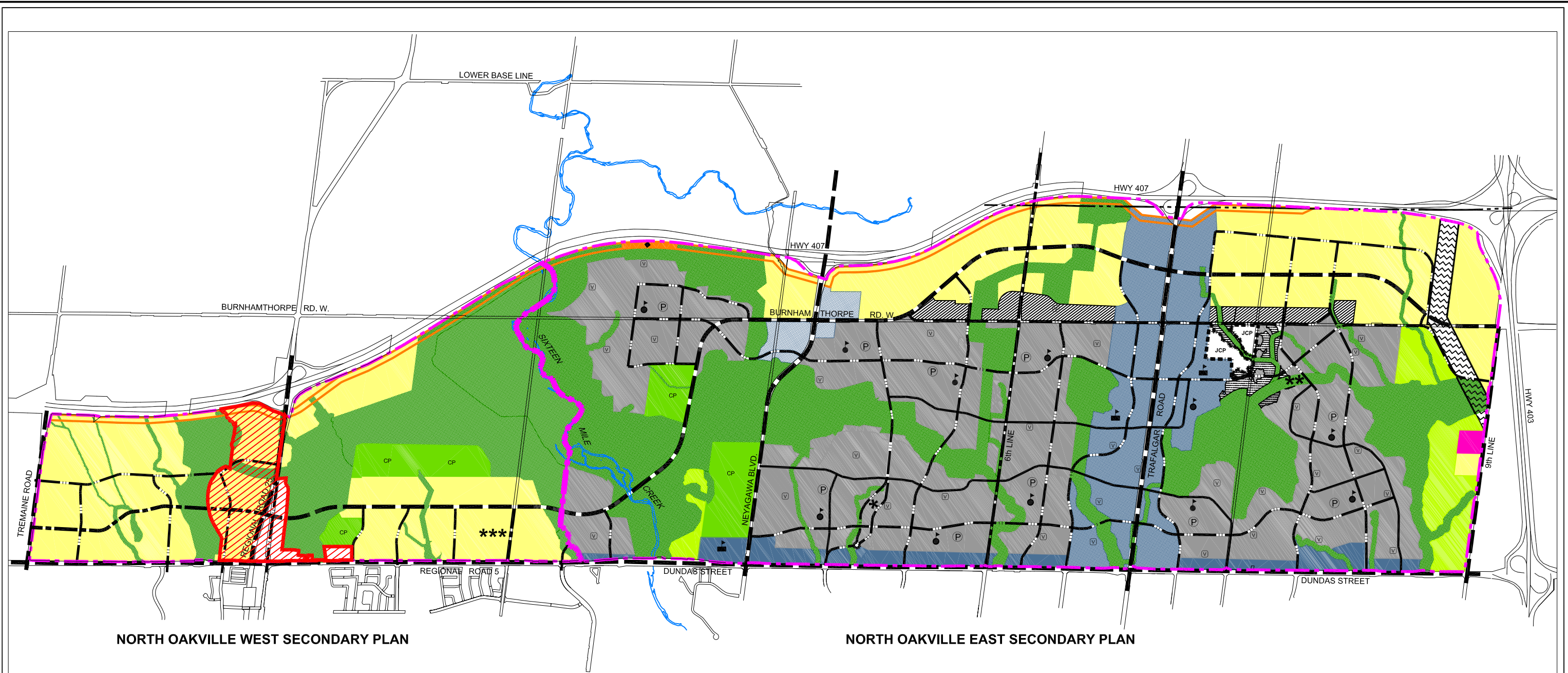


- FLOODPLAIN
- SHORELINE FLOOD LIMIT
- VALLEYLANDS
- SIGNIFICANT WILDLIFE HABITAT
- AREA OF NATURAL AND SCIENTIFIC INTEREST
- ENVIRONMENTALLY SENSITIVE AREAS
- WETLANDS
- WOODLANDS
- LANDS NOT SUBJECT TO THE POLICIES OF THIS PLAN

NOTE: Natural features and hazard lands are shown conceptually and for reference purposes only.



1:50,000  
August 28, 2018



**NORTH OAKVILLE WEST SECONDARY PLAN**

**NORTH OAKVILLE EAST SECONDARY PLAN**

**LEGEND**

- SECONDARY PLAN AREA BOUNDARY
- MILTON/OAKVILLE MUNICIPAL BOUNDARY
- PROVINCIAL FREEWAY
- MAJOR ARTERIAL/TRANSIT CORRIDOR
- MINOR ARTERIAL/TRANSIT CORRIDOR
- AVENUE/TRANSIT CORRIDOR
- CONNECTOR/TRANSIT CORRIDOR
- TRANSITWAY
- UNDERLYING LAND USE NOT DETERMINED subject to Section 7.4.7.1(b)(i)
- VILLAGE SQUARE

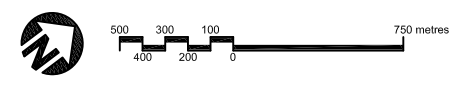
- UTILITY CORRIDOR
- DUNDAS URBAN CORE AREA
- NEYAGAWA URBAN CORE AREA
- SPECIAL STUDY AREA
- TRAFALGAR URBAN CORE AREA
- TRANSITIONAL AREA
- EMPLOYMENT DISTRICT
- NATURAL HERITAGE SYSTEM AREA
- HEALTH ORIENTED MIXED USE NODE
- SUBJECT TO SECTIONS 7.4.7.3c viii & 7.4.14.3 d)
- POLICY REFERENCE SEE POLICY SECTION 7.4.7.2

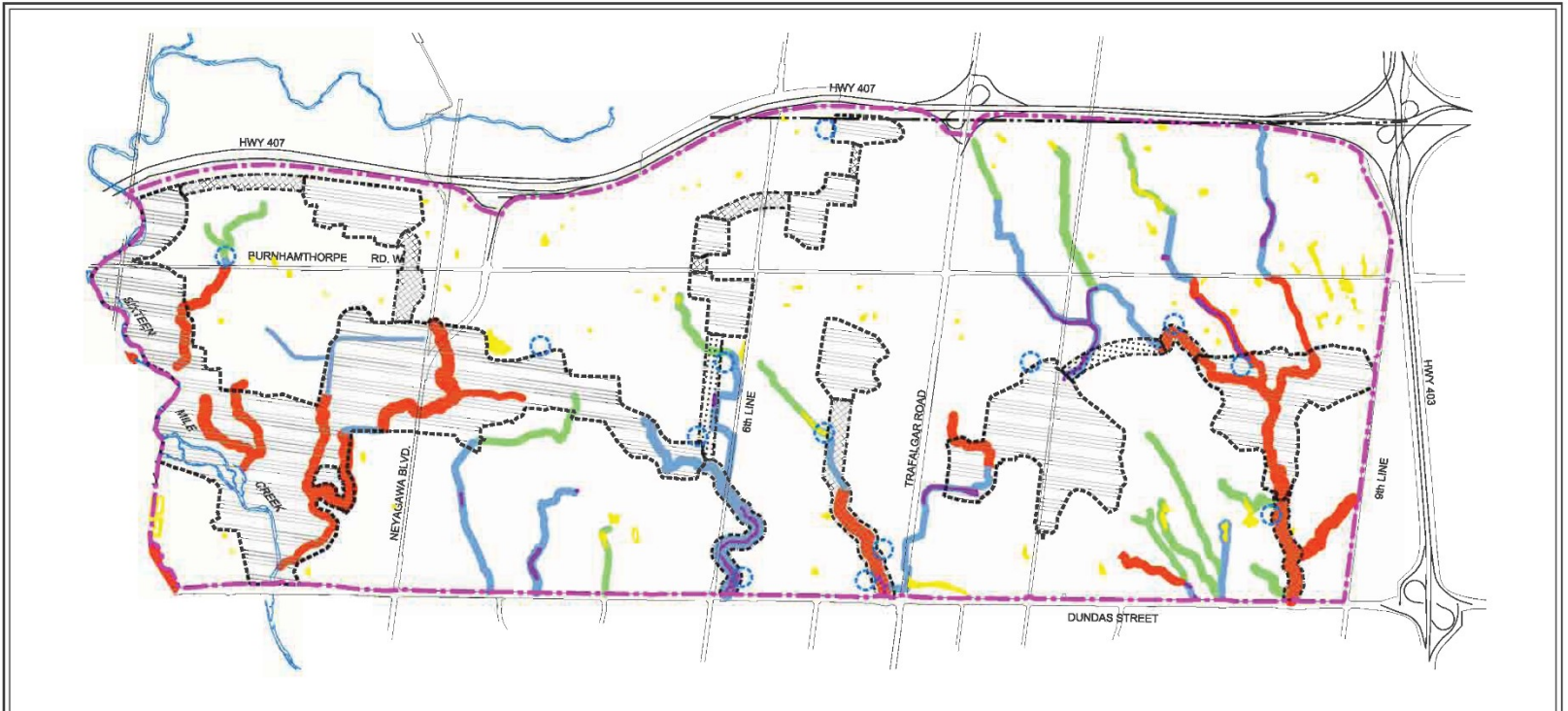
- COMMUNITY PARK AREA
- CEMETERY AREA
- INSTITUTIONAL AREA
- ELEMENTARY SCHOOL SITE
- SECONDARY SCHOOL SITE
- NEIGHBOURHOOD PARK AREA
- NEIGHBOURHOOD AREA
- AREA STILL UNDER APPEAL
- JOSHUA CREEK COMMUNITY PARK AREA
- JOSHUA CREEK FLOODPLAIN AREA subject to Sections 7.4.13.1 & 7.6.17

**Town of Oakville**

North Oakville  
Secondary Plan

**FIGURE NOW 2 & NOE 2**  
**Land Use Plan**





**LEGEND**

- - - - SECONDARY PLAN AREA BOUNDARY
- OAKVILLE / MILTON MUNICIPAL BOUNDARY
- CORE PRESERVE AREA
- CORE PRESERVE AREA
- LINKAGE PRESERVE AREA
- OPTIONAL LINKAGE PRESERVE AREA
- █ HIGH CONSTRAINT STREAM CORRIDORS
- █ MED. CONSTRAINT STREAM CORRIDORS

OTHER HYDROLOGICAL FEATURES

- █ LOW CONSTRAINT STREAM CORRIDORS
- █ HYDROLOGIC FEATURES "A"
- █ HYDROLOGIC FEATURES "B"

STORMWATER MANAGEMENT FACILITY

- █ CONCEPTUAL STORMWATER MANAGEMENT FACILITY
- LOCATIONS WHICH MAY ENCROACH IN NHS

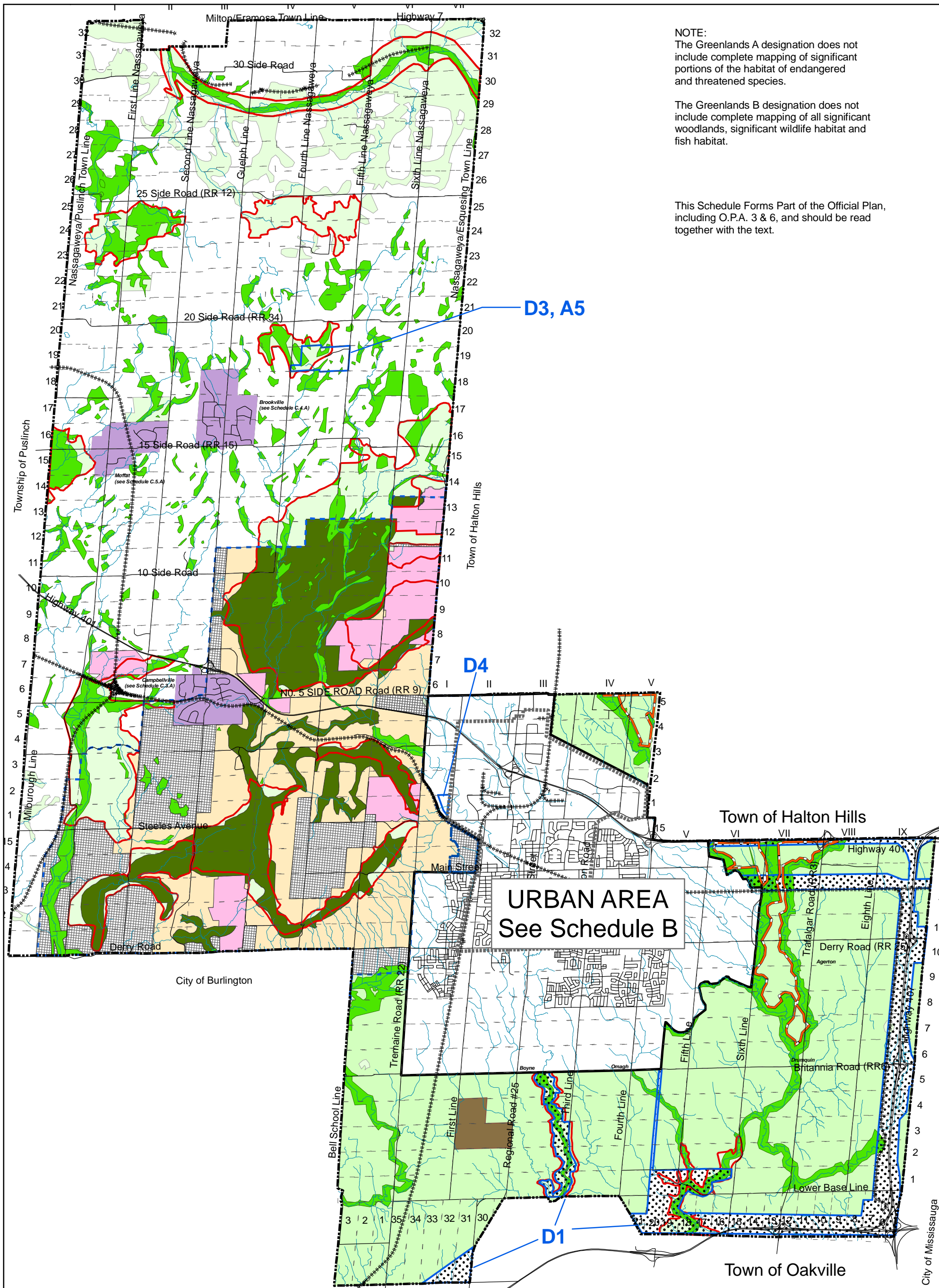
**Town of Oakville**

North Oakville East of Sixteen  
Mile Creek Secondary Plan

**FIGURE NOE 3**  
*Natural Heritage Component of Natural  
Heritage and Open Space System  
including Other Hydrological Features*

February 2008





NOTE:  
 The Greenlands A designation does not include complete mapping of significant portions of the habitat of endangered and threatened species.  
 The Greenlands B designation does not include complete mapping of all significant woodlands, significant wildlife habitat and fish habitat.

This Schedule Forms Part of the Official Plan, including O.P.A. 3 & 6, and should be read together with the text.

**URBAN AREA**  
 See Schedule B

- |  |  |  |  |
|--|--|--|--|
| <ul style="list-style-type: none"> <li>— LOTS &amp; CONCESSIONS</li> <li>— MUNICIPAL BOUNDARY</li> <li>— RAILWAY</li> <li>— PERMANENT URBAN SEPARATOR</li> <li>— SPECIFIC POLICY AREA 13</li> <li>— URBAN EXPANSION AREA BOUNDARY</li> </ul> | <ul style="list-style-type: none"> <li>— AGRICULTURAL AREA</li> <li>— DEFERRED AND APPEALED AREAS</li> <li>— ENVIRONMENTALLY SENSITIVE AREA</li> <li>— ERAMOSIA RIVER - BLUE SPRINGS CREEK POLICY AREA</li> <li>— ESCARPMENT NATURAL AREA</li> </ul> | <ul style="list-style-type: none"> <li>— ESCARPMENT PROTECTION AREA</li> <li>— ESCARPMENT RURAL AREA</li> <li>— GREENLANDS A AREA</li> <li>— GREENLANDS B AREA</li> <li>— HALTON WASTE MANAGEMENT SITE</li> <li>— HAMLET AREA</li> </ul> | <ul style="list-style-type: none"> <li>— MINERAL RESOURCE EXTRACTION AREA</li> <li>— NIAGARA ESCARPMENT PLAN BOUNDARY</li> <li>— PARKWAY BELT WEST PLAN AREA</li> <li>— RURAL AREA</li> <li>— WATERCOURSE</li> <li>— EXISTING URBAN AREA BOUNDARY</li> </ul> |
|--|--|--|--|

**TOWN OF MILTON**  
**OFFICIAL PLAN**

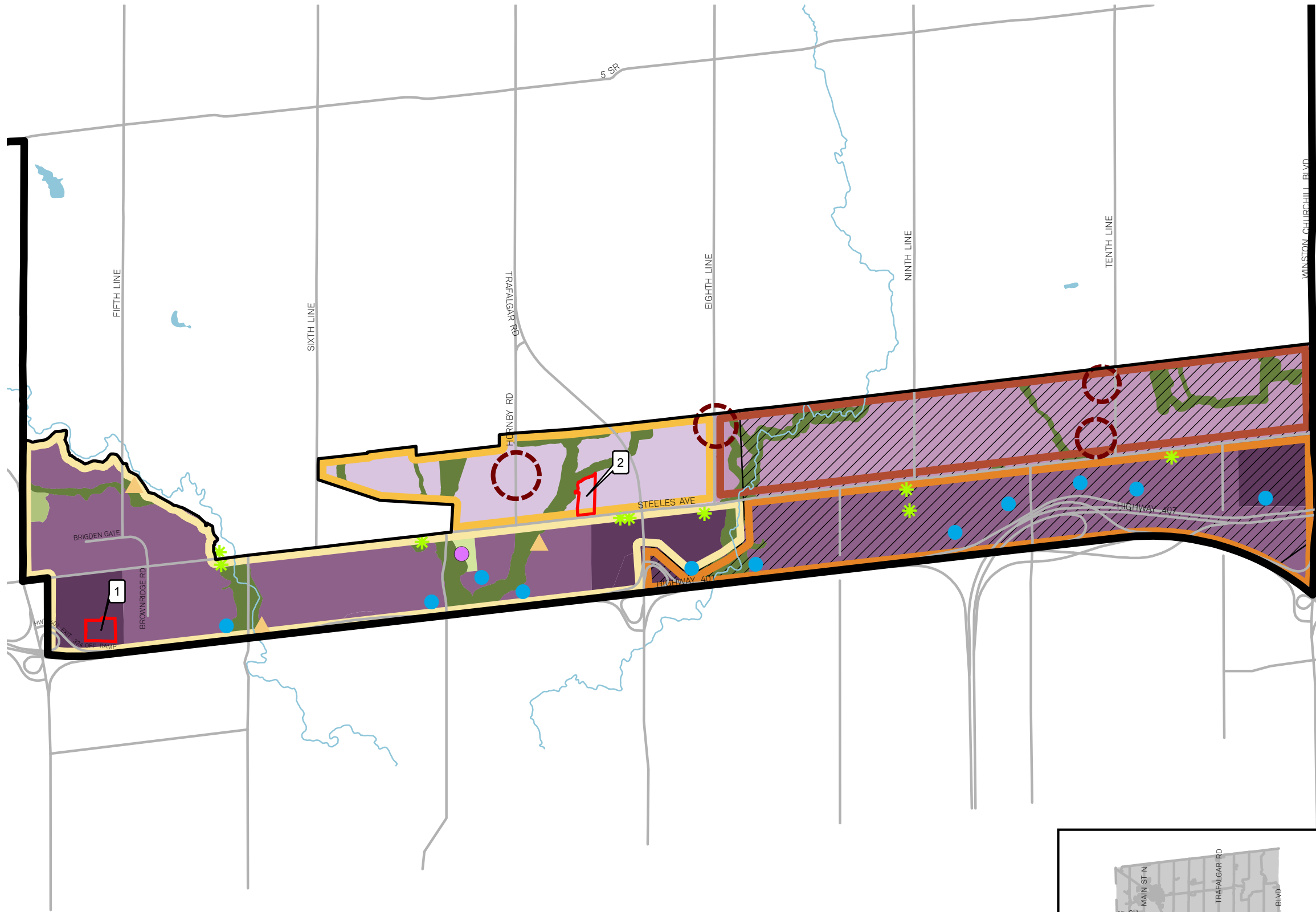
**Schedule A**  
 Land Use Plan

NAD 1983 - UTM Zone 17N

This Schedule Forms Part Of The Official Plan And Should Be Read Together With The Text.  
 (C) Copyright Teramet, Town of Milton 2008  
**Consolidated August 2008**

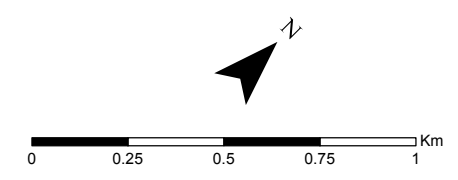


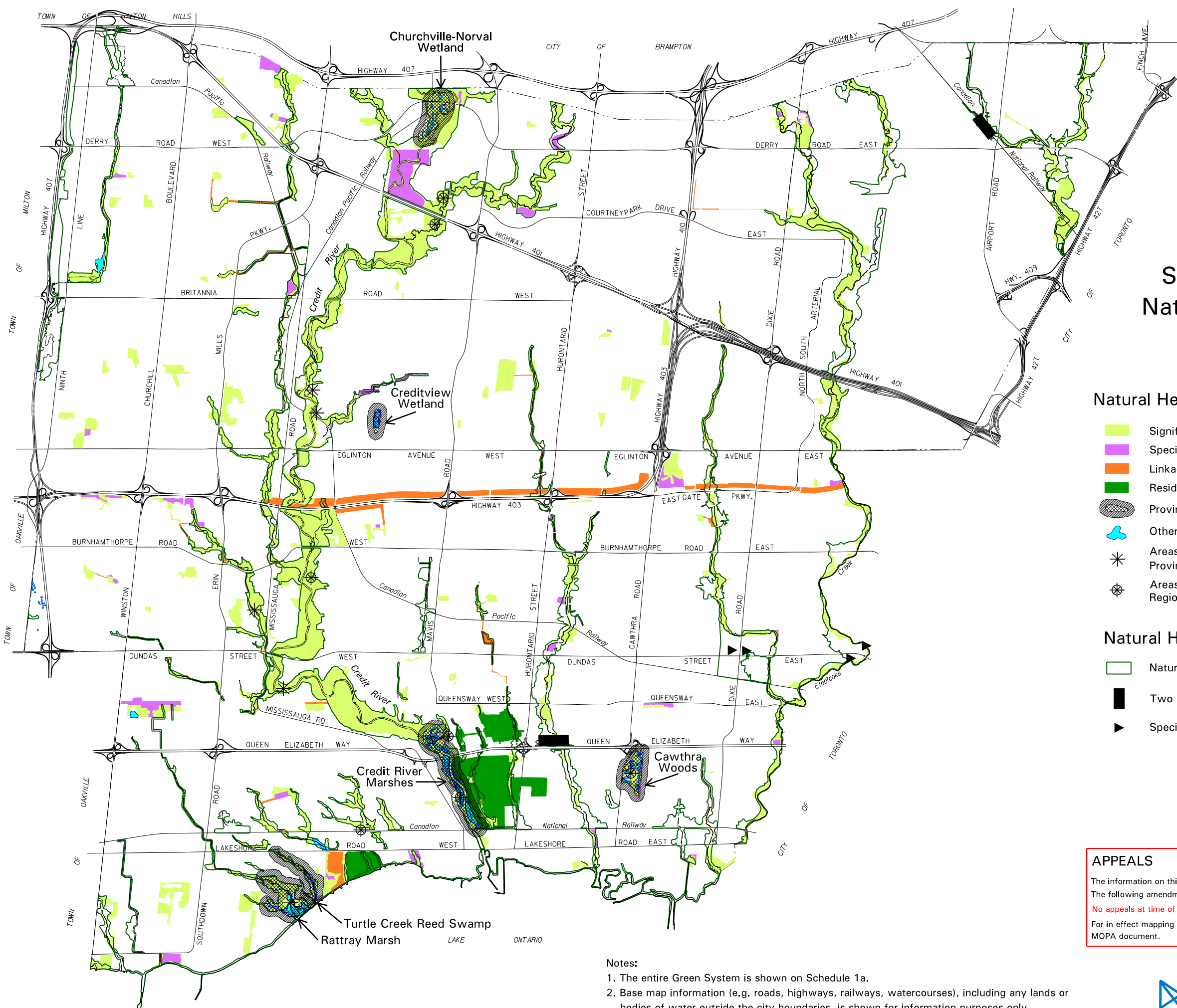
**SCHEDULE A8  
PREMIER GATEWAY EMPLOYMENT  
AREA LAND USE PLAN**



- Phase 1B Employment Area
- Phase 2B Employment Area
- Prestige Industrial Area
- Gateway Area
- Major Parks and Open Space Area
- Private Open Space Area
- Greenlands
- Employment Phase 1A
- Employment Phase 1B
- Employment Phase 2A (Regional Phasing 2021-2031)
- Employment Phase 2B (Regional Phasing 2021-2031)
- Existing Rural Residential Concentration
- Special Policy Area
- HPBATS/GTA West Corridor Protection Area
- Town of Halton Hills Boundary
- Urban Boundary
- Waterbody
- Watercourse
- Community Park
- Building with Historic Significance
- Stormwater Management Pond
- Potentially Unstable Slope

NOTE:  
This schedule forms part of the Official Plan and must be read together with the text.  
  
Parts of this Schedule are currently pending approval. Please Refer to Figure 1 in the Preamble.





## Schedule 3 Natural System

### Natural Heritage System:

- Significant Natural Areas and Natural Green Spaces
- Special Management Areas
- Linkages
- Residential Woodlands
- Provincially Significant Wetlands
- Other Wetlands
- Areas of Natural and Scientific Interest - Provincial Significance
- Areas of Natural and Scientific Interest - Regional Significance

### Natural Hazards:

- Natural Hazards
- Two Zone Floodplain Regulations
- Special Policy Area Floodplain

### APPEALS

The information on this schedule reflects Council adopted amendments. The following amendments are under appeal and affect this schedule:

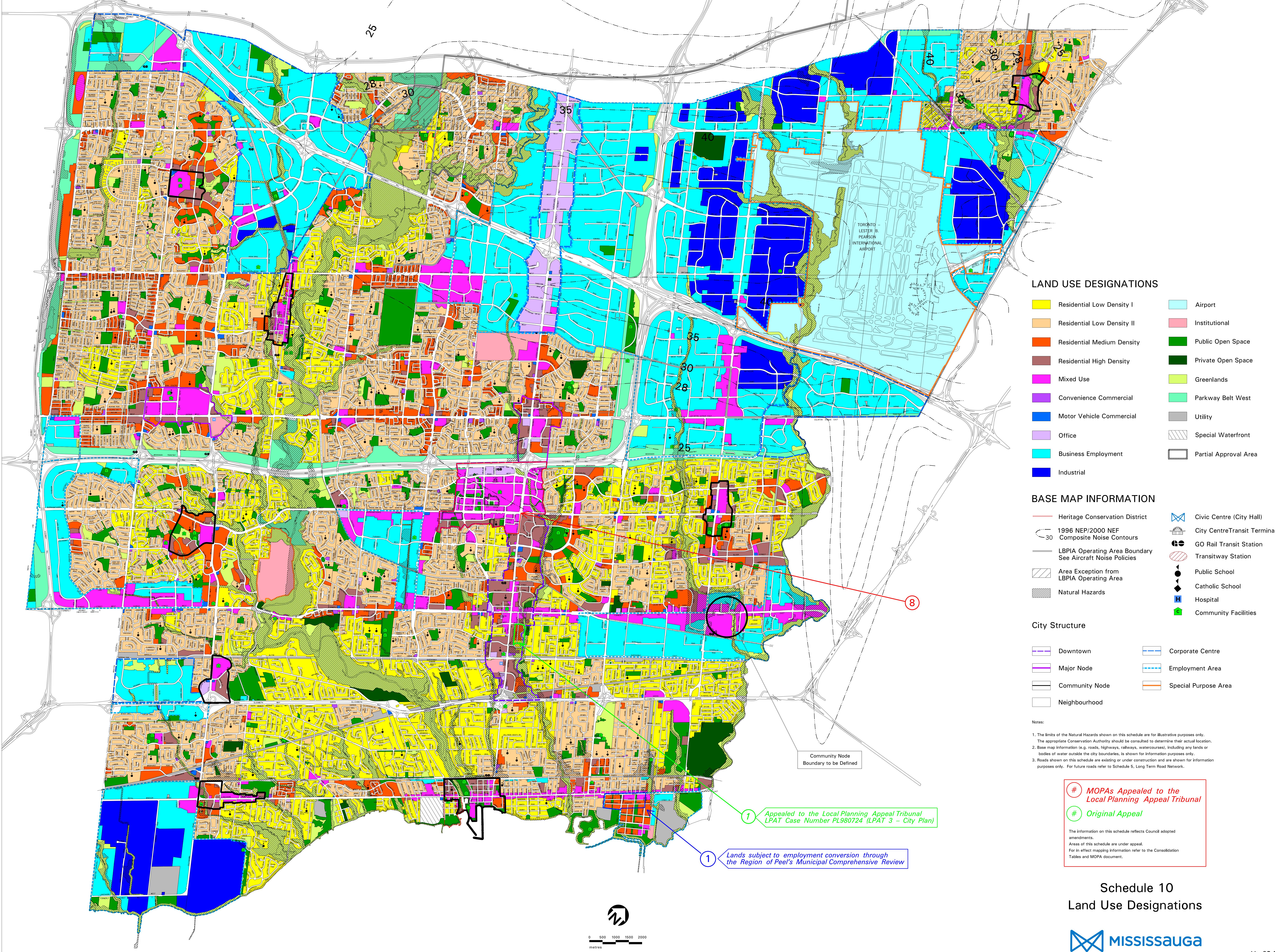
**No appeals at time of consolidation.**

For in effect mapping information refer to the Consolidation Tables and MOPA document.

### Notes:

1. The entire Green System is shown on Schedule 1a.
2. Base map information (e.g. roads, highways, railways, watercourses), including any lands or bodies of water outside the city boundaries, is shown for information purposes only.
3. The limits of the Natural Hazards shown on this Schedule are for illustrative purposes only. The appropriate Conservation Authority should be consulted to determine their actual location.





**LAND USE DESIGNATIONS**

- |  |                            |  |                       |
|--|----------------------------|--|-----------------------|
|  | Residential Low Density I  |  | Airport               |
|  | Residential Low Density II |  | Institutional         |
|  | Residential Medium Density |  | Public Open Space     |
|  | Residential High Density   |  | Private Open Space    |
|  | Mixed Use                  |  | Greenlands            |
|  | Convenience Commercial     |  | Parkway Belt West     |
|  | Motor Vehicle Commercial   |  | Utility               |
|  | Office                     |  | Special Waterfront    |
|  | Business Employment        |  | Partial Approval Area |
|  | Industrial                 |  |                       |

**BASE MAP INFORMATION**

- |  |   |  |                              |
|--|---|--|------------------------------|
|  | Heritage Conservation District                            |  | Civic Centre (City Hall)     |
|  | 1996 NEP/2000 NEF Composite Noise Contours                |  | City Centre Transit Terminal |
|  | LBPIA Operating Area Boundary See Aircraft Noise Policies |  | GO Rail Transit Station      |
|  | Area Exception from LBPIA Operating Area                  |  | Transitway Station           |
|  | Natural Hazards   |  | Public School                |
|  |   |  | Catholic School              |
|  |   |  | Hospital                     |
|  |   |  | Community Facilities         |

**City Structure**

- |  |                |  |                      |
|--|----------------|--|----------------------|
|  | Downtown       |  | Corporate Centre     |
|  | Major Node     |  | Employment Area      |
|  | Community Node |  | Special Purpose Area |
|  | Neighbourhood  |  |                      |

- Notes:
- The limits of the Natural Hazards shown on this schedule are for illustrative purposes only. The appropriate Conservation Authority should be consulted to determine their actual location.
  - Base map information (e.g. roads, highways, railways, watercourses), including any lands or bodies of water outside the city boundaries, is shown for information purposes only.
  - Roads shown on this schedule are existing or under construction and are shown for information purposes only. For future roads refer to Schedule 5, Long Term Road Network.

MOPAs Appealed to the Local Planning Appeal Tribunal

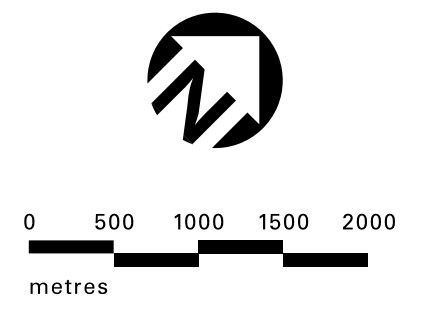
Original Appeal

The information on this schedule reflects Council adopted amendments. Areas of this schedule are under appeal. For in effect mapping information refer to the Consolidation Tables and MOPA document.

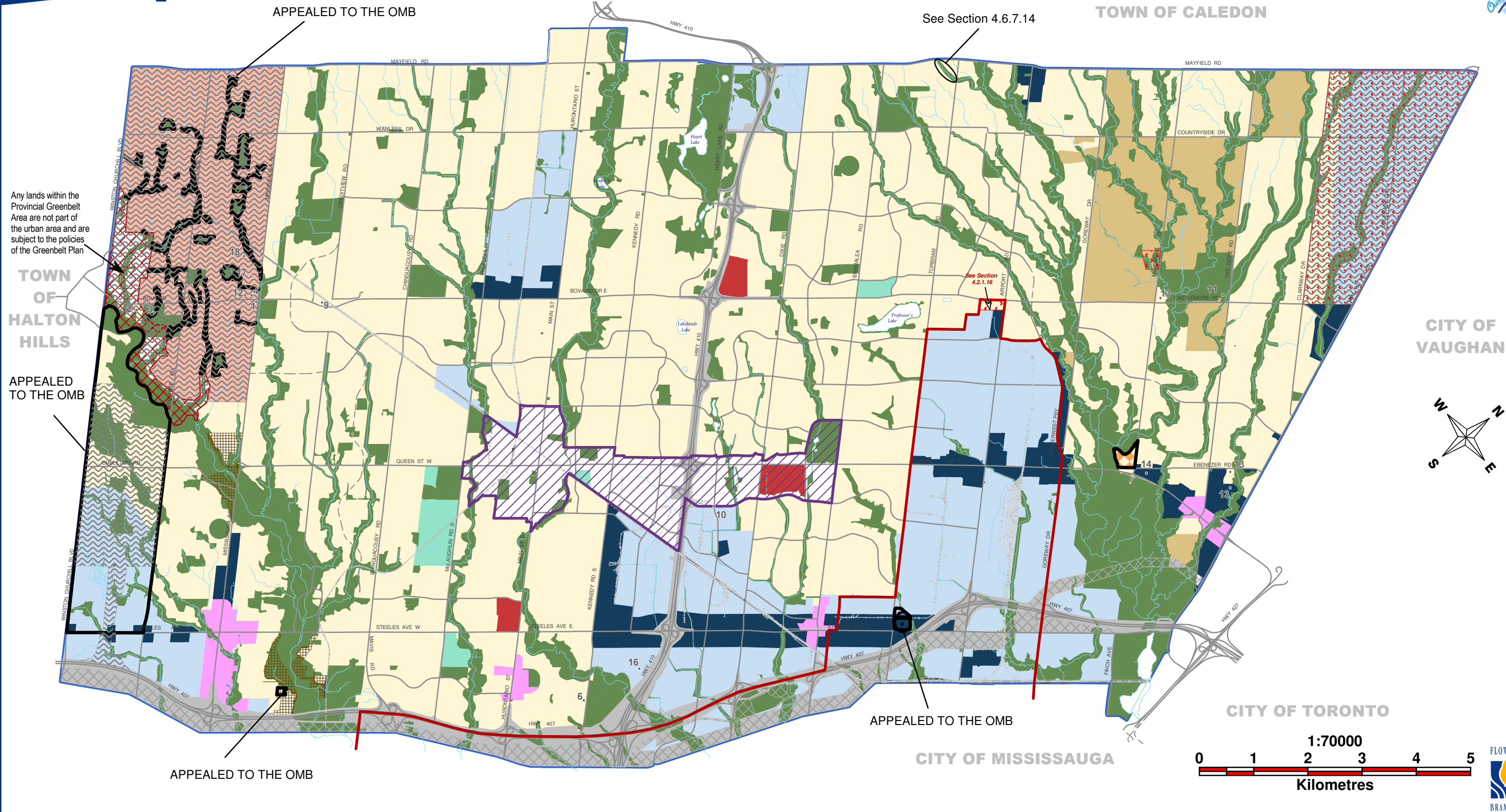
1 Appealed to the Local Planning Appeal Tribunal LPAT Case Number PL980724 (LPAT 3 - City Plan)

1 Lands subject to employment conversion through the Region of Peel's Municipal Comprehensive Review

Community Node Boundary to be Defined



**Schedule 10  
Land Use Designations**



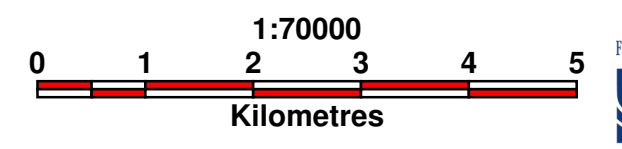
LEGEND			
	RESIDENTIAL		BUSINESS CORRIDOR
	ESTATE RESIDENTIAL		INDUSTRIAL
	VILLAGE RESIDENTIAL		MAJOR INSTITUTIONAL
	REGIONAL RETAIL		OPEN SPACE
	OFFICE		PROVINCIAL GREENBELT AREA/PROTECTED COUNTRYSIDE
	CENTRAL AREA		1 SPECIAL LAND USE POLICY AREA See Section 4.14.3
	N-W BRAMPTON URBAN DEVELOPMENT AREA		SPECIAL STUDY AREA See Section 4.14.1
	CORRIDOR PROTECTION AREA		PROVINCIAL HIGHWAYS
	PARKWAY BELT WEST		L.B.P.I.A. OPERATING AREA
	DEFERRAL		

Last Amended Date  
Feb 28th, 2017

NOTES: LAKES AND PONDS ARE SHOWN FOR CONTEXT PURPOSES

This map forms part of the Official Plan of the City of Brampton and must be read in conjunction with the text, other schedules and secondary plans. The boundaries and alignments of designations on this schedule are approximate and are not intended to be scaled.

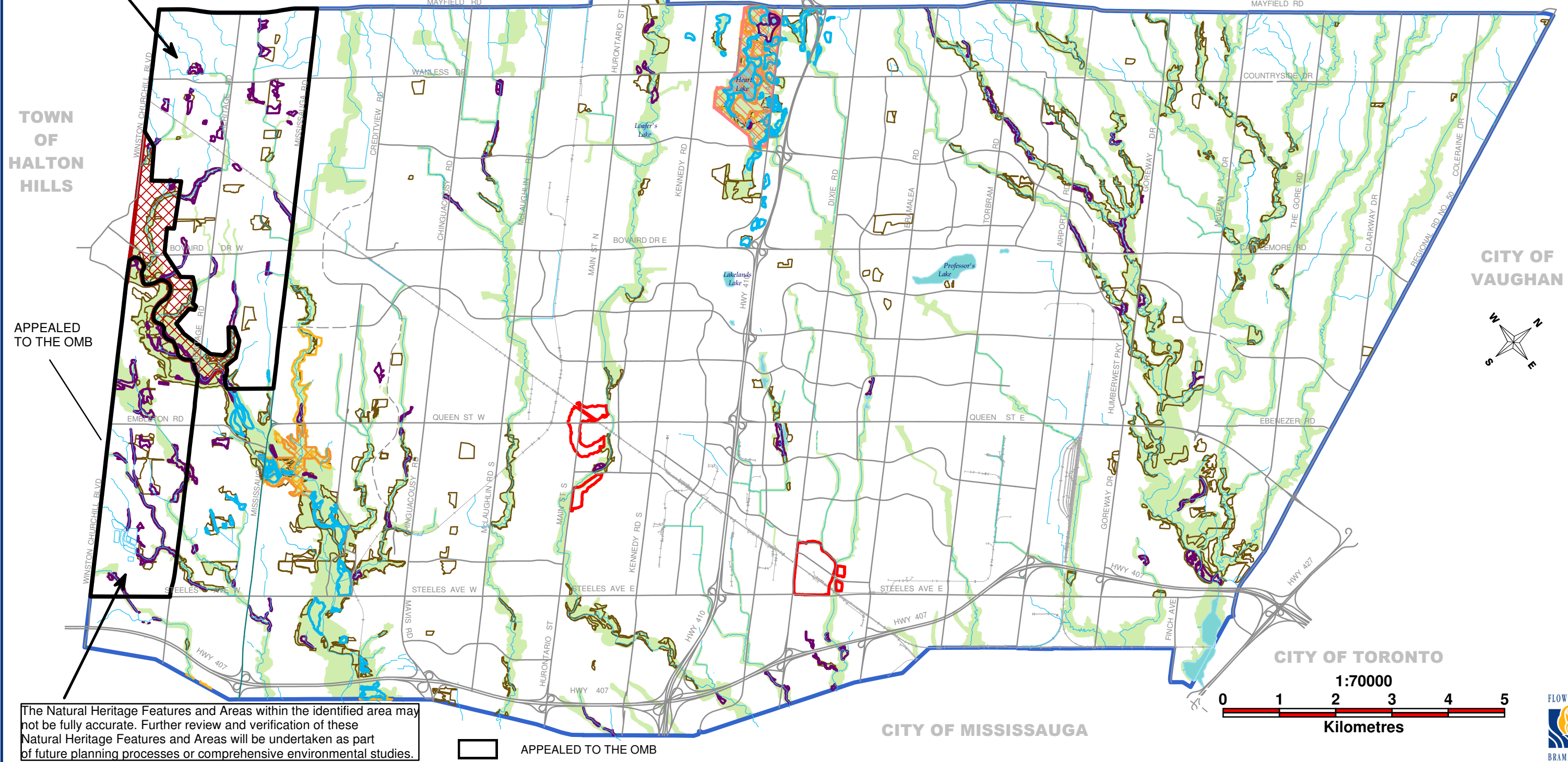
City of Brampton 2006 Official Plan September 2015 Office Consolidation.



## Schedule A GENERAL LAND USE DESIGNATIONS



The Natural Heritage Features and Areas within the identified area may not be fully accurate. Further review and verification of these Natural Heritage Features and Areas will be undertaken as part of future planning processes or comprehensive environmental studies.



APEALED TO THE OMB

The Natural Heritage Features and Areas within the identified area may not be fully accurate. Further review and verification of these Natural Heritage Features and Areas will be undertaken as part of future planning processes or comprehensive environmental studies.

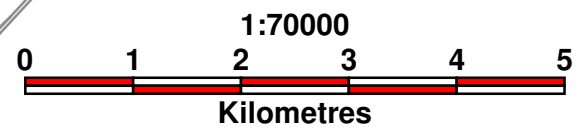
APEALED TO THE OMB

LEGEND			
	VALLEYLAND / WATERCOURSE CORRIDOR		OTHER WETLAND
	WOODLAND		SPECIAL POLICY AREA
	PROVINCIAALLY SIGNIFICANT WETLAND		ENVIRONMENTALLY SENSITIVE / SIGNIFICANT AREA
	LAKES AND PONDS		PROVINCIAL GREENBELT / PROTECTED COUNTRYSIDE
			AREAS OF NATURAL AND SCIENTIFIC INTEREST - LIFE SCIENCE
			AREAS OF NATURAL AND SCIENTIFIC INTEREST - EARTH SCIENCE

Last Amended Date  
Aug 10th, 2015

NOTES: WATERCOURSES AND TRIBUTARIES ARE SHOWN FOR CONTEXT PURPOSES  
The boundaries and alignments of designations on this Schedule are approximate and are not to be scaled. This map forms part of the Official Plan of The City of Brampton and must be read in conjunction with the text, other Schedules and Secondary Plans. Mapping to support the implementation of the "Development, Interference with Wetlands, and Alterations to Shorelines and Watercourses Regulation" is not specifically reflected in this Schedule. Please refer to Appendix C to determine if a property may be affected by this Regulation. The Toronto and Region Conservation Authority and Credit Valley Conservation should be contacted for details regarding their respective requirements for the areas regulated under the said Regulation.

City of Brampton 2006 Official Plan September 2015 Office Consolidation.



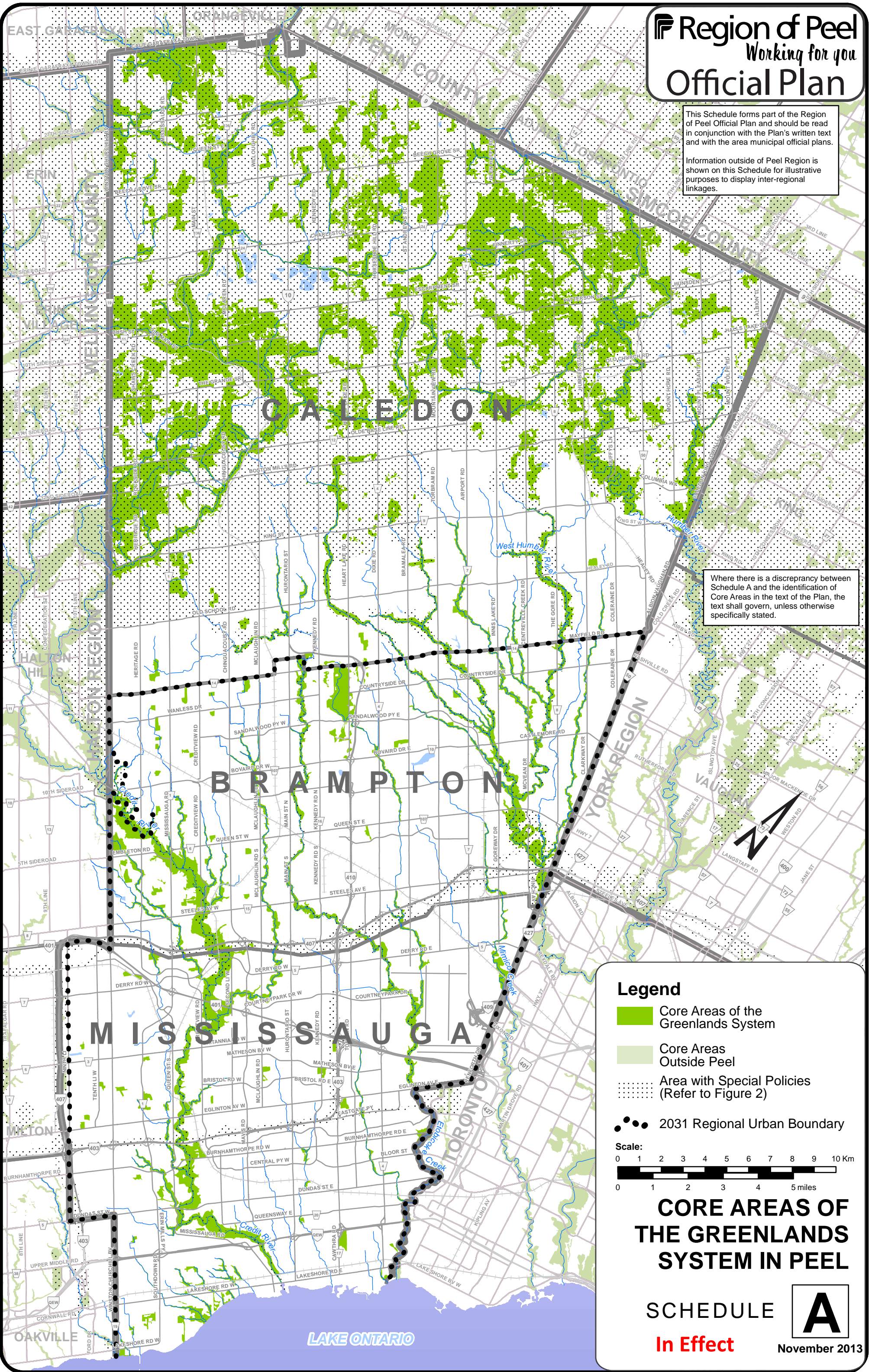
## Schedule D

### NATURAL HERITAGE FEATURES AND AREAS

This Schedule forms part of the Region of Peel Official Plan and should be read in conjunction with the Plan's written text and with the area municipal official plans.

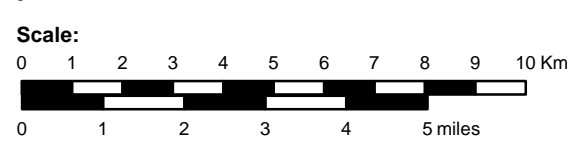
Information outside of Peel Region is shown on this Schedule for illustrative purposes to display inter-regional linkages.

Where there is a discrepancy between Schedule A and the identification of Core Areas in the text of the Plan, the text shall govern, unless otherwise specifically stated.



**Legend**

- Core Areas of the Greenlands System
- Core Areas Outside Peel
- Area with Special Policies (Refer to Figure 2)
- 2031 Regional Urban Boundary

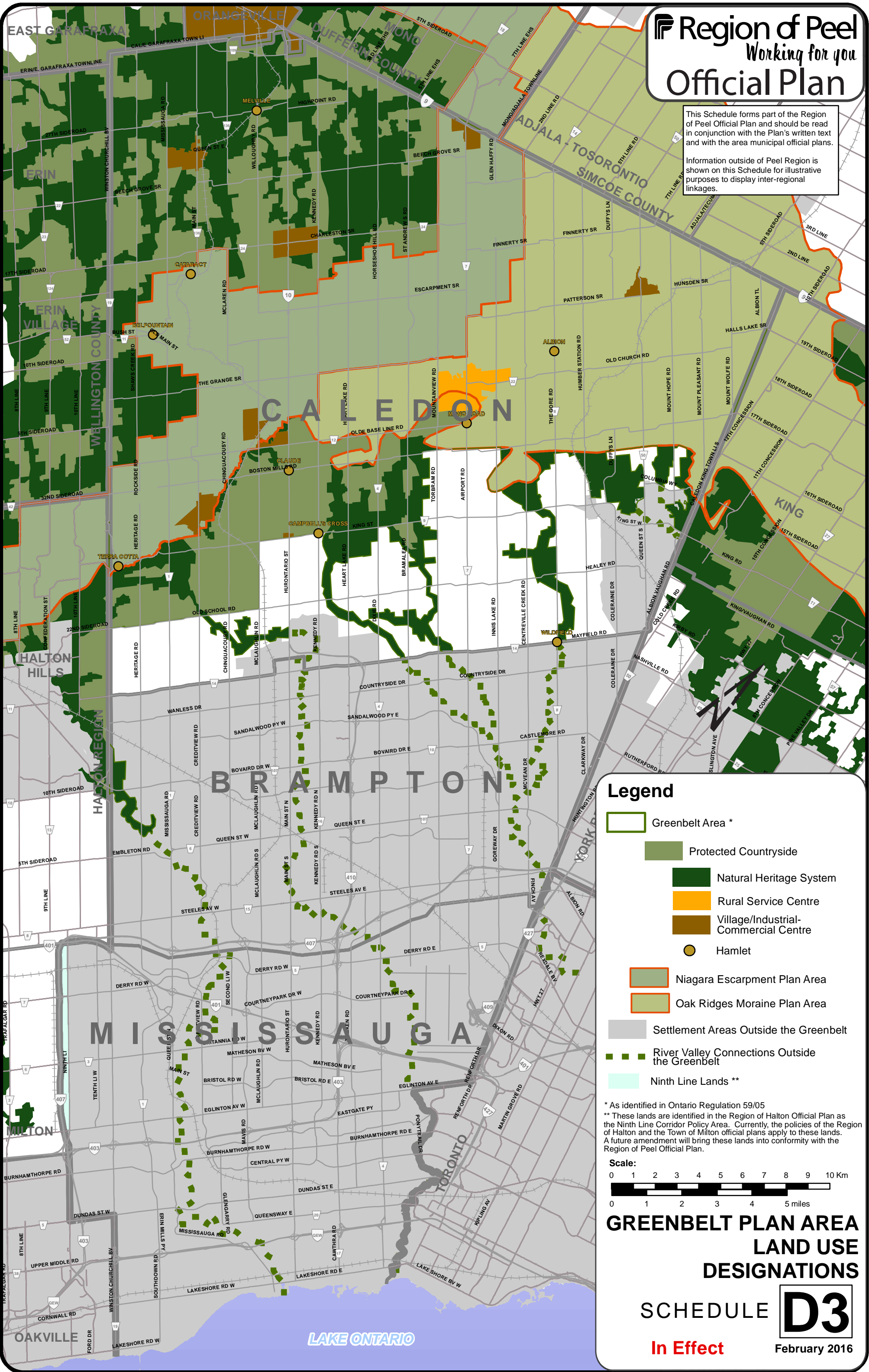


**CORE AREAS OF THE GREENLANDS SYSTEM IN PEEL**

SCHEDULE **A**  
**In Effect** November 2013

This Schedule forms part of the Region of Peel Official Plan and should be read in conjunction with the Plan's written text and with the area municipal official plans.

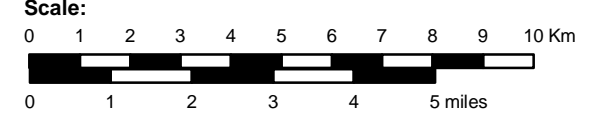
Information outside of Peel Region is shown on this Schedule for illustrative purposes to display inter-regional linkages.



**Legend**

- Greenbelt Area \*
- Protected Countryside
- Natural Heritage System
- Rural Service Centre
- Village/Industrial-Commercial Centre
- Hamlet
- Niagara Escarpment Plan Area
- Oak Ridges Moraine Plan Area
- Settlement Areas Outside the Greenbelt
- River Valley Connections Outside the Greenbelt
- Ninth Line Lands \*\*

\* As identified in Ontario Regulation 59/05  
 \*\* These lands are identified in the Region of Halton Official Plan as the Ninth Line Corridor Policy Area. Currently, the policies of the Region of Halton and the Town of Milton official plans apply to these lands. A future amendment will bring these lands into conformity with the Region of Peel Official Plan.

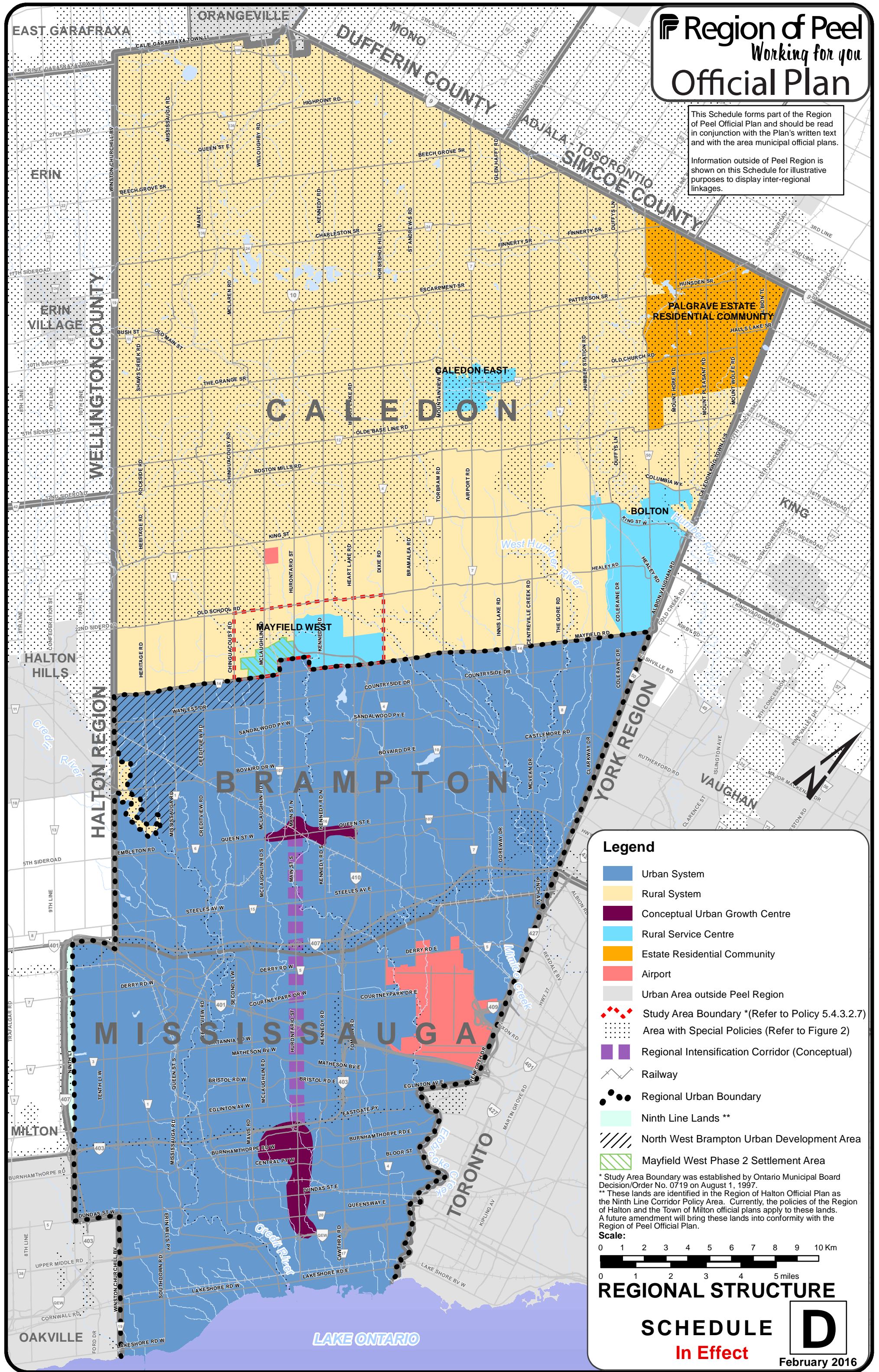


**GREENBELT PLAN AREA  
LAND USE  
DESIGNATIONS**

SCHEDULE **D3**  
In Effect February 2016

This Schedule forms part of the Region of Peel Official Plan and should be read in conjunction with the Plan's written text and with the area municipal official plans.

Information outside of Peel Region is shown on this Schedule for illustrative purposes to display inter-regional linkages.



**Legend**

- Urban System
- Rural System
- Conceptual Urban Growth Centre
- Rural Service Centre
- Estate Residential Community
- Airport
- Urban Area outside Peel Region
- Study Area Boundary \*(Refer to Policy 5.4.3.2.7)
- Area with Special Policies (Refer to Figure 2)
- Regional Intensification Corridor (Conceptual)
- Railway
- Regional Urban Boundary
- Ninth Line Lands \*\*
- North West Brampton Urban Development Area
- Mayfield West Phase 2 Settlement Area

\* Study Area Boundary was established by Ontario Municipal Board Decision/Order No. 0719 on August 1, 1997.  
 \*\* These lands are identified in the Region of Halton Official Plan as the Ninth Line Corridor Policy Area. Currently, the policies of the Region of Halton and the Town of Milton official plans apply to these lands. A future amendment will bring these lands into conformity with the Region of Peel Official Plan.

**Scale:**  
 0 1 2 3 4 5 6 7 8 9 10 Km  
 0 1 2 3 4 5 miles



**APPENDIX B.**  
**ECOLOGICAL LAND CLASSIFICATION FIELD SHEETS**

PLANT SPECIES LIST

SITE: UG2 TRANS HWAY (1)

POLYGON: FOD 7-2a

DATE: 11/15/19

SURVEYOR(S): NINE

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
JUGLOR													
CONSTA													
NATRIDA													
FRANIGR													
QUE RUIR													
RUACATI													
PARTUSER													
ACESASA													
TILANE R													
ERAPENS													
POPFREM													
PAPERAT													
HEMFIULV													
GEUCANA													
DACGLOM													
CIULATI													
PRUSERO													
PALPETI													
CIRLUITE													
ARITRITRI													
CARPEUS													
CARRAC													

POLYGON SURVEYOR(S):

SITE: UTMZ: UTMZ: UTMZ:

DATE: UTMN: UTMN: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY	
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYCE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> MEADOW <input type="checkbox"/> BARREN <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	
SITE						
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW <input type="checkbox"/> OTHER

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	2	JUGLOR >> OVER RUIR
3 SUB-CANOPY	3	4	ERAPENS >> PORTREH
4 UNDERSTORY	3/4	4	ERAPENS >> PRUSERO
5 GROUND LAYER	5-7	4	GRAMINOID >> CARPEUS

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	0	0	0	0
DEADFALL/LOGS	0	0	0	0

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 <i>Trinidad</i>
	POLYGON: F005-30
	DATE: July 15/19
	SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
JUGUICR	R												
VITRIPA		O	O	O									
FEDAEHR	R	R	O	O									
CAROVAT	O	A	O										
ACESASA	O	O	O										
TLARER	R	R											
RAUTRA		O											
QUERUBR	A	R	R										
CORRACE		O											
RUBRATA		O											
POTRAN		R											
PUISERO		R											
QUETACR		R											
REUVIG		O											
DACGOM		R											
QUEALBA		R	O										
RODELT		O											
CORPENS		O											
CIRLUITE		O											
CEVALCED		O											
OSTURIG		R											
CARROSE													

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input checked="" type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b> <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBSIFICAL DEP. <input type="checkbox"/> BEDROCK			<b>COVER</b> <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	<b>COMM. TYPE</b> <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<b>OTHER</b> <input type="checkbox"/> HERBGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	3	QUERUBR > CAROVAT = ACESASA
3 SUB-CANOPY	2	4	CAROVAT >> ACESASA
4 UNDERSTORY	3	2	ACESASA = FRAPENS
5 GROUND LAYER	6/2 4	4	CARPENS >> CIRLUITE

HT CODES: 1 = > 25m 2 = > 10-25m 3 = > 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES			
	< 10cm	10-24cm	25-50cm	> 50cm
FIRM	R	R	R	R
DECEAYED				

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

**PLANT SPECIES LIST**

SITE: 402 Transhway (1)

POLYGON: FODS

DATE: July 15/19

SURVEYOR(S): NMT

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
DINISTRO	R												
PODPECT	R	R											
PCENEGUN		R	R										
PCGLBY		R											
VITRIPA		R	O										
TUGNIGR		R	R	R									
TILAMER		O	O	O									
EDGUGRAN		R	O										
ILHAMER		R											
CORSE RJ													
FRDNHGR		R	O										
ACESASA		A	O	O									
CPROVAT		O	O	O									
BETALLE			R										
CIRLITE				O									
QUTHPA				O									
FRANIGR		O	O										
ACE SACC			R										
DEPLAT			R										
NRTMIUV			R										
SOLCAYA				O									
QUEALPA		R											
QUE RURE		O	R	R									
RIKATN				O									

→ open sides only, no crosses  
 → west & south sides

**POLYGON SURVEYOR(S):**

SITE: \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

POLYGON: \_\_\_\_\_

DATE: \_\_\_\_\_

UTMN: \_\_\_\_\_

**POLYGON DESCRIPTION:**

<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> PROCELIODUS <input type="checkbox"/> CONFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRUAIRE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION		
<b>SITE</b>	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBRIFICAL DEP. <input type="checkbox"/> BEDROCK	<b>COVER</b>	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	<b>COMM. TYPE</b>	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<b>OTHER</b>	<input type="checkbox"/> HERDGRW

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	1	1	DINISTRO
2 CANOPY	2	3	CAROBAT = OVED SP
3 SUB-CANOPY	2	4	ACESASA = CAROBAT
4 UNDERSTORY			no interior survey conducted
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = > 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

**COMMUNITY MATURITY:**

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: HAWK COB TROST-VALLEY (1)
	POLYGON: CUM-1-1a
	DATE: July 15/10
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
VITRIPD						ELYREDE					
COVARI						ERIANNU					
LODHACK						PUNIGR					
FLKDUST						DCABFS					
BRONDE						DACGLOH					
TUGKIGR						ACENEGU					
RLUTYPA						KUMCRIS					
ACE SASD											
DBUCARO						QUE RUCB					
TRPANGU						RICPUNG					
CIRARVE						RICGLAU					
CRAFTGOC						DIPVYFU					
MALPUMI						PANGAPI					
PRWIRG						PALACFA					
ARCHINU						BETBEND					
CONARVE						FRAATER					
LOUTATO						PINSTRO					
TUNCOMM						PINIGR					
SOLCANVA						HELAFBA					
FESRUBR						ULMANER					
PODBELT						PRUSERO					
LOTGOLV						COTGOGG					
CICINTY						AVE SATI					
AEPLAT						RURIDAI					
TPROFEI						SPINDAUG					
SODRVE						PODBELT					
PLDARVU											

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY																				
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYICE CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARRON <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION																				
<p>STAND DESCRIPTION:</p> <p>SPECIES IN ORDER OF DECREASING DOMINANCE (MUCH GREATER THAN; &gt; GREATER THAN; = ABOUT EQUAL TO)</p> <p>1 EMERGENT</p> <p>2 CANOPY</p> <p>3 SUB-CANOPY</p> <p>4 UNDERSTORY</p> <p>5 GROUND LAYER</p> <p>HT CODES: 1 = &gt; 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = &lt; 0.2m            CVR CODES: 0 = NONE 1 = 1-10% 2 = &gt; 10-25% 3 = &gt; 25-35% 4 = &gt; 35-60% 5 = &gt; 60%</p>																									
<p>SIZE CLASS ANALYSIS:</p> <table border="1"> <thead> <tr> <th>TREES</th> <th>&lt; 10cm</th> <th>10-24cm</th> <th>25-50cm</th> <th>&gt; 50cm</th> </tr> </thead> <tbody> <tr> <td>STANDING SNAGS</td> <td>&lt; 10cm</td> <td>10-24cm</td> <td>25-50cm</td> <td>&gt; 50cm</td> </tr> <tr> <td>DEADFALL/LOGS</td> <td>FIRM &lt; 10cm</td> <td>10-24cm</td> <td>25-50cm</td> <td>&gt; 50cm</td> </tr> <tr> <td></td> <td>DECAYED &lt; 10cm</td> <td>10-24cm</td> <td>25-50cm</td> <td>&gt; 50cm</td> </tr> </tbody> </table>						TREES	< 10cm	10-24cm	25-50cm	> 50cm	STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm	DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm		DECAYED < 10cm	10-24cm	25-50cm	> 50cm
TREES	< 10cm	10-24cm	25-50cm	> 50cm																					
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm																					
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm																					
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm																					
<p>COMMUNITY MATURITY:</p> <p><input type="checkbox"/> PIONEER <input checked="" type="checkbox"/> YOUNG <input type="checkbox"/> MID-AGE <input type="checkbox"/> MATURE <input type="checkbox"/> OLD-GROWTH</p>																									

2a-upper

\* along road side  
 Kk with CUT-1-1 undergrowth to rim of RNU types

PLANT SPECIES LIST	SITE: 407 Transitions (1)
	POLYGON: CUP1
	DATE: July 15/19
SURVEYOR(S): NMF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
FRANIGR		R											
FRAPALS			O	O									
ACERLAT	R												
VITRIPAK		O	O	O									
RUTTRPA			O										
RUBRATM			O										
DECHINU			O										
SOLKANU			O										
QUERUBR	R												
HLDMER		O	O										
ACESASA	R	O	R										
TUSNIGR		R	O	R									
FAGGRAN	R	R											
SALSOP	R												
CAROVST		R	R										

- No access  
 - observations  
 - blue nest  
 - medium  
 - ridge

POLYGON SURVEYOR(S):	SITE:	POLYGON:
	UTM2Z:	
UTM1Z:		UTM1N:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> FEN <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRairie <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER	COMM. TYPE	OTHER		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW		

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	1	ACERSP > FDGGRAN > FRAX SP
3 SUB-CANOPY	3	3	HLDMER > QMER SP = FRAX SP
4 UNDERSTORY			No interior survivors understorey
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = 10-25% 3 = 25-35% 4 = 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 402 Transition
	POLYGON: CUPD-3
	DATE: July 15/19
	SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
TILAMER		A	R	R									
TUGUIGR		A	R	R									
FRPENS		O	A	O									
ACESSSA		O	O										
DACGLON				O									
PARINSER				A									
VITRUP			O	O									
PAPDAU				O									
PRUTRIRL				R									
GRUTE				O									
CAROVAT			O	R									
GEUCANA				R									
CARPENS				O									
OSTVIRG				R									

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACHBAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LND <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORG <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> SUCCESSIONAL <input type="checkbox"/> CONFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input checked="" type="checkbox"/> PLANTATION
SITE			COVER	COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBTERR. DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> = MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	3	TUGUIGR
3 SUB-CANOPY	2R	3	TILAMER > CAROVAT
4 UNDERSTORY	3H	3	FRPX SP.
5 GROUND LAYER	5H	4	PBRINSE = DACGLON

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES		
	< 10cm	10-24cm	> 25-50cm
FIRM	R		
DECAYED		R	

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 107 Tregon Falls
	POLYGON: CUM-10/CUT10 (2)
	DATE: 5/25/19
SURVEYOR(S): NME	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
RUTYPIA			A			TAROFF					
ELDANGU						DEGLON					
COBVARIA						MAL SP.					
HELACRA						NITRIPA					
PODPRAT						SHRVLG					
FESRUBR						SUNOVAN					
THLPERE						DCNEGU					
ACENEGL						ACESSSA					
LOTORON						ACEPLAT					
PERVST						HYDREPE					
OCINTH						DRUN SP.					
RRORVER						PRUVRG					
CIRARVE						CIUVRG					
RUACASTY						SUNARVE					
ELVREPE						PINDIGRA					
ARCNUJU						PINSTRU					
SUSVIGR						POSTRCH					
RUMCRIS						ELAMBE					
FRDPENIN						DAGLOM					
PICDUNG						HIOBALBA					
PDBERVUN						PARINSE					
HEMFULV						ROBSEU					
PODDELT						FRANTGR					
CAROVST						COTCOGG					
DIDSYFI						GALVERU					
SOLCAND											
PICABIE											

POLYGON SURVEYOR(S) LIST	SITE:	POLYGON:
	UTMZONE:	UTM:
	UTM:	UTM:

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> GREYICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED LVD <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> FOND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRADIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBCICIAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERDGRW
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STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	3	1	TIGNIGR > CAROVST
3 SUB-CANOPY			
4 UNDERSTORY	4	3	RUTYPIA > ACENEGL
5 GROUND LAYER	5	5	CORVARI = POA SP.

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST	SITE: 402 Transitory (3)
	POLYGON: CUT10/CUW10
	DATE: July 15/19
SURVEYOR(S): NMF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
SUGNIGRA	0	0	0										
ACEVEGUD	0	0	0										
RUACATN			0										
ELANGU			R										
CORSE RI			0										
PUDRUD			0										
DUUCARO			0										
BROUNER			0										
TAROFEI			R										
QUE RUBR			R										
ACESDSA			R	0									
FRAPENS			R	0									
UNDTATA			0										
TUFART			0										

POLYGON SURVEYOR(S) LIST	SITE:	POLYGON:
	UTMZ:	UTME:
	UTMN:	UTMN:

- in Transitory

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input checked="" type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL <input type="checkbox"/> TREED	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input checked="" type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECEIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input checked="" type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	3	SUGNIGR > QUE RUBR
3 SUB-CANOPY			
4 UNDERSTORY	3/4	3	RUACATN > ELANGU
5 GROUND LAYER	5-7	4	BROUNER > DUUCARO

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS	DEADFALL/LOGS
0 < 10cm	R	
	10-24cm	
	25-50cm	
	10-24cm	
	25-50cm	
	10-24cm	
	25-50cm	
	> 50cm	

COMMUNITY MATURITY:  
 PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 401 Transdura (3)
	POLYGON: H
	DATE: July 15/19
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
QUEPUE	O	O											
TUGUIOR	A	O	O										
BUACATI													
VTRIPK		O	O	O									
QUEALBA	R												
SOLCAVA													
POPELT	O	R											
ACNEGU		O	O										
TILAMER	R												
ACEBPSA	O	O	O										
ERDPELS	O	O	O										
ERDPELR		O	O										
BROWER			O										
SEUALT			O										
POPPRET			O										
CAROVAT	O	O	O										
LONDTATA			O										
QUEMARA	O												
PRINISE			O	O									
SOLALBA	R												
QUEHACR	O	O	O										
POPTREH	R												
PINDSUV	R												

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:
		DATE:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST
SITE			COVER	COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			Variable
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.3-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 Transitory (3)
	POLYGON: CUW1C
	DATE: Aug 2/19
SURVEYOR(S): JHE	

LAYERS: 1 = CANOPY TREES > 10m, 2 = SUB-CANOPY, 3 = SAPLINGS & SHRUBS, 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT, A = ABUNDANT, O = OCCASIONAL, R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
TILAMER														
LEAF SPR														
CDROVDT														
PORTULM														
ALGALGR														
LOUTATA														
RHPLM1														
CORPAC														
QUENRIR														
SPRDET														
PLUTYPI														
FRALM1														
CNEINSE														
CRUITE														
REWRD1 (MINE)														
ALCPSA														

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDIOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARRON <input type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		OTHER	
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> HEDGEROW <input type="checkbox"/> PLANTATION	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	7	4	CDROVDT > QUENRIR
3 SUB-CANOPY	3	3	QUENRIR > ALGALGR > CRUITE
4 UNDERSTORY	1	2	ALGALGR > CRUITE
5 GROUND LAYER	5-7	4	CIRUITE > RHA/CATI

HT CODES: 1 = > 25m, 2 = > 10-25m, 3 = 2-10m, 4 = 1-2m, 5 = 0.5-1m, 6 = 0.2-0.5m, 7 = < 0.2m  
 CVR CODES: 0 = NONE, 1 = 1-10%, 2 = > 10-25%, 3 = > 25-35%, 4 = > 35-50%, 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	0	0	0	0	0
DECAYED	0	0	0	0	0

ABUNDANCE CODES: A = ABUNDANT, O = OCCASIONAL, R = RARE, N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST

SITE: 1033 Transition (3)

POLYGON: SWT2-2

DATE: June 16/19

SURVEYOR(S):

LAYERS: 1 = CANOPY TREES > 10m, 2 = SUB-CANOPY, 3 = SAPLINGS & SHRUBS, 4 = GROUND LAYER

VALUE CODES: D = DOMINANT, A = ABUNDANT, O = OCCASIONAL, R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
BLDRBLKT														
PHARAUST														
UJHARER	R													
SOLERIO														
UTRIPA														
BELEGUN	R													
NEVRETT														
SKANIK														
SEUCANVA														
ACESACK														
TRPLATE														
CAREX STIG														
KUNGRIS														
LOTORON														
DIPSACU														
SUNTEVU														
LVTSALI														

POLYGON

SITE: SWT2-2

SURVEYOR(S):

DATE: June 16/19

UTMZ: UTMZ: UTMZ: UTMZ:

UTME: UTMN: UTMN: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input checked="" type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK				<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX <input type="checkbox"/> HEDGEROW <input type="checkbox"/> OTHER

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	NE DECU = UJHARER
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	3-4	3	SOLERIO >> ACENDEGUN
5 GROUND LAYER	5-7	5	UTRIPA = LVTSALI

HT CODES: 1 = > 25m, 2 = > 10-25m, 3 = 2-10m, 4 = 1-2m, 5 = 0.5-1m, 6 = 0.2-0.5m, 7 = < 0.2m

CVR CODES: 0 = NONE, 1 = 1-10%, 2 = > 10-25%, 3 = > 25-35%, 4 = > 35-60%, 5 = > 60%

SIZE CLASS ANALYSIS:

	TREES	STANDING SNAGS	DEADFALL/LOGS
< 10cm	R		
10-24cm		R	
25-50cm			R
> 50cm			

ABUNDANCE CODES: A = ABUNDANT, O = OCCASIONAL, R = RARE, N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST	SITE: 407 - <i>Transtoma</i> (3)
	POLYGON: CUM-15/CUT-16
	DATE: July 15, 1988
SURVEYOR(S): K. J. H. C.	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.	
	1	2	3	4			1	2	3	4		
PHADRUM				0								
SOLCANA				0								
ULMIFER			R									
PAUSTUPI			O									
PLAUST				R								
ACEVEGU			OR									
POPPROT				O								
UTRIPA			R	O								
RENATA			O	O								
AKMAMU				O								
SALUBA			R									
TPSP.				R								
DRSFEU				O								
POPEIT			R									
JUNIGR			R									
CORPAC				O								
CORVARI				O								
BRONER				O								
ELMREPS				O								
CRAVE				O								
PINSTRO				O								
BRAPELIS			R									
RYMADIS				R								
ASCYRI				R								
GRONIER				O								
SM-LATF				O								

POLYGON SURVEYOR(S):	SITE:	POLYGON:	
	UTMZ:	UTME:	DATE:
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input checked="" type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW
---	--	---	--	--	--	---	--	-----------------------------------

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	POPEIT
2 CANOPY	3	1	ACEVEGU = PINSTRO
3 SUB-CANOPY			
4 UNDERSTORY	4	2	PAUSTUPI > CORPAC
5 GROUND LAYER	5-7	5	PARARU > GRAMINOIDIS & VITRIPA

HT CODES: 1 = >25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST

SITE: 407 Transhawa (3)

POLYGON: HAS20

DATE: July 15/19

SURVEYOR(S): NYPE

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PARAUST														
JUGNIGR			R	R										
ELDANGU			R											
THUDCCI			R											
KURIDDE			R											
ASCYRI			R											
ACENECCU			R											
CORSERI			O											
GORRICE			O											
NITRIDP			O											
UMDNER			R											
THPANGU			R											
LYTSPU			R											

POLYGON SURVEYOR(S):

SITE: HAS20

UTMZ: 19S 15E

UTME: 407

DATE: July 15/19

UTMN: 20

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input checked="" type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b>	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEROCK	<b>COVER</b> <input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<b>COMM. TYPE</b> <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<b>OTHER</b> <input type="checkbox"/> HEDGEROW	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	2	JUGNIGR > ELDANGU
5 GROUND LAYER	4	5	PARAUST

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2a-1000000

PLANT SPECIES LIST	SITE: H 07 - Vanshadow (3)
POLYGON: H A S 2 a	
DATE: July 16/19	
SURVEYOR(S): NHE	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PURDUST				D										
SALABR			O	R										
ACEBEGU			R	O										
ZADPRU				O										
PLACHT				R										
SUGNIGU				O	R									
VTRIPAR				O	O									
BETRAPP				R										
TWA SP				R										
ELADPUGU				R										

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:
		DATE:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING HIGHLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL <input type="checkbox"/> TREED	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBTICAL DEP. <input type="checkbox"/> BEDROCK				
COVER	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED				
COMM. TYPE	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX				
OTHER	<input type="checkbox"/> HEDGEROW				

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT		3	1 SALABRA
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	PURDUST >> PAVAKU

HT CODES: 1 = >25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

	TREES	STANDING SNAGS	DEADFALL/LOGS
< 10cm	R		
10-24cm			
25-50cm			
> 50cm			

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

20m - lowest





PLANT SPECIES LIST	SITE: 407 Transition (3)
	POLYGON: M0N2-261
	DATE: 2/6 5/19
	SURVEYOR(S): HUBB

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.				
	1	2	3	4			1	2	3	4					
DIADEQUA				D											
LITSEA				O											
ACROBEGU				R											

POLYGON	SITE:	POLYGON:
SURVEYOR(S):	SURVEYOR(S):	DATE:
UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION:					
SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CORR. BEDROCK	<input type="checkbox"/> LAKESTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARCH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER		CONM. TYPE	OTHER	
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW		

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	PHADARUN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

	TREES	STANDING SNAGS	DEADFALL/LOGS
< 10cm	< 10cm	< 10cm	< 10cm
10-24cm	10-24cm	10-24cm	10-24cm
25-50cm	25-50cm	25-50cm	25-50cm
> 50cm	> 50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST

SITE: 407 Transylvania

POLYGON: CUW1b

DATE: 5/24/19

SURVEYOR(S): JPC

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
TUGNIGR	0													
VTRIPA		0	0											
PRUVRG			0											
ACENEGU			0											
FRAPENM			0											
UCMAREC			0											

POLYGON SURVEYOR(S):

SITE: CUW1b

UTMZ: 18N 08W

UTME: 650000

UTMN: 4700000

DATE: 5/24/19

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL	<input type="checkbox"/> ORGANIC	<input type="checkbox"/> LACUSTRINE	<input type="checkbox"/> NATURAL	<input type="checkbox"/> PLANKTON	<input type="checkbox"/> LAKE
<input type="checkbox"/> WETLAND	<input checked="" type="checkbox"/> MINERAL SOIL	<input type="checkbox"/> RIVERINE	<input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> SUBMERGED	<input type="checkbox"/> POND
<input type="checkbox"/> AQUATIC	<input type="checkbox"/> PARENT MATERIAL	<input type="checkbox"/> BOTTOMLAND	<input type="checkbox"/> OPEN	<input type="checkbox"/> FLOATING LND	<input type="checkbox"/> RIVER
	<input type="checkbox"/> ACIDIC BEDROCK	<input type="checkbox"/> TERRACE	<input type="checkbox"/> SHRUB	<input type="checkbox"/> GRAMINOID	<input type="checkbox"/> STREAM
	<input type="checkbox"/> BASIC BEDROCK	<input type="checkbox"/> VALLEY SLOPE	<input checked="" type="checkbox"/> TREE	<input type="checkbox"/> FORB	<input type="checkbox"/> MARSH
	<input type="checkbox"/> CARB. BEDROCK	<input checked="" type="checkbox"/> TABLELAND		<input type="checkbox"/> LICHEN	<input type="checkbox"/> SWAMP
		<input type="checkbox"/> ROLLING UPLAND		<input type="checkbox"/> BRYOPHYTE	<input type="checkbox"/> FEN
		<input type="checkbox"/> CLIFF		<input type="checkbox"/> DECIDUOUS	<input type="checkbox"/> BOG
		<input type="checkbox"/> TALUS		<input type="checkbox"/> CONIFEROUS	<input type="checkbox"/> BARREN
		<input type="checkbox"/> CREVICE/CAVE		<input type="checkbox"/> MIXED	<input type="checkbox"/> MEADOW
		<input type="checkbox"/> ALVAR			<input type="checkbox"/> PRAIRIE
		<input type="checkbox"/> ROCKLAND			<input type="checkbox"/> THicket
		<input type="checkbox"/> BEACH/BAR			<input type="checkbox"/> SAVANNAH
		<input type="checkbox"/> SAND DUNE			<input type="checkbox"/> WOODLAND
		<input type="checkbox"/> BLUFF			<input type="checkbox"/> FOREST
					<input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER					<input type="checkbox"/> HERBEGROW
<input type="checkbox"/> SHALLOW WAT.					
<input type="checkbox"/> SURFICIAL DEP.					
<input type="checkbox"/> BEDROCK					

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2/3	4	TUGNIGR 2 PRUVRG
3 SUB-CANOPY	3	3	ACENEGU
4 UNDERSTORY	4	2	FRAPENM > PRUVRG
5 GROUND LAYER	6/7	3	VTRIPA > FRAPENM

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-50% 4 = >50-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	2			
DEADFALL/LOGS				
DECAYED				

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 401 Trans-humay (3)
POLYGON: MAS2-10a	
DATE: 5/15/14	
SURVEYOR(S): NME	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PINDARUN														
WETLAND														
WATER														
WETLAND														
WETLAND														

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input checked="" type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CANYON <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECAIDIOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOS <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREE	<input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBEGROW <input type="checkbox"/> OTHER
---	---	--	--	--	--	--	---	--

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	455		TYP LOT 1 > PINDARUN

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS	DEADFALL/LOGS
< 10cm	< 10cm	< 10cm
10-24cm	10-24cm	10-24cm
25-50cm	25-50cm	25-50cm
> 50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  
 PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 Transition (3)
	POLYGON: CHM-10.1
	DATE: JULY 15/19
	SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
EMPESUL						CORVIRI					A
SUNLATE						RCSYRI					R
PLRDUST						VICCRAC					A
POPRBT						LINVLUG					R
VICCRAC						RHVRADI					O
HUPPERE						LUTSALI					R
LOTCCORN						VELLUBA					O
FLUREPE						ACTEABSID					O PR
CIEARVE						AMBARTE					R
SUMNOAN						CICLVTY					R
SOVARVE						HALSP					O
PLAUKK						SALSP					O
DAUCARO						DEURIEU					O
DIRSYTU						PURDUST					O
RUDCASTI						RURTYPA					O
TJUNIGR						CORSERI					R
RUMCEIS						COERRE					R
SOLCANUD						RUDGATH					R
REDINER											
DINGLOM											
THLARVE											
RODOLIT											
DANSTRO											
PICPIUG											
COERRE											
HEAUGU											

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSTON <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERDGEROW <input type="checkbox"/> OTHER

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5.7	5	COARPEI = SUMLODI = PODPRAT

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES		
	< 10cm	10-24cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm
DECEASED	< 10cm	10-24cm	25-50cm
	< 10cm	10-24cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST

SITE: 407 Trans Highway (page 3)

POLYGON: CWW/C

DATE: Aug 9/19

SURVEYOR(S): JMK

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
RODELIT														
SA SP														
WILMSTER														
SUGVIGK														
CAROUAT														
MTRIPA														
QUETINAR														
ROPTREH														
KLACETA														
FRAPPENS														
ROTTPL														

POLYGON SURVEYOR(S):

SITE:

UTMZ:

UTME:

UTMN:

DATE:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> FOND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER		COMM. TYPE	OTHER	
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW	

STAND DESCRIPTION:

SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

LAYER	HT	CVR
1 EMERGENT		
2 CANOPY	1	4
3 SUB-CANOPY	4	2
4 UNDERSTORY	3	3
5 GROUND LAYER		

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-50% 5 = >50%

SIZE CLASS ANALYSIS:

TREES	< 10cm			10-24cm			25-50cm			> 50cm		
	STANDING SNAGS	FIRM	DECAYED	STANDING SNAGS	FIRM	DECAYED	STANDING SNAGS	FIRM	DECAYED	STANDING SNAGS	FIRM	DECAYED

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST

SITE: 407 Trensburg

POLYGON: FANZ-201

DATE: July 15/14

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PANACON														
PASTBET1														
RUACACT1			R											
CRABBE			R											
SUNEDTE			O											
VICCRBC			O											

POLYGON SURVEYOR(S):

SITE: UTMZ: UTM: UTMN:

DATE: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input checked="" type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LND <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FOG <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

SITE

COVER

OPEN  
 SHRUB  
 TREED

COMM. TYPE

INCLUSION  
 COMPLEX

OTHER

HEDGEROW  
 PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4		RUACACT1
5 GROUND LAYER	1-5	5	PANACON

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m

CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 402 Transpex
	POLYGON: HAM2-2C
	DATE: July 16/19
	SURVEYOR(S): NHE

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
TRPAUGU						TRPAUGU					
PARAUST						PARAUST					
PARABREV						PARABREV					
PARUSTEN						PARUSTEN					
COGSERI						COGSERI					
TILAMEK						TILAMEK					
TILUGGI						TILUGGI					
REVEREV						REVEREV					
ROBSEU						ROBSEU					
SALCANVA						SALCANVA					
SCRIBACR						SCRIBACR					
CEGSTRP						CEGSTRP					
TRPACT						TRPACT					
LAGTINA						LAGTINA					
FRAPENW						FRAPENW					
SANDISC						SANDISC					
SALCVIG						SALCVIG					
PENINDA						PENINDA					
VIBTRIL						VIBTRIL					
CAROVIT						CAROVIT					
DEKAGEOU						DEKAGEOU					
POADACU						POADACU					
PAUPRST						PAUPRST					
DCAMILL						DCAMILL					
QUEHACR						QUEHACR					
MSFORF						MSFORF					
ULTAMEK						ULTAMEK					

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZONE:	UTM:	DATE:
		UTM:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DICHOLOUS <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> CONFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION <input type="checkbox"/> OTHER
SITE:					
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK					
COVER:					
<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED					
COMM. TYPE:					
<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX					
OTHER:					

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO)
1 EMERGENT			
2 CANOPY	3	1	PORTRENS FRAPENS
3 SUB-CANOPY	4	1	TILUGGI
4 UNDERSTORY	4	1	VIBTRIL
5 GROUND LAYER	4/5	5	TRPACT = PARABREV = PARUSTEN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS				
DEADFALL/LOGS				

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



**PLANT SPECIES LIST**  
 SITE: Hwy 407 Transitionary  
 POLYGON: SWD4-1a (4)  
 DATE: June 11/19  
 SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
POPDEL1	R					CIRRAVE					
PLAUST						TILAYER		R			
SALEXIG						HELALBA					
SALBET1						CIRVULG					
TRPHYNBRI						SOLSP.					
CORRUGO1						SALALBA					
PLADARUN											
TRPADUGU											
CORSEEL											
VITRIPD											
TRROCF1											
MELALBA											
SALERIO											
DICRHIND											
CRST SP											
DANCAED											
SOL SP.											
POACORIP											
FRADENDU											
VICCRAC											
RINCAFI											
ACEASA											
POTSIMP											
VERDAST											
LYTSOLI											
ROBSEU											
SOLNIVE											

**POLYGON SURVEYOR(S):**  
 SITE: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 UTMZ: \_\_\_\_\_ UTM: \_\_\_\_\_ UTMN: \_\_\_\_\_

**POLYGON DESCRIPTION:**  
 SYSTEM:  TERRESTRIAL  WETLAND  AQUATIC  
 SUBSTRATE:  ORGANIC  MINERAL SOIL  PARENT MATERIAL  ACIDIC BEDROCK  BASIC BEDROCK  CARB. BEDROCK  
 TOPO. FEATURE:  LACUSTRINE  RIVERINE  BOTTOMLAND  TERRACE  VALLEY SLOPE  TABLELAND  ROLLING UPLAND  CLIFF  TALUS  ALVAR  ROCKLAND  BEACH/BAR  SAND DUNE  BLUFF  
 HISTORY:  NATURAL  CULTURAL  
 PLANT FORM:  PLANKTON  SUBMERGED  FLOATING LVD  GRAMINOID  FORB  LICHEN  BRYOPHYTE  DECIDUOUS  CONIFEROUS  MIXED  
 COMMUNITY:  LAKE  POND  RIVER  STREAM  MARSH  SWAMP  FEN  BOG  BARREN  MEADOW  PRAIRIE  THicket  SAVANNAH  WOODLAND  FOREST  PLANTATION  
 COVER:  OPEN  SHRUB  TREED  
 COMM. TYPE:  INCLUSTON  COMPLEX  
 OTHER:  HERDGEROW

**STAND DESCRIPTION:**  
 LAYER: \_\_\_\_\_ HT: \_\_\_\_\_ CVR: \_\_\_\_\_  
 SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO).  
 1 EMERGENT  
 2 CANOPY 3 1 SOLALBA  
 3 SUB-CANOPY 3 4 SOLSP.  
 4 UNDERSTORY 4 2 CORSP > SALERIO  
 5 GROUND LAYER 5 5 SOLSP > PLADARUN  
 HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**  

STANDING SNAGS	TREES		
	< 10cm	10-24cm	25-50cm
FIRM	R		
DECAYED			

**COMMUNITY MATURITY:**  
 PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 4071 Transi...
	POLYGON: SW D3
	DATE: July 16/19
	SURVEYOR(S): VHTF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
CORSEB						VIBTRIL					
GRARVE						PICGLAUC					
SONARVE						PUSTRG					
SONCALVA											
DIPSYFLU											
POPRIST											
RUUDRGM											
ACE NE CIV											
ACE SACC											
RUSSALLE											
ARCHINOU											
SALEXIG											
SALPIED											
SALDIRA											
PORTREM											
PAPDEFITO											
IMPCCODE											
SOLAIGA											
ALLPETI											
SALUSP											
SALDISC											
TEHLORBA											
VITRIPDA											
RUUTARA											

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> ZOOECIDIOUS <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGEROW <input type="checkbox"/> OTHER
--	--	---	---	---	---	---	---	---	--

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	2	SAUSP > ACESACC
3 SUB-CANOPY	3	4	ACE NE CIV >>> ACE SACC
4 UNDERSTORY	3/4	3	SALEXIG
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SWAGS	✓	✓	✓	✓
DEADFALL/LOGS	✓	✓	✓	✓

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST

SITE: U07 Transboundary (4)

POLYGON: CUMIDA

DATE: June 16/19

SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
QUE ALBD													
QUE RUBR	R												
CAROVAT	O												
ACESDSC													
LOUTATA													
RUNCATL													
TILAMER													
VITRIPA													
GEALIVE													
ACLUDETI													
DEGLON													
QUE TILACO													
ACESDSC	R												
ERAPENS													
MELALBD													
ACEPLAT													
BRGOUER	R												
SOLCANVA													
PULPRAT													

POLYGON SURVEYOR(S):

SITE: UTMZ: UTM: UTMN:

DATE: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> CREEK/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE					
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK					
COVER	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUBS <input checked="" type="checkbox"/> TREED				
COMPL. TYPE	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX				
OTHER	<input type="checkbox"/> HEDGEROW				

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	4	QUEER SP >> CAROVAT
3 SUB-CANOPY	2	2	ACESDSC = TILAMER
4 UNDERSTORY	3/4	2	CAROVAT > RUNCATL
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES			
	< 10cm	10-24cm	25-50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



2016

PLANT SPECIES LIST	SITE: U02 Transition
	POLYGON: MAS2b
	DATE: July 16/14
	SURVEYOR(S): NIME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PARJUS				A										
DIPBRUN				G										
SPLALBA			R											
TYPAVUGU				O										
TYPLATE				R										

POLYGON SURVEYOR(S) LIST	SITE: U02 Transition
	POLYGON: MAS2b
	DATE: July 16/14
	SURVEYOR(S): NIME

Area of Survey

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL	<input type="checkbox"/> ORGANIC	<input type="checkbox"/> LAKESTRINE	<input type="checkbox"/> NATURAL	<input type="checkbox"/> PLANKTON	<input type="checkbox"/> LAKE
<input type="checkbox"/> WETLAND	<input checked="" type="checkbox"/> MINERAL SOIL	<input checked="" type="checkbox"/> RIVERINE	<input type="checkbox"/> CULTURAL	<input type="checkbox"/> SUBMERGED	<input type="checkbox"/> FOND
<input type="checkbox"/> AQUATIC	<input checked="" type="checkbox"/> PARENT MATERIAL	<input type="checkbox"/> BOTTOMLAND	<input type="checkbox"/> TERRACE	<input type="checkbox"/> FLOATING LND	<input type="checkbox"/> RIVER
	<input type="checkbox"/> ACIDIC BEDROCK	<input type="checkbox"/> TERRACE	<input type="checkbox"/> VALLEY SLOPE	<input type="checkbox"/> BRYOPHYTE	<input type="checkbox"/> STREAM
	<input type="checkbox"/> BASIC BEDROCK	<input type="checkbox"/> ROLLING UPLAND	<input type="checkbox"/> CLIFF	<input type="checkbox"/> LICHEN	<input type="checkbox"/> MARSH
	<input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> TALLS	<input type="checkbox"/> CREVICE/CAVE	<input type="checkbox"/> BRYOPHYTE	<input type="checkbox"/> SWAMP
		<input type="checkbox"/> ALYAR	<input type="checkbox"/> ROCKLAND	<input type="checkbox"/> DECEIDUOUS	<input type="checkbox"/> BOG
		<input type="checkbox"/> BEACH/DUNE	<input type="checkbox"/> SAND DUNE	<input type="checkbox"/> MIXED	<input type="checkbox"/> BAREEN
		<input type="checkbox"/> BLUFF			<input type="checkbox"/> MEADOW
					<input type="checkbox"/> PRAIRIE
					<input type="checkbox"/> THICKET
					<input type="checkbox"/> SAVANNAH
					<input type="checkbox"/> WOODLAND
					<input type="checkbox"/> FOREST
					<input type="checkbox"/> PLANTATION
					<input type="checkbox"/> HEDGEROW
					<input type="checkbox"/> OTHER
					<input type="checkbox"/> OPEN
					<input type="checkbox"/> SHRUB
					<input type="checkbox"/> COMPLEX
					<input type="checkbox"/> TREED

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	SPLALBA
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST  
 SITE: 402 Transitionary (4)  
 POLYGON: CUM-116  
 DATE: 5/24/19  
 SURVEYOR(S): NJP

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PIPERIDUM				A										
SOLICANA				A										
CICINTY				R										
SYLLATE				O										
DAUCARO				O										
RAMELIS				R										
SUNUVEN				R										
DRICLAPP				R										
POPRAT				A										
MELPURA				O										
LOTORN				A										
PODCOMP				R										
LACSPRR				R										
DIPSYEU				R										
MELGEEI				R										
PARPUUG				R										

POLYGON SURVEYOR(S):  
 SITE: POLYGON:  
 UTMZ: UTME: DATE:  
 UTMN:

POLYGON DESCRIPTION:

SYSTEM <input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	SUBSTRATE <input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	TOPO. FEATURE <input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> SCABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	HISTORY <input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	PLANT FORM <input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDIOUS <input type="checkbox"/> CONFEROUS <input type="checkbox"/> MIXED	COMMUNITY <input type="checkbox"/> LAKE <input type="checkbox"/> FOND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARCH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	OTHER <input type="checkbox"/> HERBENOW			

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5	5	PIPERIDUM = SOLICANA / POPRAT / LOTORN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = < 10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES			
	< 10cm	10-24cm	25-50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	DECEAYED	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  
 PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST

SITE: 402 Trans. Stewey (4)

POLYGON: CUMI-1a

DATE: 11/16/19

SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
PDDRUN				A		MELORBEI				O	
POPPAT				A		TEIRSEPE				A	
CLDARVE				O		TRIPRST				O	
PIRAVST				O		AMPARTE				O	
SUGNIGR			R			SALALBA			R		
VITRIPAR				O		POPODECT			R		
LOTCOBA				A		ULMARER			R	R	
CRATSP			R								
BROMER				A							
TIUOCCI			R								
BEIRUST				R							
DESCURI				R							
ARESDSD			R								
ROBSEUD			R								
PICGLAU				R							
QUITRPA				O							
PINSTRD				R							
SOLCANM				O							
HNDDPERE				R							
SHDDOAVS				O							
CILINTM				R							
AVZPARR				R							
AGEPLAT				R							
ACE SAGLA				R							
SUNNUNG				R							
TRDARRI				O							
MEIDLBA				A							

POLYGON SURVEYOR(S):

SITE: \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

UTMN: \_\_\_\_\_

DATE: \_\_\_\_\_

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CORR. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TRAILS <input type="checkbox"/> ORE/ICE/CANE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> HERBEGROW <input type="checkbox"/> OTHER
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SITE: \_\_\_\_\_

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

COVER:  OPEN  SHRUB  TREED

COMM. TYPE:  INCLUSION  COMPLEX

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	S-7	5	POPPAT = TEIRSEPE > PDDRUN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES			
	< 10cm	10-24cm	25-50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm
DECAVED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH







**PLANT SPECIES LIST**

SITE: 401 Transition (314)  
 POLYGON: MAMZ-26  
 DATE: June 16/19  
 SURVEYOR(S): UME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SPRINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				SPECIES CODE	LAYER			
	1	2	3	4		1	2	3	4
PLDARIN									
PARAVST				A					
POPELT	R								
SDLARVA	R								
TWSTARF			R						
SOICANA			O						
WTRIPDA			O						
MDLSTE			O						

POLYGON: MAMZ-26  
 SITE: 401 Transition  
 SURVEYOR(S): UME  
 DATE: June 16/19  
 UTMZ: UTM: 16QUC  
 UTMN: 6119

**POLYGON DESCRIPTION:**

<input type="checkbox"/> TERRESTRIAL	<input type="checkbox"/> ORGANIC	<input type="checkbox"/> LACUSTRINE	<input type="checkbox"/> NATURAL	<input type="checkbox"/> PLANKTON	<input type="checkbox"/> LAKE
<input type="checkbox"/> WETLAND	<input type="checkbox"/> MINERAL SOIL	<input type="checkbox"/> RIVERINE	<input type="checkbox"/> CULTURAL	<input type="checkbox"/> SUBMERGED	<input type="checkbox"/> POND
<input type="checkbox"/> AQUATIC	<input type="checkbox"/> PARENT MATERIAL	<input type="checkbox"/> BOTTOMLAND	<input type="checkbox"/> SHRUB	<input type="checkbox"/> FLOATING LVD	<input type="checkbox"/> RIVER
	<input type="checkbox"/> ACIDIC BEDROCK	<input type="checkbox"/> TERRACE	<input type="checkbox"/> TREED	<input type="checkbox"/> GRAMINOID	<input type="checkbox"/> STREAM
	<input type="checkbox"/> BASIC BEDROCK	<input type="checkbox"/> VALLEY SLOPE		<input type="checkbox"/> FORB	<input type="checkbox"/> MARCH
	<input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> TABLELAND		<input type="checkbox"/> LICHEN	<input type="checkbox"/> SWAMP
		<input type="checkbox"/> ROLLING UPLAND		<input type="checkbox"/> BRYOPHYTE	<input type="checkbox"/> FEN
		<input type="checkbox"/> CLIFF		<input type="checkbox"/> DECIDUOUS	<input type="checkbox"/> BOG
		<input type="checkbox"/> TALLS		<input type="checkbox"/> CONIFEROUS	<input type="checkbox"/> BARREN
		<input type="checkbox"/> ALVAR		<input type="checkbox"/> MIXED	<input type="checkbox"/> MEADOW
		<input type="checkbox"/> GREYCE/CAVE			<input type="checkbox"/> PRAIRIE
		<input type="checkbox"/> ROCKLAND			<input type="checkbox"/> THicket
		<input type="checkbox"/> BEACH/BAR			<input type="checkbox"/> SAVANNAH
		<input type="checkbox"/> SAND DUNE			<input type="checkbox"/> WOODLAND
		<input type="checkbox"/> BLUFF			<input type="checkbox"/> FOREST
					<input type="checkbox"/> PLANTATION
<b>SITE</b>			<b>COVER</b>	<b>COMM. TYPE</b>	<b>OTHER</b>
<input type="checkbox"/> OPEN WATER			<input checked="" type="checkbox"/> OPEN	<input type="checkbox"/> INCLUSION	<input type="checkbox"/> HERDEROW
<input type="checkbox"/> SHALLOW WAT.			<input type="checkbox"/> SHRUB	<input type="checkbox"/> COMPLEX	
<input type="checkbox"/> SURFICIAL DEP.			<input type="checkbox"/> TREED		
<input type="checkbox"/> BEDROCK					

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	POPELT = SDLARVA
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4-5	5	PHDRELV > PARAVST

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

**COMMUNITY MATURITY:**

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH





PLANT SPECIES LIST

SITE: 407 Transboundary (4)

POLYGON: NANT-2-2g

DATE: Aug 8/19

SURVEYOR(S): KUH

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
PUNDEUN				D									
LYTSALI				R									
TUDPAUSI				R									
UTAPNER			O										
CRAT SP			O										
REXPENS			R										
RUBCATE			R										
COESP			R										
POAPRAT				DN									
SOLCANA				O									

POLYGON

SITE: \_\_\_\_\_

POLYGON: \_\_\_\_\_

SURVEYOR(S): \_\_\_\_\_

DATE: \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

UTMN: \_\_\_\_\_

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CORB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input checked="" type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE <input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		COVER <input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBROW <input type="checkbox"/> OTHER

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	3-4	1	ULMATER > CRAT SP
3 SUB-CANOPY			
4 UNDERSTORY	4	1	RUBCATE > COESP
5 GROUND LAYER			PUNDEUN > SOLCANA

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS					DEADFALL/LOGS
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm	

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MILD-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST	SITE: Hwy 403 Trans Hwy
	POLYGON: BLO1
	DATE: July 12/19
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
TUSSEARE				R										
ECHLOBA				R										
PHADARUN				R										
CIRARVE				R										
Hoody 5000														

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input checked="" type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input checked="" type="checkbox"/> BAREEN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREE	<input type="checkbox"/> INCLUSTON <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW <input type="checkbox"/> OTHER
--	--	--	--	--	--	---	--	---

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			TUSSEARE > PHADARUN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	> 50cm
	DECAYED	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER 
  YOUNG 
  MID-AGE 
  MATURE 
  OLD-GROWTH

some of can dead in canopy

PLANT SPECIES LIST

SITE: 407 Transhawn 5

POLYGON: F0D6-2 (bottom Row slip - NW corner)

DATE: July 12/19

SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
ACESASA						SOLCANA					
TILAMER						FAGGRAN					
ACERUBR						TSUGANA					
CARENITA						HELVANT					
INDVIRG						LYNNAH					
CAROUAT						RIBANER					
INPCARE						LYCAMER					
CIEWITE						PARINSTR					
SOLFLEX						SOLCAIS					
SMHERBS						VIOLDSR					
POKCALI						TRIGGAN					
LYSCILI						SANCAVA					
IMPPDL						OSTVIRG					
ACESANT						NEBACTI					
SALSP											
MDSTRU											
FRATEUN											
ARC MINU											
ARITRI											
VELTLD											
ANECANA											
GEUMALC											
DLLPFTI											
AMPBRAC											
TRIRAGE											
LILMICH											
THADDOI											

POLYGON SURVEYOR(S):

SITE: F0D6-2

DATE: July 12/19

UTMZ: UTM: UTMN:



POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BAREEN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER	COMM. TYPE	OTHER		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBSIFICAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERDGRW		

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	14		ACESASA > ACENIGR = FRASI
3 SUB-CANOPY	24		ACESASA > ACENIGR
4 UNDERSTORY	4		FRPELV
5 GROUND LAYER	5-7		IMPPDL >> MDSTRU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m

CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	R	A	O	K
FIRM	O	R		
DEADBALL/LOGS				
DECAYED				

COMMUNITY MATURITY:

PIONEER 
  YOUNG 
  MID-AGE 
  MATURE 
  OLD-GROWTH

**PLANT SPECIES LIST**

SITE: NOV 407 Tonsil Field

POLYGON: F0D5-3b/Anthracite

DATE: July 10/19

SURVEYOR(S): NITE

**POLYGON**

SITE: \_\_\_\_\_

SURVEYOR(S): \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

POLYGON: \_\_\_\_\_

DATE: \_\_\_\_\_

UTMN: \_\_\_\_\_

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
QUEMACEO			R			MINERAL SOIL					
QUEALBA			D	R		EUDORAU					
QUEPUK		D	R	R		FRDG GRASS					
NUMER			R	O		ACENIGR					
FRANER			R	O		PONCOMP					
DHEDEV			R			ALVINCAN					
DIDOTER			R			HALSTEL					
OSTURG			R	O		RROVER					
RODELT			R	O		QUVIRG					
HALRAGE			R	A		TRILGRAN					
TSUCAND			R	R		SMIRERB					
PULPRET			R			CIELUTE					
ACEFREE			R			SOUEYX					
CARODT			R			MIRIPA					
ACESASA			O	O	O	ACEPUK					
CDROSE			O	O	O	RIBDER					
CARPEUS			O	O	A	FAGGAMB					
ALPETH			O								
SOLCODES			O								
AMPARTE			O								
LAMPURP			O								
ANENIRG			O								
EURHDCR			O								
EPANICR			R								
PANSTRO			R								
DRUSEP			R	O							
PARINSER			R								

-very soft  
 most young  
 shape

**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLUS <input type="checkbox"/> GREVISE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BENCH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MANSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input checked="" type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	4	QUERSP > ACESASA = CAR
3 SUB-CANOPY	2	5	ACESASA > PRUSERO
4 UNDERSTORY	3/4	3	FRAXSP > ACESASA
5 GROUND LAYER	5-7	4	MATR RDCG > CARSP

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	R	R	R	R
DEADFALL/LOGS	FIRM	R	R	R
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MIDDLE-AGE  MATURE  OLD-GROWTH





PLANT SPECIES LIST

SITE: 407 Trans-Hwy 5

POLYGON: FODS-1a (mid 4 upper slope)

DATE: July 12/19

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
ACESDSA		A	O	O		CARESP					
CAUTNAL				R		POACAMP					
FRPENNN			O	O		LEOCARD					
VITRIPA			O	O		QUERUR					
DLPETI				R		MANANA					
IMPCAPE				R							
CAROVAT		R	O	O							
GELDULE				O							
ARITRITR				R							
KUBALE				O	PIC						
DRUSERO			R								
ATAHEFI				R							
TSUCANA				R							
FAAGGAN		R	R	O							
TILANER				R							
GERRORF				O							
VITRIPA				O							
CIRLUITE				O							
SOLFLEX				R							
ALPETI				O							
SOLCANA				R							
OKDSTRI				R							
SOLGDEL				R							
TRROFE				R							
OSTNRC				R							

25-4 paper

POLYGON SURVEYOR(S):

SITE: \_\_\_\_\_ DATE: \_\_\_\_\_

UTMZ: \_\_\_\_\_ UTM: \_\_\_\_\_ UTMN: \_\_\_\_\_

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERDGEROW <input type="checkbox"/> OTHER

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	4	ACESPASA > PRUSERO =
3 SUB-CANOPY	2	4	ACESA SA > FAGGELAN
4 UNDERSTORY	4	2	FRDSP > PRUSERO > FAGGELAN
5 GROUND LAYER	5-7	3	

HT CODES: 1 = > 25m 2 = > 10-25m 3 = > 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
0	R	C	C	R	R
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER 
  YOUNG 
  MID-AGE 
  MATURE 
  OLD-GROWTH

- numerous dead in debris oak in TLHAYER

PLANT SPECIES LIST

SITE: 1401 407 Transition 5

POLYGON: EON T-20 SE Bionte Crk 407

DATE: July 10/11

SURVEYOR(S): NM =

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
FRAXIN														
BETALLE														
ACESASA														
PRUNUS														
RUTYPH														
OVERMOR														
TLHAYER														
ULMAYER														
SOLCANA														
MITRIPP														
FRAXIN														
SALSP														
QUERUSR														
SALSP														

POLYGON SURVEYOR(S):

SITE: UTMZ: UTM: UTMN:

DATE:



POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYCE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACHBAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input checked="" type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

SITE

COVER

OPEN  
 SHRUB  
 TREED

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	4	FRAXIN = ACESASA
3 SUB-CANOPY	3	4	FRAXIN = ACESASA > TLHAYER
4 UNDERSTORY	4	3/4	FRAXIN > TLHAYER
5 GROUND LAYER	5-7	5	SOLCANA = PRUNUS

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	R	0	0	R
DEADFALL/LOGS	FIRM	0	0	0
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2b-upper

PLANT SPECIES LIST

SITE: Hwy 4102 Transition 5

POLYGON: M152-9

DATE: July 10 | 2019

SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PADARUN				R										
EUPPERE				R										
TYPHA SR.				R										
HYOSCOR				O										
IMPADPE				R										
POWCORD				R										
LYGMEER				R										
SCIVALI				O										
EUPTRACY				R										
SUCCUS SP.				O										

- very narrow strip and western edge of vegetation

POLYGON SURVEYOR(S):

SITE: M152-9

UTM Z: UTM X: UTM Y: UTM M: UTM N:

DATE: UTM N:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CORR. BEDROCK	<input type="checkbox"/> LAQUESTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input checked="" type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRairie <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER		COMM. TYPE	OTHER	
<input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK	<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5-7	1	SCIVALI > POWCORD

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST

SITE: 407 TransHwy 5

POLYGON: FODS-1b

DATE: Jun 12/10

SURVEYOR(S): NMC

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
ACESASA	A	A	A	O										
QUERUBR	R													
PISTRG	R													
TUSPDRF			A											
ULMAMR	R													
DRCHINU			R											
FRADENS			R											
VTRIPB			R	O										
ACERUBR			R											
RUUTYAL			R											
GEALYRA			R											

\*Access restricted to western watercourse, this should begin to grow from description next deposit

POLYGON SURVEYOR(S):

SITE: \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

UTMN: \_\_\_\_\_

DATE: \_\_\_\_\_

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLUNKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LND <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDIOUS <input type="checkbox"/> CONFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BAREEN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input checked="" type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		OTHER	
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED		<input type="checkbox"/> INCLUSTON <input type="checkbox"/> COMPLEX	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	4	ACESASA >> QUERUBR
3 SUB-CANOPY	2	4	ACESASA >> ULMAMR
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS	DEADFALL/LOGS
<input type="checkbox"/> < 10cm <input type="checkbox"/> 10-24cm <input type="checkbox"/> 25-50cm <input type="checkbox"/> > 50cm	<input type="checkbox"/> < 10cm <input type="checkbox"/> 10-24cm <input type="checkbox"/> 25-50cm <input type="checkbox"/> > 50cm	<input type="checkbox"/> < 10cm <input type="checkbox"/> 10-24cm <input type="checkbox"/> 25-50cm <input type="checkbox"/> > 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 409 Trans-Hilly
	POLYGON: FODS-5
	DATE: July 19/19
	SURVEYOR(S): NME

POLYGON	SITE:	POLYGON:
SURVEYOR(S):	UTMZ:	DATE:
	UTME:	UTMN:

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
CAROVDT	0	0	0	0									
PARINUS	0	0	0	0									
ACBSASD	0	0	0	0									
FRDPLNUS	0	0	0	0									
QWERUBR	0	0	0	0									
TRAMER	0	0	0	0									
SOLCANA	0	0	0	0									
OSTVIRG	0	0	0	0									
CADPEDI	0	0	0	0									
PLUDSP	0	0	0	0									
RIURADI	0	0	0	0									
-ORRACE	0	0	0	0									
ENDATA	0	0	0	0									
FAGGERAN	0	0	0	0									
VITRIPAR	0	0	0	0									
PRUNIRG	0	0	0	0									
ULMAMER	0	0	0	0									
BROINER	0	0	0	0									
RUBINDE	0	0	0	0									

- no trees  
 - occasional trees around 2/3 m of FOD from southern edge  
 - soil layer not defined

POLYGON DESCRIPTION: *around 2/3 m of FOD from southern edge*

<input checked="" type="checkbox"/> TERRESTRIAL	<input type="checkbox"/> ORGANIC	<input type="checkbox"/> LACUSTRINE	<input type="checkbox"/> NATURAL	<input type="checkbox"/> PLANKTON	<input type="checkbox"/> LAKE
<input type="checkbox"/> WETLAND	<input type="checkbox"/> MINERAL SOIL	<input type="checkbox"/> RIVERINE	<input type="checkbox"/> CULTURAL	<input type="checkbox"/> SUBMERGED	<input type="checkbox"/> POND
<input type="checkbox"/> AQUATIC	<input type="checkbox"/> PARENT MATERIAL	<input type="checkbox"/> BOTTOMLAND	<input type="checkbox"/> OPEN	<input type="checkbox"/> FLOATING LVD	<input type="checkbox"/> RIVER
	<input type="checkbox"/> ACIDIC BEDROCK	<input type="checkbox"/> TERRACE	<input type="checkbox"/> SHRUB	<input type="checkbox"/> GRAMINOID	<input type="checkbox"/> STREAM
	<input type="checkbox"/> BASIC BEDROCK	<input type="checkbox"/> VALLEY SLOPE	<input type="checkbox"/> TREED	<input type="checkbox"/> FORB	<input type="checkbox"/> MARSH
	<input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> TABLELAND		<input type="checkbox"/> LICHEN	<input type="checkbox"/> SWAMP
		<input type="checkbox"/> ROLLING UPLAND		<input type="checkbox"/> BRYOPHYTE	<input type="checkbox"/> FEN
		<input type="checkbox"/> CLIFF		<input type="checkbox"/> DECDUOUS	<input type="checkbox"/> BOG
		<input type="checkbox"/> TALUS		<input type="checkbox"/> CONIFEROUS	<input type="checkbox"/> BAREM
		<input type="checkbox"/> GREVICE/CAVE		<input type="checkbox"/> MIXED	<input type="checkbox"/> MEADOW
		<input type="checkbox"/> ALYAR			<input type="checkbox"/> PRAIRIE
		<input type="checkbox"/> ROCKLAND			<input type="checkbox"/> SAVANNAH
		<input type="checkbox"/> BEACH/BAR			<input type="checkbox"/> WOODLAND
		<input type="checkbox"/> SAND DUNE			<input type="checkbox"/> FOREST
		<input type="checkbox"/> BLUFF			<input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	3	CAROVDT = QWERUBR = ACBSASA
3 SUB-CANOPY	2	4	DECSASD ~ CAROVDT
4 UNDERSTORY	3	3/4	ACBSASA ~ FRDPLNUS
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

21b-upper

**PLANT SPECIES LIST**  
 SITE: 409 Transhwy  
 POLYGON: CUM-1a  
 DATE: July 10/19 / July 12/19 / Aug 8/19  
 SURVEYOR(S): NPF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
HELIDUBA						RODENT		R			
CICINTY						TUPPLATE					
PLADARUN						DIPHYFU					
RUMCRIS						ACHMNUA					
BROWER						QUITYDU					
PODPRST						CONARVE					
PALPRST						SOLDULC					
IESARUN						COVARI					
SONARVE						LACSER					
CARLEUC						THUNVE					
LOTGORN						ALPETH					
TRIPRST						RUBIDAE					
TRIREPE						CIRVULG					
ASVARI						HELALBA					
PARPRST						LWPPER					
RUBIDDE						TRAVIRG					
LWPPER						EVUREPE					
ARCMNUA						DUCCARD					
DSGURI						HEDSATTI					
NICCRBC						RIACACTN					
IRARVE						PRUVRG					
SHPPLATE						QUETHAE					
SALBARRA											
VITRIPA											
SOLCDNA											
SMNUDAN											
COBRACE											

POLYGON SURVEYOR(S):  
 SITE: UTMZ: UTM: UTMN:

**POLYGON DESCRIPTION:**  
 SYSTEM:  TERRESTRIAL  WETLAND  AQUATIC  
 SUBSTRATE:  ORGANIC  MINERAL SOIL  PARENT MATERIAL  ACIDIC BEDROCK  BASIC BEDROCK  CARB. BEDROCK  
 TOPO. FEATURE:  LAQUSTRINE  RIVERINE  BOTTOMLAND  TERRACE  VALLEY SLOPE  TABLELAND  ROLLING UPLAND  CLIFF  TALLS  CREEVE/CAVE  ALVAR  ROCKLAND  BEACH/BAR  SAND DUNE  BLUFF  
 HISTORY:  NATURAL  CULTURAL  
 PLANT FORM:  PLANKTON  SUBMERGED  FLOATING LVD  GRAMINOID  FORB  LICHEN  BRYOPHYTE  DECIUOUS  CONIFEROUS  MIXED  
 COMMUNITY:  LAKE  POND  RIVER  STREAM  MARCH  SWAMP  FEN  BOG  BARREN  MEADOW  PRAIRIE  THICKET  SAVANNAH  WOODLAND  FOREST  PLANTATION  
 COVER:  OPEN  SHRUB  TREED  
 COMM. TYPE:  INCLUSION  COMPLEX  
 OTHER:  HERDGROW

**STAND DESCRIPTION:**  
 LAYER: 1 EMERGENT 2 CANOPY 3 SUB-CANOPY 4 UNDERSTORY 5 GROUND LAYER  
 HT: 5-7  
 CVR: 5  
 SPECIES IN ORDER OF DECREASING DOMINANCE: **ROPRST > CIRARVE**  
 HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%  
**SIZE CLASS ANALYSIS:**  

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

 ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE  
 COMMUNITY MATURITY:  PIONEER  YOUNG  MIDDLE-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST

SITE: HWY 407 Transition (5)

POLYGON: CUM-1/CUTIC

DATE: July 10/19

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
PNDRUW				A		Equerre							
ACNEGU			O	R									
SOCANA				A									
RUTYPN			O	O									
PRDUST				O									
VTRIPD				O	A								
RUDIRT				R									
ASCYRI				R									
RUBIDAE				R									
EUPDERE				R									
INOCANU				A									
TYNDSR				R									
APOCANV				O									
IMPCAPE				R									
PASSATI				O									
LHYSALI				R									
TUSEDEF				R									
PDRTASI				O									
ARCLDOP				O									
SALDULC				R									
PRTIJUSE				O									
EUPMACU				R									
EQAPENU				R									
POADDLU				O									
SALALRD				R									
BOECYLI				O									
ATHEIFI				R									

POLYGON SURVEYOR(S):

SITE: HWY 407 Transition (5)

DATE: July 10/19

UTMZ: UTMZ: UTMZ: UTMZ:

UTME: UTMN: UTMN: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input checked="" type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECEOUS <input type="checkbox"/> COMFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input checked="" type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		OTHER	
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICAL DEP. <input type="checkbox"/> BEDROCK		<input checked="" type="checkbox"/> OPEN <input checked="" type="checkbox"/> SHRUB <input type="checkbox"/> TREAED		<input type="checkbox"/> INCLUSTON <input type="checkbox"/> COMPLEX	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	3	1	ACNEGUND > SALALRA
3 SUB-CANOPY			
4 UNDERSTORY	3-4	2	RUTYPN > ACNEGUY
5 GROUND LAYER	5-7	5	PNDRUW > SOCANA

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m

CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	R	R	R	R	R
DEADFALL/LOGS	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST	SITE: 407 Transhway (5)
	POLYGON: CUTPA (east of tracks)
	DATE: Aug 9, 11
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m, 2 = SUB-CANOPY, 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
GRAPED1		A				PONCOMP					
VITRIPD		R	O			PACTJUS		O			
PORTREM		R	O			SAL SP		R			
SOLCUBA			A			UTSALI					
CRDPUNC		R				AMARTE					
COSEBI			O			ASCURI					
CICULTY			R			SALERIO		R			
ULUMER		R	R			DIPREU		R			
QERURR		O	R			REURG		O			
CORRAT			A			TUNTEW		R			
CORARI			O			SCIVALI		R			
BROIBER			O			ACESASA		R	R		
CIRORVE			O								
FRAPENIV		R	O								
BLDCSTL			A								
VERTUDP			R								
RIUNYPA			R								
DILPRAT			R								
SOARVE			O								
LCRORN			O								
DUB DRUN			O								
SHADOND			O								
CLEVIRG			O								
BURRCCI			O								
DUBCARG			O								
QUEHACR			O								
TILAMER		R									

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LND <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> WASH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRairie <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		OTHER	
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBSIFICAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	
<input type="checkbox"/> HEDGEROW <input type="checkbox"/> PLANTATION					

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	2	COVERS >> TILAMER
3 SUB-CANOPY	2	1	PROTRITH
4 UNDERSTORY	3-4	4	CORN SP >>> PARACANTIL > EQDPS
5 GROUND LAYER			SOLCUBA

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DEADBALL/LOGS	DECEAYED < 10cm	10-24cm	25-50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  
 PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST	SITE: 407 Transitory
	POLYGON: CUNIE (west of Bonteck)
	DATE: July 12/19
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
ACESASA	0	0	0	0										
RHUTYPA			0	R										
FEDPENN		R	O	O										
BROINER			A											
PARTINER			O											
VITRIPA			O											
SOLCVA			O											
CRAPEID (CONT)		R												
ACENEGU		R	R											
SALSP		R												
AMAR		R	R											

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> MEADOW <input type="checkbox"/> BARRON <input type="checkbox"/> REARBE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBTICAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGEROW <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > WHICH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	3	ACESASA
3 SUB-CANOPY	3	2	ACESASA > FRAPEUS
4 UNDERSTORY	4	3	RHUTYPA ACESASA
5 GROUND LAYER	5-7	5	BROINER > SOL SP

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	< 10cm		10-24cm		25-50cm		> 50cm	
	STANDING SNAGS	FIRM	DEAD	DECAYED	STANDING SNAGS	FIRM	DEAD	DECAYED
	R	0	0	0	R	0	0	0

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST

SITE: 407 Transectory

POLYGON: CUT19

DATE: July 12/19

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAMPLINGS & SHRUBS 4 = GROUND LAYER  
 BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER				COLL	SPECIES CODE	LAYER				COLL			
	1	2	3	4			1	2	3	4				
RAUTYRN														
RAUCATA														
POPRAT														
BRONIER														
POPREH														
DAUCARO														
FEDAMER														
ACESASA														

STAND CHARACTERISTICS

SITE: \_\_\_\_\_

POLYGON: \_\_\_\_\_

SURVEYOR(S): \_\_\_\_\_

DATE: \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

UTMN: \_\_\_\_\_

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAKESTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> ROTTENLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> BARRELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> CREEK/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD. <input type="checkbox"/> GRASS/HERB <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> BR/DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

STAND DESCRIPTION

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = APPROX EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	4	BRACSTIN > RAUTYRN
5 GROUND LAYER	5-7	5	POAPRAT > DAUCARO

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

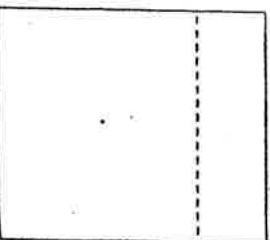
SIZE CLASS ANALYSIS

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	> 50cm
	DECAYED	< 10cm	10-24cm	> 50cm

COMMUNITY MATURITY  
 PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

SOIL ASSESSMENT

TEXTURE	1	2	3	4
DEPTH TO ROOTLES	0 =	0 =	0 =	0 =
DEPTH TO GLEY	G =	G =	G =	G =
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				
MOISTURE REGIME				



PLANT SPECIES LIST	SITE: 407 Transylvania
	POLYGON: CUT-1
	DATE: July 12/19
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m, 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT, A = ABUNDANT, O = OCCASIONAL, R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
RHYNTPA			D	O									
TRAPENN			R	R									
BROINER			A										
POARPET			O										
ERI PHIL			R										
DAHCARO			R										
CHREUC			R										
ALPETI			R										
ACE SPSP			R										
CONCARVA			R										
ERILANVA			O										

Zb-upper

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER	COMM. TYPE	OTHER		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBSIFICAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW		

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> WHICH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	RRAPEUS
2 CANOPY	3/4	4	RHYNTPA
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5/7	5	GRAMINOID

HT CODES: 1 = > 25m, 2 = > 10-25m, 3 = > 2-10m, 4 = 1-2m, 5 = 0.5-1m, 6 = 0.2-0.5m, 7 = < 0.2m  
 CVR CODES: 0 = NONE, 1 = 1-10%, 2 = > 10-25%, 3 = > 25-50%, 4 = > 50-60%, 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DEADBALL/LOGS	DECEAYED	< 10cm	10-24cm	25-50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  
  YOUNG  
  MID-AGE  
  MATURE  
  OLD-GROWTH

**PLANT SPECIES LIST**

SITE: Hwy 402 Transition (5)

POLYGON: Hedgerows

DATE: July 12/19

SURVEYOR(S): NHE

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				SPECIES CODE	LAYER			
	1	2	3	4		1	2	3	4
ALYPTER									
POPULUS									
VITRUPAR									
RADICATA									
DARWINSE									
HOL SP									
FRADEND									
LANTANA									
SM CAVA									
ALL PETI									
P INSTRO									
PICCLAB									
PICARIE									
ACNEGU									
QERUR									
ACESSA									
PINSYLV									
CAROVAT									
CIRPVE									

**POLYGON**

SITE: \_\_\_\_\_

SURVEYOR(S): \_\_\_\_\_

DATE: \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

UTMN: \_\_\_\_\_



**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> GREYCE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

**SITE**

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

**COVER**

OPEN  
 SHRUB  
 TREED

**COMM. TYPE**

INCLUSION  
 COMPLEX

**OTHER**

HEDGEROW

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL, TO).
1	EMERGENT		
2	CANOPY		
3	SUB-CANOPY		
4	UNDERSTORY		
5	GROUND LAYER		

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS				
DEADFALL/LOGS				
DECAYED				

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

**COMMUNITY MATURITY:**

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2b-vppcr

PLANT SPECIES LIST	SITE: NW 407 Transition
	POLYGON: F005-3C
	DATE: July 10/19
SURVEYOR(S): NMF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
RACATH		R	R			Edges					
PRIVUS E				R		ASCHEI					
RUMCRIS						TRIPUM					
QUEALBA				R		SOLCANA					
SOLCANA				R		SOLCANA					
CDTPEDI				R		VICBAC					
ROSVULT				R		SUMODIUG					
CAARNE				R		POAPRAT					
POACOMP				R		TESRURR					
EDVIRG				R		BROUDR					
GEUALLE				R		LEUCYUS					
DLRPTI				O		CARSCOP				R	Pic
FRADNER				R		QUEALBA				R	Pic(B)
ANECANA				R		TAROFI					
CIRUTE				O		SYMBOADG				R	
OSTVIRG				O		EURHACR				R	
ACESASA				A		CAREPUS				R	
PRUVIRG				O		SQARVE				R	
CARLOSE				O		RAURADI				O	
STRROSE				O		POPALU				R	
CAROVAT				O		RUBIDAE				R	
GERROISE				O		POFTASH				R	
TAGGANU				O		POGDANU				R	
TLAMER				R		RAMNER				R	
QUEBURR				R		DIPPELT				R	
LOUTATA				R		OXASTIC				R	
VITRPAR				R		DACGLOM				R	

POLYGON SURVEYOR(S):	SITE:	POLYGON:
	UTMZ:	DATE:
	UTME:	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input checked="" type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE					
COVER	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK				
COVER	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX			
OTHER	<input type="checkbox"/> HERBGEROW <input type="checkbox"/> PLANTATION				

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (-> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	3	QUERURR > ACESASA > CAROVAT
3 SUB-CANOPY	2	5	ACESASA >>> CAROVAT > OSTVIRG
4 UNDERSTORY	3-4	2	ACESASA > PRIVIRG = CAROVAT
5 GROUND LAYER	5-7	4	GERROISE > PRIVIRG = CARESP.

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm		10-24cm		25-50cm		> 50cm	
	STANDING	SNAGS	STANDING	SNAGS	STANDING	SNAGS	STANDING	SNAGS
DEADBALL/LOGS	FIRM	< 10cm	R	< 10cm	R	25-50cm	> 50cm	> 50cm
	DECAYED	< 10cm	R	10-24cm	R	25-50cm	> 50cm	> 50cm
		< 10cm	R	10-24cm	R	25-50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST

SITE: 407 Transhway  
 POLYGON: MAH2-2d  
 DATE: July 12/11  
 SURVEYOR(S): JMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
DUARU				D										
DARUJST														
SPUSP		R	R											
VTRIPA				R										
VERNAJST				R										

POLYGON SURVEYOR(S):

SITE: \_\_\_\_\_ POLYGON: \_\_\_\_\_  
 UTMZ: \_\_\_\_\_ UTMZ: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 UTMN: \_\_\_\_\_

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input checked="" type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

SITE

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

COVER

OPEN  
 SHRUB  
 TREETD

COMM. TYPE

INCLUSTON  
 COMPLEX

OTHER

HERDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (<> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			5 PUDARUN >> PUKAUST

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2b-up

PLANT SPECIES LIST  
 SITE: 407 Transi tway  
 POLYGON: Hedgesrows  
 DATE: June 11/19 & Aug 8/19  
 SURVEYORS: NME

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
RUBCDBH			A										
VITRIPA			O										
RAUTYPI			O										
CRATPUNC			R										
CRATPEDI			O										
QUEMIR			OOR										
QUEMBCR			RRR										
MESASA			RR										
LOUTATA			R										
SUGNIGR			R										
POPREM			R										
VARVIT			OOO										
TRAPEN			ROO										

POLYGON SURVEYORS: \_\_\_\_\_  
 SITE: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 UTMZ: \_\_\_\_\_ UTM: \_\_\_\_\_ UTMN: \_\_\_\_\_

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BENCH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDJIOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> POAIDE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

SITE:  OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE  
 COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST  
 SITE: 407 Transistway  
 POLYGON: CH1-10  
 DATE: June 11/19  
 SURVEYOR(S): NMF

POLYGON SURVEYOR(S):  
 SITE:  
 UTMZ:  
 UTM:

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
PADDIQU						PALANC					
PARAUST						RIAFRAG					
RUMCRIS						MELALBA					
DIPSYFU						SONARUE					
POBRBT						PULPRAT					
SHYUOAN						DEGLON					
MATPERF						WUKUWU					
COVUPKA						PLAMDSO					
ELAVUGK						OCENBIEN					
RUDDCATU						PICRANG					
LOT COLAN						SALNUA					
DESCHRI						SYNUSTE					
CIDARUE						SHUVIRG					
RAUTYD#						ROPREEM					
TAROFI						SOLRUCO					
SOLCABA						HIECAES					
VICCRAC						ELAVUE					
NITRIPARI						SILVULC					
RANOPUL						MALPARI					
FESRUBR						FRANNEP					
TRUNINGM						CARBERB					
NAVARO						RUBOCCI					
THLARVE						CONCAVA					
RKOUVER						ESTERRE					
DEMARKT						DIDILTE					
MISANG						CRAPEDI					
QUERURA											

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> GREYICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input checked="" type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

COVER  
 OPEN  
 SHRUB  
 TREETED

COMM. TYPE  
 INCLUSION  
 COMPLEX

OTHER  
 HERDGRASS

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			POBRBT > COVUPKA = VICCRAC

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  
 PIONEER  YOUNG  MIDD-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST

POLYGON: CUM-1c

DATE: June 11/17

SURVEYOR(S): CUM-1b

SITE: 403 Transitory

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 BRAUN BLAUQUERT: + PRESENT 1 = < 1.5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
DIRSHEU														
THL ARVE														
STCORU														
MDSQUARTA (dorm)														
NICCRX														
TRBDOFEI														
Small seedlings														
RLACATI														
RRONDEK														
MALPAMI														
RAAFRAN														
ARCHIMU														

STAND CHARACTERISTICS

POLYGON: CUM-1c

SURVEYOR(S): CUM-1b

DATE: June 11/17

SITE: 403 Transitory

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOG. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> OVER BEDROCK	<input type="checkbox"/> UPLAND <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD. <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP
SITE <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK					
COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED					
COVER <input type="checkbox"/> BRUGHTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED					
COVER <input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED					
COVER <input type="checkbox"/> BARREN <input type="checkbox"/> HEADROW <input type="checkbox"/> PRARIE <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION					

STAND DESCRIPTION

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> WHICH GREATER THAN GREATER THAN, = EQUAL TO)
1	EMERGENT		
2	CANOPY		
3	SUB-CANOPY		
4	UNDERSTORY		
5	GROUND LAYER	617 H	THL ARVE > STCORU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS

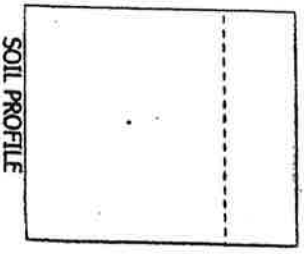
STANDINGS SVASS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DBADPALL/LOGS	10cm	10-24cm	25-50cm	> 50cm	> 50cm
	10cm	10-24cm	25-50cm	> 50cm	> 50cm
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

COMMUNITY MATURITY

PIONEER  YOUNG  MIDDLE-AGE  MATURE  OLD-GROWTH

SOIL ASSESSMENT

TEXTURE	1	2	3	4
DEPTH TO MOISTURE	g =	g =	g =	g =
DEPTH TO GLEY	G =	G =	G =	G =
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				
MOISTURE REGIME				



2b-up

PLANT SPECIES LIST	SITE: Hwy to Transitory 1
	POLYGON: CUM-1d
	DATE: June 11 199
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
DIOSPYRA													
SOLCANA													
QUINUA													
POKONIA													
SMILAX													
SMILAX													
TOGOFI													
FERNULG													
POAPOST													
RINCELP													
BIDRON													
NESTUAP													
PHADRUU													
HALUS SP													
RAUTYPA													
MATPERE													
LUHRUSE													
LOTCOLN													
NEALURO													
FESTRUBR													
PHACATH													
VICCRAC													

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> FEN <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE					
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK					
			COVER	COMM. TYPE	OTHER
			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5-7.5		SOLCANA=POAPOST > PHADRUU

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  
  YOUNG  
  MID-AGE  
  MATURE  
  OLD-GROWTH





PLANT SPECIES LIST

SITE: 407 *Thamastix*

POLYGON: *MAN-2-2d*

DATE: *Aug 8/19*

SURVEYOR(S): *KHF*

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
<i>PUDRUM</i>														
<i>LYTSOI</i>														
<i>VITRIDA</i>														
<i>PORTLEM</i>														
<i>GRATREDI</i>														

POLYGON SURVEYOR(S):

SITE: \_\_\_\_\_

POLYGON: \_\_\_\_\_

DATE: \_\_\_\_\_

UTM Z: \_\_\_\_\_

UTM E: \_\_\_\_\_

UTM N: \_\_\_\_\_

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACHBAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

SITE

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	<i>PORTLEM</i>
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5	5	<i>PUDRUM &gt;&gt;&gt; LYTSOI</i>

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	<i>K</i>	<i>R</i>		
DEADFALL/LOGS				
FRM	< 10cm	10-24cm	25-50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: <u>WY 003 Transvaal</u>
	POLYGON: <u>MAS-2-1c</u>
	DATE: <u>June 11/19</u>
SURVEYOR(S): <u>NMF</u>	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
SALALBA														
PUEBUST														
DPSYFY														
VERHAST														
TYRANGU														
MENARIE														
SAMANTE														
PALPST														
UTRIPA														
UTAMER														
VIETRIE														
QUEBACOR														
RHACATA														
POD POLU														
RHAFERAN														
PADARUN														
SULFERD 700														
SOL EXIG														

POLYGON SURVEYOR(S):	SITE:	POLYGON:
	UTMZ:	UTME:
	UTMN:	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> FEN <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE			COVER	COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBCICIAL DEP. <input type="checkbox"/> BEDROCK			<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	2	1	SALALBA
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	2	1	UTAMER > SALALBA
5 GROUND LAYER	4-5	5	PALPST > TYRANGU = PADARUN

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = 10-25% 3 = 25-35% 4 = 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER 
  YOUNG 
  MIDDLE-AGE 
  MATURE 
  OLD-GROWTH

PLANT SPECIES LIST

SITE: Hwy 402 Trans Hwy 6

POLYGON: MAT 2-20

DATE: July 10/19

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.									
	1	2	3	4			1	2	3	4										
PUDRUN																				
PURUST																				
VEKAST																				
RUTCRIS																				

POLYGON SURVEYOR(S):

SITE: UTMZ: UTM: UTMN:

DATE: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUESTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDJIOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

SITE

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

COVER

OPEN  
 SHRUB  
 TREED

COMM. TYPE  
 COMPLEX

OTHER

HEDGEROW  
 PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (<> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	45	5	PUDRUN >> PURUST

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: <u>407 Transway</u>
	POLYGON: <u>MAM2-2f</u>
	DATE: <u>July 10/19</u>
	SURVEYOR(S): <u>VHF</u>

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				SPECIES CODE	LAYER			
	1	2	3	4		1	2	3	4
PAPERUN									
RUNCERIS									
DESFU									
CRAPEDI									
SOLCAVA									
LYTHSAL									
VERUAST									
EUPPERE									
CARSTIP									
CIRDRVE									
QUEHDCR									
RUDCATK									
LENEGU									
TYPANGU									
POPRALU									
SHULANC									
TYPLATE									
BROWER									
SHUNOAN									
FESRUBR									
IMDCAPE									

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LTD <input checked="" type="checkbox"/> GRASSLAND <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE			COVER	COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT CANOPY	3	1	RHACATU = QUEHDCR
2 SUB-CANOPY			
3 UNDERSTORY	3	1	RHACATU = QUEHDCR
4 GROUND LAYER	4-6	5	RUDCATU = TYPANGU
5			

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-50% 4 = > 50-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES			
	< 10cm	10-24cm	25-50cm	> 50cm
FRM	< 10cm	10-24cm	25-50cm	> 50cm
DEAD	< 10cm	10-24cm	25-50cm	> 50cm
LOGS	< 10cm	10-24cm	25-50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH





PLANT SPECIES LIST  
 SITE: 407 Trass Highway  
 POLYGON: CUT-1e  
 DATE: July 12/19  
 SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
CICANTU				C		POTSIMP				R	
HATPERE				A		CARLEUC				O	
TARROT-1				O		MELALPA				O	
RADDBTU				O		SHUDANU				O	
PLDMASTO				A		BROINDER				O	
TRIPRBT				A		POPELET				R	
DIPSIETU				A		POPTREMI				R	
RUMGRIS				O		FRAXDEND				R	
CIRPKVE				A		VITRIPA				O	
NELOFEI				O		LOTODDU				A	
SOLCDNA				O		VICCRAGA				O	
CONCANA				A		TALARVE				O	
TRIREPEN				A		MALSP				R	
BSGSYRI				O		SALEXIG				R	
SHLATE				O		SALALBA				R	
ERIANNU				O		POACOND				A	
SODCANA				A		CIRVULG				R	
ULMOMER				R		BROTECA				R	
PODPRBT				O		DIANARME				R	
DAUCARO				A		SETVIRI				O	
ELEACIC				O		PAUREC				O	
BIDEPON				R		LACSERO				O	
SWEFEU				R		PALPRAT				R	
RAURECT				R		ESSEUR				R	
Δ GENEQU				O		PARAUST				R	
NMREPE				O		GLYCHMAX				R	
AMBARTE				O		CHEALBU				R	
SONOLER				O		AERCIGA				O	

POLYGON SURVEYOR(S):  
 SITE: DATE:  
 UTMZ: UTMW: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAKESTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input checked="" type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW <input type="checkbox"/> OTHER

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5-7	5	PLDMASTO = TRIPRBT = DIPSIETU

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	< 10cm	10-24cm	25-50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE  
 COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2b-1010E1

SITE: 407 - Transition  
 POLYGON: FODS-3d  
 DATE: July 12/19  
 SURVEYOR(S): NMT

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
OUTRUBR						ARLITRTRI					
TLATER	R					SOLCANA					
RAACATI						WUWAMR	R	R			
TUGWIGR	R	R				PINSTR0		R			
SRAPEDI						ANELLAEV					
FRAVIRG						DRITINSE					
FRDPENN						SOLDULC					
ALSESASA						GEWALLE					
PRVIRG-						CARCEIN					
CAQVAT	R	R				QWOSENS					
DIARME						RUBOCCI					
PRUSERO	R					VTRIPA					
CCROSE						RIRATER					
RAURADI						QUETHAR					
OSTVIRG											
RUACBAN											
BODPEIT											
QARSCOP											
QUAPALL											
LUSWINE											
EURTACR											
DCEBURR											
DLUPETI											
CIECVTE											
IMPCADE											
CARPENS											

Small in part common

14 mbs over some

SITE: POLYGON SURVEYOR(S):  
 UTMZ: UTM: DATE: UTMN:

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b>					
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK					
<b>COVER</b>	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<b>COMM. TYPE</b>	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<b>OTHER</b>	<input type="checkbox"/> HERBGR0W

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	4	QUERUBRS, ACESASA > ACERKUR
3 SUB-CANOPY	2/3	4	ACE SDSA > TLATER
4 UNDERSTORY	3	4	PEAPENS > RAACATI > PRVIRG
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-40% 5 = > 40%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES	
	HT	CVR
DEADFALL/LOGS	FIRM	< 10cm
	DECAYED	< 10cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  
 PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

Small wetland





PLANT SPECIES LIST

SITE: 407 Transitionary

POLYGON: HDS2-1d

DATE: July 12/17

SURVEYOR(S): NMC

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PADRUNU				O										
NDPANGU				D										
SALFRNG		R												
PLVAME			R											
MITRIPA				R										

POLYGON SURVEYOR(S):

SITE: HDS2-1d

DATE: July 12/17

UTMZ: 17N 105E

UTME: 650000

UTMN: 1700000

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL WETLAND	<input type="checkbox"/> ORGANIC SUBSTRATE	<input type="checkbox"/> LACUSTRINE TOPO. FEATURE	<input type="checkbox"/> NATURAL HISTORY	<input type="checkbox"/> PLANKTON PLANT FORM	<input type="checkbox"/> LAKE COMMUNITY
<input type="checkbox"/> AQUATIC	<input type="checkbox"/> MINERAL SOIL	<input type="checkbox"/> RIVERINE TOPO. FEATURE	<input checked="" type="checkbox"/> CULTURAL HISTORY	<input type="checkbox"/> SUBMERGED PLANT FORM	<input type="checkbox"/> POND COMMUNITY
<input type="checkbox"/> OPEN WATER	<input type="checkbox"/> PARENT MATERIAL	<input type="checkbox"/> BOTTOMLAND TOPO. FEATURE	<input type="checkbox"/> OPEN COVER	<input type="checkbox"/> FLOATING LVD PLANT FORM	<input type="checkbox"/> RIVER COMMUNITY
<input type="checkbox"/> SHALLOW WAT.	<input type="checkbox"/> ACIDIC BEDROCK	<input type="checkbox"/> TERRACE TOPO. FEATURE	<input type="checkbox"/> SHRUB COVER	<input type="checkbox"/> FOREB PLANT FORM	<input type="checkbox"/> STREAM COMMUNITY
<input type="checkbox"/> SURFICIAL DEP.	<input type="checkbox"/> BASIC BEDROCK	<input type="checkbox"/> VALLEY SLOPE TOPO. FEATURE	<input type="checkbox"/> TREE COVER	<input type="checkbox"/> FORB PLANT FORM	<input checked="" type="checkbox"/> MARSH COMMUNITY
<input type="checkbox"/> BEDROCK	<input type="checkbox"/> CARB. BEDROCK	<input checked="" type="checkbox"/> TABLELAND TOPO. FEATURE	<input type="checkbox"/> INCLUSTON COVER	<input type="checkbox"/> LICHEN PLANT FORM	<input type="checkbox"/> SWAMP COMMUNITY
		<input type="checkbox"/> ROLLING UPLAND TOPO. FEATURE	<input type="checkbox"/> COMPLEX COVER	<input type="checkbox"/> BRYOPHYTE PLANT FORM	<input type="checkbox"/> BOG COMMUNITY
		<input type="checkbox"/> CLIFF TOPO. FEATURE	<input type="checkbox"/> COMPLEX COVER	<input type="checkbox"/> DECIDUOUS PLANT FORM	<input type="checkbox"/> BARREN COMMUNITY
		<input type="checkbox"/> TALUS TOPO. FEATURE	<input type="checkbox"/> COMPLEX COVER	<input type="checkbox"/> CONFEROUS PLANT FORM	<input type="checkbox"/> MEADOW COMMUNITY
		<input type="checkbox"/> CREVICE/CAVE TOPO. FEATURE	<input type="checkbox"/> COMPLEX COVER	<input type="checkbox"/> MIXED PLANT FORM	<input type="checkbox"/> PRAIRIE COMMUNITY
		<input type="checkbox"/> ALVAR TOPO. FEATURE	<input type="checkbox"/> COMPLEX COVER	<input type="checkbox"/> MIXED PLANT FORM	<input type="checkbox"/> THICKET COMMUNITY
		<input type="checkbox"/> ROCKLAND TOPO. FEATURE	<input type="checkbox"/> COMPLEX COVER	<input type="checkbox"/> MIXED PLANT FORM	<input type="checkbox"/> SAVANNAH COMMUNITY
		<input type="checkbox"/> BEACH/BAR TOPO. FEATURE	<input type="checkbox"/> COMPLEX COVER	<input type="checkbox"/> MIXED PLANT FORM	<input type="checkbox"/> WOODLAND COMMUNITY
		<input type="checkbox"/> SAND DUNE TOPO. FEATURE	<input type="checkbox"/> COMPLEX COVER	<input type="checkbox"/> MIXED PLANT FORM	<input type="checkbox"/> FOREST COMMUNITY
		<input type="checkbox"/> BLUFF TOPO. FEATURE	<input type="checkbox"/> COMPLEX COVER	<input type="checkbox"/> MIXED PLANT FORM	<input type="checkbox"/> PLANTATION COMMUNITY

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > WHICH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	2	1	SALFRNG
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4-5	5	TPRANGU >>> PADRUNU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES			
	< 10cm	10-24cm	25-50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm
DECAIED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

25-1000



PLANT SPECIES LIST

SITE: Hwy 407 Transition 1 7

POLYGON: MAM 2-26

DATE: July 12/19

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
ACENEGU			R	O										
PLARKUN				A										
SALDUBA			R											
ULMBER			R											
PARAUST				AND										

POLYGON SURVEYOR(S):

SITE: UTMZ: UTM: UTMN:

DATE: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> SKWETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARR. BEDROCK	<input type="checkbox"/> LACISTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input checked="" type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORE <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> TERN-MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERDGRASS <input type="checkbox"/> OTHER

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO.)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	3/4	5	PARAUST > PLARKUN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DEADFALL/LOGS	DECEAYED < 10cm	10-24cm	25-50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MIDD-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 Tenstary
	POLYGON: CUM-14
	DATE: July 12/19
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PURNAKST				A										
PADDUNA				A										
SOLCANA				A										
CRABVE				A										
SANDRIVE				A										
LOT ORA				A										
BROWER				A										
POPPADT				A										
CORVARIA				O										
VICERR				O										
UMANE				O										
KADACATA				O										
HELD PA				O										
THP 4P				O										
FESRUBR				O										
DIPSYFU				O										
HECOFEI				O										
TRIDPEP				O										

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:
		DATE:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BAREEN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER	COMM. TYPE	OTHER		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK	<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW		

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > WHICH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4-7	5	SOLCANA < CRABVE = PADDUNA < BROWER

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES		
	< 10cm	10-24cm	> 50cm
FIRM	< 10cm	10-24cm	> 50cm
DECAYED	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER 
  YOUNG 
  MID-AGE 
  MATURE 
  OLD-GROWTH



PLANT SPECIES LIST	SITE: 102 Transhauy
	POLYGON: 4
	DATE: July 12/19
SURVEYOR(S): NMF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
ALACATHA			A	A										
WYMANIER			R	R										
CAROVAT		R	R	R										
BROUNDER				A										
BUMCERS				R										
LOUNTATA				O										
DIPSYEU				R										
SOLCANA				O										
ANECANA				O										
VITRIDA				O										
QUE RUBE		R												
PODEIT		R	R											
POPREM		R	R											
TUGNIGR		R	R											
TILAMER		R												
QUEALBA		R	R											
PODRST				A										
BROUNDER				A										
RUMCEIP				R										
CORRAGS				R										

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACISTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DICEDIOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> NATURAL <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREE <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGRW <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER 
  YOUNG 
  MID-AGE 
  MATURE 
  OLD-GROWTH

25-100m

**PLANT SPECIES LIST**

SITE: 402 Transitory  
 POLYGON: HAS25  
 DATE: July 12/19  
 SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				SPECIES CODE	LAYER			
	1	2	3	4		1	2	3	4
PADARUN				O					
PARAVST				D					

**POLYGON SURVEYOR(S):**

SITE: \_\_\_\_\_ POLYGON: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 UTMZ: \_\_\_\_\_ UTMN: \_\_\_\_\_

**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAKESTRINE <input type="checkbox"/> RIVERINE <input checked="" type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> FRAGRANOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECELILOUS <input type="checkbox"/> COMFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER		COMM. TYPE	OTHER	
<input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLISION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW <input type="checkbox"/> PLANTATION	

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4-5	6	PARAVST >> PADARUN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm		10-24cm		25-50cm		> 50cm	
	STANDING SNAGS	FIRM	DEAD	LOGS	DEAD	LOGS	DEAD	LOGS
	< 10cm	< 10cm	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm	> 50cm
	< 10cm	< 10cm	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm	> 50cm
	< 10cm	< 10cm	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm	> 50cm

**COMMUNITY MATURITY:**

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



**PLANT SPECIES LIST**

SITE: 1102 Transition

POLYGON: FODS-2

DATE: July 31, 19

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.	
	1	2	3	4			1	2	3	4		
ADONIS					R	QUERUS						
ALAMER						ERIDANU						
PRUSERO						QUEALBA						
CORFOE						MUPETI						
RUARDI						SOLATI						
GRAPEDI						ARC MINU						
ROPRETH						GEUALLE						
ROSMUCT						DEXFREE						
INTRIPDR						FRVIRG						
FRVIRG						PINSTRO						
MECADD						MUMMER						
GELPORE						GALAPOR						
ACERURB						POANNNU						
ACESASA						CARIVTU						
FRDAMER						CARSCOP						
QUEHDCR						QUAFRAN						
FEDPENV						ACERURB						
RIADNER						FAGGRAN						
CRULTE						MIBOPUL						
DSTVIRG						RIBIDDE						
SENRARUE						PRPTINSE						
CAPENS						IHPGLAN						
RIACATI						TSICAVA						
VIOCONS												

**POLYGON SURVEYOR(S):**

SITE: \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

POLYGON: \_\_\_\_\_

DATE: \_\_\_\_\_

UTMN: \_\_\_\_\_

**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAGSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LND <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CLIFF <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BCG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PARAKE <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

**SITE**

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

**COVER**

OPEN  
 SHRUB  
 TREED

**COMM. TYPE**

INCLUSION  
 COMPLEX

**OTHER**

HERBROW

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	3	ACESASA = QUEALBA
3 SUB-CANOPY	2	4	ACESASA, ACESASA > CAROVAT
4 UNDERSTORY	3	4	ACESASA > RIACATI
5 GROUND LAYER	4	4	GELPORE = CRULTE

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS				
DEADFALL/LOGS				

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

**COMMUNITY MATURITY:**

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 Trans Hwy
	POLYGON: CUT1-40
	DATE: July 31, 19
	SURVEYOR(S): NIME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
VICERRA						POTRECT					
WATERPFE						ERIANNU					
VICERRA											
BLADDER						LYNCLIS					
ERICANNA						SYMLATE					
UNPERFE						POACORP					
CORFOE						TRAIIRG					
SOLICANA						POTSINTP					
DORECT						TRIPKAT					
RESURI						PANACRI					
REGALVA						TRPSR					
GRARVE						LUTSALI					
CRATPEDI						TLIHLER					
SPINDANG						PISTED					
DIPSYEU						DIARHE					
NTRIPA						LOTORN					
QUEURR						POOTREH					
QUACATI						CAROVAT					
TRIMBR						QUEIAGR					
TAUCARO						SIEURBR					
CARBERI						RHACATI					
QUAMITO						RUBINA					
PULPRET						TRIDPANT					
ESRURBA						CORFOE					
ELEUMBE						QUEADUA					
ROONER						CRATPEDI					
DAEGLON						EURMACK					

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	3	PICGLAU
3 SUB-CANOPY			
4 UNDERSTORY	4	4	CORRACE >> RHACATI 4
5 GROUND LAYER	5-7	5	POA SP = PROVIDER

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.3-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm		10-24cm		25-50cm		> 50cm	
	STANDING SNAGS	FIRM	DEAD	DECAYED	STANDING SNAGS	FIRM	DEAD	DECAYED

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2 C-40m

\* Sm diameter of small trees < 0.1 m





SITE: TAG283  
 POLYGON: EDD2-30  
 DATE: June 30, 2009  
 SURVEYOR(S): H Pan

SITE: \_\_\_\_\_  
 POLYGON: \_\_\_\_\_  
 SURVEYOR(S): \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 UTMZ: \_\_\_\_\_  
 UTM: \_\_\_\_\_  
 UTMN: \_\_\_\_\_

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
HEMSTR						ALPOM					
ZUGOM						PIUTYPH					
VI RIPA						PIUCATYH					
FRPDUM						PODEIT					
TUSPREF						ACE NIGAL					
SALTRGOSP						SAL ERAS					
						ACE SACC					
						SALXSP					
						LOTTART					
						CEATSE					

**POLYGON DESCRIPTION:**

<b>SYSTEM</b>	<b>SUBSTRATE</b>	<b>TOPO. FEATURE</b>	<b>HISTORY</b>	<b>PLANT FORM</b>	<b>COMMUNITY</b>
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREEVE/CAVE <input type="checkbox"/> ALYAK <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BANK <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRASSHNOID <input type="checkbox"/> FERG <input type="checkbox"/> LCHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> ESCLEOUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BARRON <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b>	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	<input type="checkbox"/> INCLISION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBROW

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>= WHICH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = 10-25% 3 = 25-35% 4 = 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	< 10cm	10-24cm	25-50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE  
 COMMUNITY MATURITY:  
 PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

Observed only with binoculars



**PLANT SPECIES LIST**

SITE: TA 8732

POLYGON: FOC2-2

DATE: July 21 2019

SURVEYOR(S): H. RAYON

POLYGON: FOC2-2

SURVEYOR(S): UTMZ:

DATE: UTME:

UTMN: UTMN:

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SHRUBS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.	
	1	2	3	4			1	2	3	4		
						THUCCI	D	D				
						PINSTR	O	O				
						ACENERG	O	O				

**POLYGON DESCRIPTION:**

**SYSTEM**  TERRESTRIAL  WETLAND  AQUATIC

**SUBSTRATE**  ORGANIC MINERAL SOIL  PARENT MATERIAL  ACIDIC BEDROCK  BASIC BEDROCK  CARB. BEDROCK

**TOPO. FEATURE**  LAELSTRONE  RIVERINE  BOTTOMLAND  TERRACE  VALLEY SLOPE  TABLELAND  ROLLING UPLAND  CLIFF  TALUS  CREVICE/CAVE  ALVAR  ROCKLAND  BEACH/BAR  SAND DUNE  BLUFF

**HISTORY**  NATURAL  CULTURAL

**PLANT FORM**  PLANKTON  SUBMERGED  FLOATING LND  GRAMINOID  FORB  LICHEN  BRYOPHYTE  DECEIDUOUS  MIXED

**COMMUNITY**  LAKE  POND  RIVER  STREAM  WETLAND  SWAMP  BOG  BARREN  MEADOW  PRAIRIE  THicket  SAVANNAH  WOODLAND  FOREST  PLANTATION

**COVER**  OPEN  SHRUB  TREE

**COMB. TYPE**  INCLUSION  COMPLEX

**OTHER**  HERBICIDE

**SITE**  OPEN WATER  SHALLOW WAT.  SURFICAL DEP.  BEDROCK

**STAND DESCRIPTION:**

**LAYER** **HT** **CVR** **SPECIES IN ORDER OF DECREASING DOMINANCE (> HtCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)**

1 EMERGENT

2 CANOPY

3 SUB-CANOPY

4 UNDERSTORY

5 GROUND LAYER

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FRM	< 10cm	10-24cm	25-50cm
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2b-10w



**PLANT SPECIES LIST**

SITE: TAG 733 16 mile creek 64107 X

POLYGON: F026-3E

DATE: July 31 2009

SURVEYOR(S): H. K. K. K.

**POLYGON SURVEYOR(S):**

SITE: TAG 733 16 mile creek 64107 X

POLYGON: F026-3E

DATE: July 31 2009

UTM Z: 18QUC

UTM E: 641070

UTM N: 1600000

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SPRINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
WABATE						ACEBRO	D	D	A		
SOULEX						ACENEGU	D	D			
PLPETI						QUERURK	D	D			
ANTPEV						AROVAT		R	D		
GEURTEP						FREBAGAN		R	D		
CARPEMS						RHOGETI			D		
CARROSI						PIUSTRO		R	D		
PODPEST						TILANER		R	D		
HACURIS						MIANWER		R	D		
THARUKI						TSUCANA		R	D		
FRALVIO						FRARWER			D		
ASACANA											
CANICANA											
TOYERADI											
WTERPA											
PODPAWINSER											
CRUTHEL											
INERPE											

**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYCE/CAYE <input type="checkbox"/> ALYAK <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BANK <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECAPODUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

**SITE**

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

**COVER**

OPEN  
 SHRUB  
 TREED

**COM. TYPE**

INCLUSION  
 COMPLEX

**OTHER**

HERBIVOR

**STAND DESCRIPTION:**

SPECIES IN ORDER OF DECREASING DOMINANCE

(> = MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)

LAYER	HT	CVR
1	EMERGENT	
2	CANOPY	
3	SUB-CANOPY	
4	UNDERSTORY	
5	GROUND LAYER	

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50cm
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

**COMMUNITY MATURITY:**

PIONEER  YOUNG  MIDD-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST

SITE: T83723

POLYGON: M42-10

DATE: AUG 31, 2019

SURVEYOR(S): H PARR

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SHRUBS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: B = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
HERNANT						ANUBUT					
EUPHORB						SHRUB					
DIPOPERE						LAMPRT					
WITSPAL											
PATFLUM											
MENTHAR											
VERHIND											
LYCUNITE											
CINMACE											
SAGLEPTI											
LDWERS											
TUPENBU											
SIVAPA											
DALEON											
IMPPOPE											
PETPRLM											

POLYGON SURVEYOR(S):

SITE: T83723

DATE: AUG 31, 2019

UTMZ: H PARR

UTME:

UTWN:

POLYGON DESCRIPTION:

SYSTEM:  TERRESTRIAL  WETLAND  AQUATIC

SUBSTRATE:  ORGANIC  MINERAL SOIL  PARENT MATERIAL  ACIDIC BEDROCK  BASIC BEDROCK  CARB. BEDROCK

TOPO. FEATURE:  LACSTRONE  RIVERINE  SOTLOWLAND  TERRACE  VALLEY SLOPE  TABLELAND  ROLLING UPLAND  CLIFF  TALLUS  CREVICE/CAVE  ALVAR  ROCKLAND  BEACHBAR  SAND DUNE  BLUFF

HISTORY:  NATURAL  CULTURAL

PLANT FORM:  PLANTON  SUBMERGED  FLOATING LVD  SPERMATOPHYTE  FORB  LICHEN  BRYOPHYTE  DECIDUOUS  CONIFEROUS  MIXED

COMMUNITY:  LAKE  POND  RIVER  STREAM  MARSH  SWAMP  FEN  BOG  BARREN  MEADOW  PRAIRIE  THicket  SAVANNAH  WOODLAND  FOREST  PLANTATION

COVER:  OPEN  SHRUB  TREE

COMPL. TYPE:  INCLUSION  COMPLEX

OTHER:  HERBICIDE  PLANTATION

STAND DESCRIPTION:

LAYER: 1 = EMERGENT 2 = CANOPY 3 = SUB-CANOPY 4 = UNDERSTORY 5 = GROUND LAYER

HT: 1 = > 25m 2 = 10-25m 3 = 5-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m

CVR: 0 = NONE 1 = 1-10% 2 = 10-25% 3 = 25-35% 4 = 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
DEADFALL LOGS	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

26 - four

PLANT SPECIES LIST	SITE: RWY 402 TRANSITION
POLYGON: CUM-1A	
DATE: July 31/9	
SURVEYOR(S): JMC	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
QUEMACR	R					ELIUMYRE		R			
RHAGATH		A				LOTICOLU					
VECRAC						TRILIMBR					
PMDDRUM						SUM-LATE					
DDSLFU						CORRCE					
PBWBKRI						RUSVUV					
DDCGLM						MEALERA					
PDWNEA						SCR-SP					
CONSERI						CARREGR					
SOLANVA						CARVULP					
ONSTRO						PICGLAU					
RYTRIAL						VTRIPA					
LOT-CORV						QUEMACR					
LEDEBY						MIRTRIL					
SUE-ALBA	R					PORTREH					
CORFORA						TYRANGU					
POAPRET						PMDDRUM					
RORPSEV											
SANDOWN											
TUUTENU											
TRSTRUBR											
TRC-DEH											
CONCALMA											
YAVARUE											
CHL-INTA											
GR-ARVIE											
DDCGLM											

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:
DATE:		

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAKESTRONE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		OTHER	
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX <input type="checkbox"/> HEDGROW	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	1	1	QUE-SP >> SUGWIGR
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	3/4	2	RHAGATH >> COR-3
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DEADFALL/LOGS	DECEAYED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

5-05/2000





POLYGON: CUH-1f

DATE: July 2018

SURVEYOR(S): MPF

SITE: 402 Transitions

POLYGON: 9

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
SALFRAG	0					PULPRT					
SHRUBUS		R				FRAPENNI		R			
SALICINA						LOTORU				A	
VICCEAR					OBA	QUERIBK		R			
DAPPRT						RUTMNI				O	
UMDUTHI		0				FESRUBR				O	
PELARIAN					TA	BUNCIS				R	
DIDYCVU					0	PACOMP				A	
GLENESE					0	BROTECH				R	
JWGLGR	R	R				TAVOYO		R			
RUBDFT						QUERURR		R			
PICGLAU						DESASA				R	
GLAPAPR					0	TRPANGU					
DECHINU					0	CONCANR					
DEGLON					0	SOURAUE					
HUPPARE					0	PURVUS					
CORVARI					0BA	SALDTRA		R			
BRUWYER					A	ACAPUL				R	
DACGLON					A	MELALBA				O	
CORVARI					0	AMRARTS				O	
TRARUE					0	EUPESUL				R	
UMHNER		R	R			FRADLIR				R	
DESACC						DISANG				R	
GILLIMY					R	UTSAL				R	
ASCYRI					0	LOPERR				R	
SANDON					0	POLYPER				R	
TRIPRAT					A	ASTIPI				0TA	

POLYGON: 9

SITE: 402 Transitions

POLYGON: 9

DATE: July 2018

SURVEYOR(S): MPF

UTMZ:  UTMX:  UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORE <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE					
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREE	<input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGEROW <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT		3	SALFRAG > TUGUIGR
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4-5	2	RUBGATAS FODPEVU
5 GROUND LAYER	5-7	5	SOLCANB=POADPRT=BRUWYER=LOTORU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

20-40%

\* in clusters of small MAS2-1 < 0.1 ha

PLANT SPECIES LIST	SITE: 402 Transitionary	9
	POLYGON: CUTL-45	
	DATE: July 3 19	
	SURVEYOR(S): NMF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
NICOTRAC													
MATRPERF													
PLADARUN													
CONGANA													
CORFNE													
SOCALIA													
RODRAT													
AGSURI													
CIRARVE													
CRATPEDI													
DIPSHFU													
VITRIPA													
RHDCATH													
DAUCA RO													
PLDHADO													
PALPRDT													
FESRUBK													
ELAMIBE													
BEUNER													
DDELGLON													
DOTRECT													
TRLEPPT													
EUPPEPF													
LOTORN													
QUEHADR													
PUBIDAU													
PUMCRIS													

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORE <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			COVER <input type="checkbox"/> OPEN <input checked="" type="checkbox"/> SHRUB <input type="checkbox"/> TREE	COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	OTHER <input type="checkbox"/> HERBGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > WHICH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	3/4	3	CORRACE >> RHDCATH
5 GROUND LAYER	5-7	5	GRMINOID SP >> FORBS

HT CODES: 1 = > 25m 2 = > 10-25m 3 = > 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MIDD-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 403 Transponder	10
	POLYGON: CUM-1a	
	DATE: July 14/19	
	SURVEYOR(S):	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
CIRARVE						ACEGASA					
DUCARBO						QUEBUR					
ELUTRPA						TRPBU					
MELASGD						POACOMP					
CORUPRI						SONARVE					
SALCANA						SUNCOALT					
PURAJUST						LHEARRO					
FESKURK						CELOCCI					
ROAPRAT						PICGLAU					
DIPSEFU						QUEBUR					
BROULIE						POACOMP					
LOTICORU						SETPMTI					
CEUBIRU											
ERADAMER											
RAKATU											
PAADARU											
MICGAGC											
CEUBUTY											
SETVIRI											
ERADAMU											
VITRIDA											
PROTECA											
PLHATO											
HIPBERE											
SMUDORD											
SMULATE											

Handwritten notes: *competing ground*, *highly abundant*, *small*, *attracts*, *Pioneer*, *Pioneer*, *Pioneer*

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
	UTMN:	

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRABINDD <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST
SITE <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			COVER <input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	OTHER <input type="checkbox"/> HERBROW <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			PICGLAU = QUEBUR
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			MELURAD=LOTORU = PIONEER

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

	TREES	STANDING SNAGS					DEADFALL/LOGS					
		< 10cm	10-24cm	25-50cm	> 50cm	> 50cm	FIRM	DECAYED	< 10cm	10-24cm	25-50cm	> 50cm
	R											

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 403 Trans Hwy	10
	POLYGON: H	
	DATE: July 16/19	
SURVEYOR(S): NME		

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
RUGOSA														
PRINVER														
PARROT														
SUB-RUBR														
ALCASSA														
ALB-PLANT														
CAROLYT														
RUBRIGS														
CRATSD														
DIPSYEU														
PLARUL														

POLYGON SURVEYOR(S):	SITE:	POLYGON:
	UTMZ:	UTME:
	UTMN:	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOLUS <input type="checkbox"/> BOG <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUBS <input type="checkbox"/> TREAED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW <input type="checkbox"/> OTHER

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

	TREES	STANDING SNAGS	DEADFALL/LOGS
	< 10cm	< 10cm	< 10cm
	10-24cm	10-24cm	10-24cm
	25-50cm	25-50cm	25-50cm
	> 50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  
  YOUNG  
  MID-AGE  
  MATURE  
  OLD-GROWTH

20-20m

PLANT SPECIES LIST  
 SITE: 402 Transilvania  
 POLYGON: E002-4a  
 DATE: 2008 3/11/09  
 SURVEYOR(S): NRE

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
CAROVET													
OUERUBR													
TRAPENS													
BLACATA													
CRUTE													
RVIRIG													
DESASA													
VTRIPA													
TILANER													
MANER													
CORACE													
CRAT PEDI													
PRUSERO													
QUETWAR													
PACTINE													
QUEMNCRO													
CARCCOP													
QUEBICO													
TRAVESC													

POLYGON SURVEYOR(S):  
 SITE:  
 DATE:  
 UTMZ:  
 UTM:

\* Access constraints - eastern portion

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST
SITE <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	<input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	1	1	QUEBICO
2 CANOPY	2	4	QUERUBR > TILANER > CAROVET
3 SUB-CANOPY	2/3	3	TILANER > CAROVET = QUERUBR
4 UNDERSTORY	4	3	BLACATA > PRAMER > CAROVET
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	> 50cm
	DECAYED	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

**PLANT SPECIES LIST**

SITE: 402 Transduran 1011

POLYGON: EOD2-49

DATE: July 16/19

SURVEYOR(S): NINE

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
ERAPENUS						ERYANTER					
CAROVAT	A	O	O								
ALPESIA	O	O	O								
PIUSTRO	R										
REACTA											
QUE RUIR	A	R									
TUPHER	R	R									
PERNEGU											
EDOUIGR	R										
SUNIGR	R										
GERROBE											
EURHACR											
SOLRUGO											
QUE BICO	R										
RUB SP.		R									
PRUWIG			O								
CARDINA				R							
LANI SP.			R								
EURLUITE				O							
CORPENS				A							
SOLCAES				R							
PODPELT				R							
GERMACH				R							
EMOOSOVY				O							
TRIGRAN				R							
DRITRTRI				R							
PDDORUN				O							

Scam passing in June 18

**POLYGON**

SITE: \_\_\_\_\_

SURVEYOR(S): \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

UTMN: \_\_\_\_\_

DATE: \_\_\_\_\_

\* Access constraints - western portion

**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY		
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CANYE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> SPOECIOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> BFOREST <input type="checkbox"/> PLANTATION		
<b>SITE</b>	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK				<input type="checkbox"/> COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> COMM. TYPE <input type="checkbox"/> INCLISION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> OTHER <input type="checkbox"/> HERBROW

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	4	QUE RUIR > CAROVAT >> ALPESIA
3 SUB-CANOPY	2	3	CAROVAT > ALPESIA
4 UNDERSTORY	3/4	4	QUE RUIR > CAROVAT
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST  
 SITE: 407 Transitory  
 POLYGON: CWDIF  
 DATE: July 31/19  
 SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
WLFMEIR		R	R											
JUGNUS2		O	O											
LONGSTA			O											
POACOMP				A										
PLACRST														
ROSPRRT														
ROBSEU														
HEFTULV				R										
TRALPDR		R												
ACESTRC		A	R											
ACESASA			O	R										
ROPRTH			O	O	R									

POLYGON SURVEYOR(S):  
 SITE: CWDIF  
 UTMZ: 18TJG  
 UTMN: 18TJG

\* Private property, no permission

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING HILLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTONI <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> HERBAGEROW <input type="checkbox"/> OTHER
--	--	--	--	--	---	---

SITE:  OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN = ABOUT-EQUAL TO)
1 EMERGENT			
2 CANOPY	2	4	ACESACC >> ROBSEU
3 SUB-CANOPY	3	4	JUGNUS2 > ROPRTH
4 UNDERSTORY			
5 GROUND LAYER			ROSP >> HEFTULV

HT CODES: 1 = >25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS				
DEADFALL/LOGS				

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 Transition
	POLYGON: PAS2-14
	DATE: July 31/19
SURVEYOR(S): NMF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
TPDANGU				D										
PANARUV				O										
LYTHSAC				O										
VERUJST				R										
SALS P				R										
ACESACC				R										

POLYGON SURVEYOR(S):	SITE:	POLYGON:
	UTMZ:	UTME:
DATE:		

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input checked="" type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGRW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	1	SALIX SP. > ACESACC
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	TPDANGU > PANARUV

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm		10-24cm		25-50cm		> 50cm	
	STANDING SNAGS	FIRM	STANDING SNAGS	FIRM	STANDING SNAGS	FIRM	STANDING SNAGS	FIRM
DEADFALL LOGS								

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  
 PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH





PLANT SPECIES LIST	SITE: 402 Transitional
	POLYGON: MAS 2-1e
	DATE: July 31/19
	SURVEYOR(S): JHM

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
SAURAG	R	R												
ACERRE		R												
DIPSLEU					O									
PLAARUN					A									
RANACATI			R											
FRANIGR	R	R												
ERAPENS			R											
TYPLOTT					D									

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:
		DATE:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> SWETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTONI <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE					
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK	COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED				
		COMM. TYPE		OTHER	
		<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX		<input type="checkbox"/> HEDGEROW <input type="checkbox"/> PLANTATION	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	TYPLOTT > PRAIRIE

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

	TREES	STANDING SNAGS	DEADFALL/LOGS
< 10cm	R		DECAYED
< 10cm		FIRM	< 10cm
10-24cm	R		10-24cm
10-24cm			25-50cm
25-50cm			> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2C-01a

PLANT SPECIES LIST	SITE: 407 TRANSITIONARY
	POLYGON: CUMI-1g
	DATE: JULY 31/197
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
HELALRD				A										
SOLCANVA				D										
FRAPENIU			R											
RUPCRIS				R										
RUCGSM				R										
UMOMER				R										
VTRLRPD				O										
CONCANA				R										
ERIPNUIV				O										
DNYCARO				O										
POTSITP				O										
CHDRUC				O										

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:
		DATE:

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACTISTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING HILLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTONI <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input checked="" type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DICEDUCOUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGEROW <input type="checkbox"/> OTHER
SITE								

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5-7	S	SOLCANVA > HELALRA

HT CODES: 1 = >25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: U02 Transition
	POLYGON: CUM-1a
	DATE: June 3/19
	SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
DESCUR1						PRUVIRG							
RHACDTM			A			DIRAUST			R				
DAUCDR			O			SILPERGE				R			
BROVIER			A			MICRRAC				O			
DPSHFU			O			CCINTY				R			
CONCANMA			O			ACBUEGK				R			
PRGTHDUU			O			TULAMER				R			
SUMUDTE			O			PRUVIRG				R			
POAPEAT			A			RHURBDR				O			
RUMCRIS			R			EUTGRPH				R			
HELALBD			A			CARVIND				R			
SOLCANMA			A										
CRARIVE			A										
VITRIPA			O										
ASPOFIL			O										
LONTANTA			R										
FRAPENS			R										
MAUSP			R										
IMVIGRE			C										
UMMER			R										
GEUCALMA			R										
CARBEIR			O										
QUETACK			R										
SAMUOAL			C										
ELCUBGE			R										
EPHIBRS			R										

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:
		DATE:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> WASH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARRON <input type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER	COMM. TYPE	OTHER		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBSICAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGROW		

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	3/2	2	RHACDTM
5 GROUND LAYER	5-7	5	PRONER = DOKRAT = SOLCANMA = CRARIVE

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADBALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 402 Transition
	POLYGON: H and H
	DATE: July 2010
	SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
DOSHEU													
VERTUAD													
MACMUNU													
BRONNER													
DEUCARU													
HYPERREF													
ALDETI													
TALDINE													
CRAPUNC													
SOLCAWA													
LIC STER													
GRASP													
CIRVULG													
POT RECT													
RUBACTA													
CERVEST													
WH RIPAR													
RUNC RIS													
EDINIRS													
CRVUUP													

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTONI <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBCICIAL DEP. <input type="checkbox"/> BEDROCK				
	<input type="checkbox"/> COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED				
	<input type="checkbox"/> COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX				
	<input type="checkbox"/> OTHER <input type="checkbox"/> HEDGEROW				

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 402 Transition
	POLYGON: HAS2-10
	DATE: July 31/19
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
PURDUST				A									
TYDANGU				A									
RUMCRIS				O									
BROINER				O									
DAUGARO				O									
RIADATH				R									
POTRECT				O									
PARPRAT				O									

~ 0.5 to 0.25 depressed ditch  
 - depth 1 to 2 cm  
 ~ 10 to 15 cm wide

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING HILLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DICHLUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE					
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK					
COVER					
<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED					
COMM. TYPE					
<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX					
OTHER					
<input type="checkbox"/> HEDGEROW					

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (<> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4	5	PURDUST ≥ TYDANGU

HT CODES: 1 = >25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 Transition 11
	POLYGON: PTM 2-29
	DATE: July 2/19
	SURVEYOR(S): AME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
PADDONUN				D									
TIDDINGU				R									
WTSALI				R									
CRDPENS				R									
DIRSIEU				R									
EUPREBE				R									

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:
		DATE:

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> ALVAR <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> OTHER <input type="checkbox"/> HERBGEROW
---	---	--	--	---	---	--	---	---	--

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	PADDONUN >>> TIDDINGU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST  
 SITE: HWY 401 TRANS HOOK  
 POLYGON: CUT1-4C  
 DATE: 5 MAY 2019  
 SURVEYOR(S): UM

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
RUACATA														
YTRIPA														
CORRAC														
CONTRTA														
TRAPPUS														
QUERUBR														
DIPTYUL														
ULMAMER														
BROUWER														
PODPRDT														
CARVULI														
PADDRUN														
SOLCANVA														
SOLGISA														

POLYGON SURVEYOR(S):  
 SITE:  
 DATE:  
 UTMZ:  
 UTMX:  
 UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL <input type="checkbox"/> TREED	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input checked="" type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARCH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input checked="" type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO)
1 EMERGENT		3	QUERUBR
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	3	CORRAC => RUACATA
5 GROUND LAYER	5	4	BROUWER > SOLCANVA > PADDRUN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST	SITE: 1004 402 TRAILS EMBANKMENT
	POLYGON: FODZ-4B
	DATE: July 31/19
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
CAROVAT	0	0	0	0		PRUVIRG					
QUEBUIR	0	0	R	0		QUEBICG					
CAPTEDI						EUGONOV					
RUCCATM						CORPENU					
FRANVIG						FURNACRO					
ACESSAS						CARDIPA					
AVECANA						GERHACH					
GEVUCLE						ERAMHM					
CIRLUVE						SOLCAES					
JUGNIGR						TRIGRAN					
PINSTRO						SOLEX					
PODPELT											
OSTVIRG											
GERROBE											
MITRIFAR											
QUEMAGR											
RAUTUPAI											
TILANER											
FRAGREAN											
ROPTREH											
PRUSERO											
CRANVESC											
FRUPINDS											
RUAIDPENO											
WHPKER											
PRUPEUS											
PRDORUN											

July 2019

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUESTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER	COMM. TYPE	OTHER		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	<input type="checkbox"/> ANGLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW		

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	1	4	QUEBUIR > CAROVAT > ACESASA
3 SUB-CANOPY	2	3	CAROVAT > OSTVIRG > ACESASA
4 UNDERSTORY	3/4	4	PRUPEUS > ACESASA > PRUVIRG
5 GROUND LAYER	5-7	4	CIRLUVE > SANCAVA > GERROBE

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm		10-24cm		25-50cm		> 50cm	
	STANDING SNAGS	FIRM	DECAYED	STANDING SNAGS	FIRM	DECAYED	STANDING SNAGS	FIRM
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH





PLANT SPECIES LIST	SITE: 402 Trans Hwy	12
	POLYGON: MAS2-1h	
	DATE: Aug 7/19	
	SURVEYOR(S): NIMS	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
SCDP123P				R										
VE RADST				R										
CORFORA				O										
PURAVST				P										
DIADARUN				O										
LYTSBI				R										
TRPABTU				R										
SNLIX SP				R										
RUCGATH				R										
NITRPA				R										
SOLCANA				R										

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> BAWETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> RUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRASSHOB <input type="checkbox"/> FORK <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b>			<b>COVER</b>	<b>COMM. TYPE</b>	<b>OTHER</b>
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	4	1	CORFORA
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	TRPABTU ≥ PURAVST

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 403 Transhobby	12
	POLYGON: MAN2-2h	
	DATE: Aug 2011	
SURVEYOR(S): VME		

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PEDRIMU				D										
ELEANGA		R	R											
CORRACE			O											
PADAVST			O											
VERDST			R											
UTSALT			R											
RUBCATU			R											

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> FOND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE					
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBEROV <input type="checkbox"/> OTHER <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	3	1	ELEANGA
3 SUB-CANOPY			
4 UNDERSTORY	4	2	CORRACE >> RUBCATU
5 GROUND LAYER	5	5	PEDRIMU

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = 10-25% 3 = 25-35% 4 = 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  
  YOUNG  
  MID-AGE  
  MATURE  
  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 Transition Hwy
	POLYGON: MAS2-14
	DATE: Aug 3/19
	SURVEYOR(S): NJME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
SCIRPACR													
VTISALLI													
PURPDRUY													
PURPDRUY													
TRPDRUGU													
ULMAMEA													
RUSGATN													
VITRIDA													
SOLIDULC													
CORFORA													

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:
	UTME:	UTMN:

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYICE/CAVE <input type="checkbox"/> ALYKAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDIOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARCH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST	<input type="checkbox"/> HERBEGROW <input type="checkbox"/> PLANTATION
SITE						
COVER <input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED <input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX <input type="checkbox"/> OTHER						

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO)
1 EMERGENT			
2 CANOPY	3	1	ULMAMEA
3 SUB-CANOPY	3	1	ULMAMEA
4 UNDERSTORY	2	1	CORFORAS = PARPENU
5 GROUND LAYER	HIS 5	1	TRPDRUGU = PURAUST = PURAARDNU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES		
	< 10cm	10-24cm	25-50cm
FIRM	< 10cm	10-24cm	25-50cm
DEAD/FALL/LOGS	< 10cm	10-24cm	25-50cm
DECAYED	< 10cm	10-24cm	25-50cm
ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE			

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST

SITE: 407 Transition 13

POLYGON: SWDZ-2a

DATE: Aug 7 11

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
ULMNER	R	R	R										
FRAXPENS	O	R	O										
RADCASTA			A										
UIGNIGR			R										
SOL SP.		2											
FRASR		O											

POLYGON SURVEYOR(S):

UTMZ: UTME: UTMN:

SITE: DATE: POLYGON: DATE: UTMN:

\* No access from construction site  
 \* 50-50 mature trees in the canopy dead, with most construction to be south  
 \* 100% potential to affect hydrology, community may be affected

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL <input type="checkbox"/> TILED	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LND <input type="checkbox"/> GRASSLAND <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

COVER:  OPEN  SHRUB  TILED

COMM. TYPE:  INCLUSION  COMPLEX

OTHER:  HEDGEROW  PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	4	FRAXPENS > ULMNER
3 SUB-CANOPY	3	3	FRASR.
4 UNDERSTORY	3/2	4	RADCASTA > FRASR.
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
DECAYED < 10cm	< 10cm	10-24cm	25-50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 Transhtway	13
	POLYGON: FOD5b	
	DATE: July 3/19	
	SURVEYOR(S): NMF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.	
	1	2	3	4			1	2	3	4		
UQUAUR				R								
TILATER												
QUEAUR												
CAKROSS												
CAKOVAT												
ACESSAS	A											
POPDEL												
MITRIRA												
CORRAC												
QUEMACR												
ULMATER	R											
ACESACC	R											
PERVIRG												
GIBUTE												
PINSTR0	R											
QUEAURA												
LOUTATA												
CRATSD												

Handwritten notes: several dead, color codes, edges

2d-wen

only surveyed southern edge & western edges

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input checked="" type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		OTHER	
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED		<input type="checkbox"/> INCLUSTON <input type="checkbox"/> COMPLEX <input type="checkbox"/> HEDGROW	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	4	ACESASA > QUEAUR > TILATER
3 SUB-CANOPY	2/3	4	ACESASA > QUEAUR > TILATER
4 UNDERSTORY	4	4	CORRAC > RUACATH
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	0	0	R		
DECAVED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH







PLANT SPECIES LIST	SITE: 407 Transylvania	13
	POLYGON: CUW10	
	DATE: Nov 3/07	
	SURVEYOR(S): NHE	

LAYERS: 1 = CANOPY TREES > 10m, 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
DODBREH	R					TILCORD	R				
PLADIRUM						DUSUV	R				
BRONNER						SUGBAR	R				
RUDCSH											
ROPSSEU	O										
ACELEGU	R	O									
ACESACC		A	R	O							
FRDPEUS											
WTRIPA		R	O	O							
CRDTRUC			O								
CORDEE			O								
QUETHAOR				R							
LOUTATA			O								
PRWRG			R								
SOLCAUA			O								
CURARVE			O								
SKRVUG			O								
ARCHINA			O								
DEBAUST			O								
POE SR			A								
SUMUDAN			O								
UUDATER			R	O							
THUDCCI			R								
ELEADGA			R								
SDC SP			R								
QUERURZ			R								
MRDLBS			R								

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

\* Properly entrance gated and locked, access limited, surveys undertaken from the roadside

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TARI ELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input checked="" type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input checked="" type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE					
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK					
COVER					
<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED					
COMM. TYPE					
<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX					
OTHER					
<input type="checkbox"/> HERBGRW					

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	7	ACESACC >> QUETHAOR
3 SUB-CANOPY	7	3	ROPSSEU < ACLETOGU
4 UNDERSTORY	4	3	CORACE < ACLETOGU
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

	TREES			STANDING SNAGS			DEADFALL/LOGS		
	< 10cm	10-24cm	> 50cm	< 10cm	10-24cm	> 50cm	< 10cm	10-24cm	> 50cm
FIRM									
DECAYED									

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST  
 SITE: 402 Transitory  
 POLYGON: CUH1-1a  
 DATE: 06/23/19  
 SURVEYOR(S): UPMC  
 13

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
PANDURUS			A			SONARVE			O		
BROWNER			A			ULTRAPHIL			R		
BOERHART			A			CIGUITY			R		
CIRROBUS			O			BOERSELI			O		
OLIVAST			O			SHORE RUBR			R		
DAUCARD			O								
CONUBRI			O								
ETHYRDELO			R								
SOLCANP			O								
ELEANGU			R								
RUCRALS			O								
DMRBRTE			O								
BRSVRA			O								
DRCHINDU			O								
ACENEGUND			R								
PICGHAUC			O								
ACEPUDU			R								
FRAPENS			R								
MDLSTE			O								
TRIPRAPT			O								
LOTGORN			O								
TRIREDE			O								
HYPRERE			R								
VICCRPC			R								
LYTSDLI			R								
EUTGEAN			R								

- including database of drawing species  
 identified by PURAUST (ypp) si

POLYGON SURVEYOR(S):  
 SITE: UTMZ: UTM: UTMN:  
 DATE:

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	
SITE <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBTERR. DEP. <input type="checkbox"/> BEDROCK		COVER <input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX		OTHER <input type="checkbox"/> HERBGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5-7	5	BROWNER → BOERHART → VICCRPC = PHAABAN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	< 10cm			10-24cm			> 50cm		
	STANDING SNAGS	FIRM	DECAYED	STANDING SNAGS	FIRM	DECAYED	STANDING SNAGS	FIRM	DECAYED
	< 10cm	< 10cm	< 10cm	10-24cm	10-24cm	10-24cm	25-50cm	25-50cm	25-50cm
	< 10cm	< 10cm	< 10cm	10-24cm	10-24cm	10-24cm	> 50cm	> 50cm	> 50cm
	< 10cm	< 10cm	< 10cm	10-24cm	10-24cm	10-24cm	> 50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE  
 COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 402 Transitway	13
	POLYGON: CUMI-1h-1	
	DATE: July 2/19	
	SURVEYOR(S): NME	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
SOLCANA				D										
CORRDE				O										
DIPSYEU				O										
LONUTATA				O										
UTRIPA				R										
RUDGETA				O										
UMANNER				R										
ALPDRVE				O										
ELEANGU				R										
PADARUN				O										
PROINER				O										
WPPER				R										
SYHATE				R										
SOUARVE				R										
BSCSYRI				R										
SYNDUAN				O										

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTM:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input checked="" type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX <input type="checkbox"/> HEDGEROW <input type="checkbox"/> OTHER	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5/6	5	SOLCANA >> PROINER

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DEADBALL/LOGS	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 402 Transitway POLYGON: HAM2G DATE: JULY 31/19 SURVEYOR(S): NMF	13
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LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.									
	1	2	3	4			1	2	3	4										
PUDRQUN				A																
PURDUST				D																

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	UTMN:
		DATE:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE			COVER	COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4	5	PURDUST >> PUDRQUN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2d-wgn



20-10-20

PLANT SPECIES LIST	SITE: 407 Touchstone	14
	POLYGON: 4	
	DATE: Aug 27, 1999	
SURVEYOR(S): NME		

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
ACESACC											
ACESDSA											
UNDERMER											
RORPSEUD											
EODPENS											
SELDLUBA											

POLYGON SURVEYOR(S) LIST	SITE:	POLYGON:	
	UTM2:		UTM1:
	UTM3:		UTM4:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CANE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL <input type="checkbox"/> TREADED	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LND <input type="checkbox"/> GRASSLAND <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARGEN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREADED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGRW <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DEADBALL/LOGS	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE  
 COMMUNITY MATURITY:

PIONEER  
  YOUNG  
  MID-AGE  
  MATURE  
  OLD-GROWTH



PLANT SPECIES LIST	SITE: 403 Transitivity	14
	POLYGON: M	
	DATE: Aug 31/19	
SURVEYOR(S): NJM		

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
ACEPST	R					ROD PRT					
PICPUDC	R					DUNINGAN					
TELLARA	R					QUETACK					
PICGUBU	R	O									
RODDEL	R										
DESBACC	O										
POKOMP											
VIDSANG											
VTRIPA		R									
PINKIGR	O	R									
DUNSTRO	R										
HDLSP			O								
LOTORN											
TRIPRT											
TUOCCI											
PICARF	O										
FRAX SP		R									
VIRADUI			R								
SUNHORL			R								
QUEALBA		R	R								
CODENUS		R									
POSPAR		R									
SAL SP		R									
PABARON			O								
MELALBA			O								
GRONUEIR			O								
POSTRM		R									

POLYGON SURVEYOR(S):	SITE:	POLYGON:	
	UTMZ:	UTME:	UTMN:
	UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> KOCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LND <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> BCG <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BCG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> OTHER <input type="checkbox"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DEADFALL/LOGS	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 Transitory	POLYGON: MAS2-15	DATE: AUG 11 19
	SURVEYOR(S): NMF		

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
TP PLATE				4							
TP PRNGU				4							
PL ADRIUM				4							
LT SPALI				4							

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
	UTMN:	

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input checked="" type="checkbox"/> RIVERINE <input type="checkbox"/> ROTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL <input type="checkbox"/> TREED	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> SWAMP <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> LICHEN <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> FEN <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST	<input type="checkbox"/> HERBGRROW <input type="checkbox"/> PLANTATION
SITE <input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		COVER <input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		COMM. TYPE <input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX	OTHER	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	TP PRNGU >> PLADRIUM

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS	DEADFALL/LOGS
< 10cm	< 10cm	< 10cm
10-24cm	10-24cm	10-24cm
25-50cm	25-50cm	25-50cm
> 50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



SITE: 407 Transition  
 POLYGON: MDS2-11  
 DATE: Aug 31 19  
 SURVEYOR(S): NWF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SPRINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
THPDRG													
TPDUST													
PADBRN													
PKRAJST													
SADSC													
SALDRD													
COR SP													
SCR SP													
LHTSLL													
FRDPENS													

SITE: \_\_\_\_\_  
 POLYGON SURVEYOR(S): \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 UTMZ: \_\_\_\_\_ UTM: \_\_\_\_\_ UTMN: \_\_\_\_\_

- east of Bitterman

**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input checked="" type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BAREM <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

OPEN  
 SHRUB  
 TREED

INCLUSTON  
 COMPLEX

HEDGEROW  
 PLANTATION

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	3	1	SCR SP
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4.5	5	TPSP >> PRAJUS

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = 10-25% 3 = 25-35% 4 = 35-40% 5 = > 40%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

**COMMUNITY MATURITY:**  
 PIONEER  YOUNG  MIDGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST	SITE: 407 Trans Highway
	POLYGON: MAM 2-2j
	DATE: AUG 7, 19
	SURVEYOR(S): NJH

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
DLDRUN														
DRABUST														
LTSCALI														
NERUBST														
SCIRMACU														
CDRSTIP														
SILEXIG														
RAACATI														
EDAPENS														
SOLCANVA														
BROWNER														
SALDIS														
SALSP														
NI TRIPD														
TYPI SP														

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> RIGAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE			COVER	COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGRW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	DLDRUN >> DRABUST

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2d-2m

PLANT SPECIES LIST	SITE: 403 Transvaal	1H
	POLYGON: MAM2-2K	
	DATE: AUG 24/19	
	SURVEYOR(S): NM=	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
DEADWOOD														
INDIGLE														
EROPENUS														
RUDARTA														
UUMNER														
SBLALBA														
SOLCANVA														
TRIPANGU														

POLYGON SURVEYOR(S):	SITE: UTMZ: UTM: UTMN:	POLYGON: DATE: UTMN:
----------------------	------------------------	----------------------

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CANYE <input type="checkbox"/> ALVAR <input type="checkbox"/> KOCOLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONTIGUOUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BCG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE			COVER	COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREAED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERDGRW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2		SBLALBA > UUMNER
3 SUB-CANOPY			
4 UNDERSTORY	4		EROPENUS
5 GROUND LAYER	5		TRIPANGU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	R				
DECAVED					

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2d-bar

POLYGNON: MA 52-1/SWT  
 DATE: Aug 7/19  
 SURVEYOR(S): JHM

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
SALDISC			R										
SALXIG			O										
FRARUN			O										
FRARUN			R										
SALSP			R										
LITSA LI			R										
TUPLATI			A										
TUPANGU			O										

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

POLYGNON: MA 52-1/SWT  
 DATE: Aug 7/19  
 SURVEYOR(S): JHM

POLYGNON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DELICIOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BAREEN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

COVER:  OPEN  SHRUB  TREE

COMM. TYPE:  INCLUSION  COMPLEX

OTHER:  HERBROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	SAL SP
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	3H	3	SALXIG > FRARUN
5 GROUND LAYER	H/S	5	TYOSP > PHADRUN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH





PLANT SPECIES LIST

SITE: 402 Transition 15

POLYGON: N

DATE: AUG 21/9

SURVEYOR(S): JMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
FRAXINR	R	R	R											
DCENEGUN	R	O	O	R										
QUERICOL	R													
PIUSTRO	O													
PERMINU														
DEGCARO														
SOLICAMA														
PIGDIRES	O													
PIGGIAYC	O													
RUDICATH														
EUDODON														
MBL3P														
ACESDCC	O													
POPELIT	R													
RUDICATH														
DIPSYEU														
QUERHDCR	O													
VITRIPA														
ELULHMT														
VITRIBD														
POPREM	O	O												
ACESDPA	O													

POLYGON SURVEYOR(S):

SITE: UTMZ: UTMN: UTMN: UTMN:

UTME: UTMN: UTMN: UTMN:

DATE: UTMN: UTMN: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECELILOUS <input type="checkbox"/> MEXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW <input type="checkbox"/> OTHER

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES		DEADFALL/LOGS
	FRM	DECAYED	
< 10cm	< 10cm	< 10cm	< 10cm
10-24cm	10-24cm	10-24cm	10-24cm
25-50cm	25-50cm	25-50cm	25-50cm
> 50cm	> 50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2d-0m

\* Partially covered stream ponds

PLANT SPECIES LIST

SITE: 402 Transitory

POLYGON: CUM1-1a

DATE: Aug 7/19

SURVEYOR(S): NHP

M/15

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
ARCHIDU				R		MICRAC				A	
PLULARUN				A		DAUCARO				O	
CONARVC			O	O		SUWIRG			R		
VTRVPA			O	O		RUTVRA			O		
POA PIST				A		BROWER				A	
RESRUBR				O		RUMGRLS				R	
SOUARVE				A		HEVARVE				R	
PROFEI				O		CUPPLANT?				R	
SOLCND				O		SCALALPA				O	
ASPCOMH				R		ACESACC				R	
CRDTSP				R		ACEPURT				R	
PLDMISO				O		AESHIPP				R	
PLDANC				O		LAUOCCI				R	
LOTCORD				O		LYTSALI				R	
SODJIC				R		CRVUG				R	
CIBARVE				O		LONTATA				R	
MECURA				O		PURUST				O/A	
ANELSP				R		ACTABSI				O	
ACESASA				R		AMBAETE				O	
PICGLDU				R		CEVANGU				R	
PARAUST				O							
UMOMER				R							
RURATA				O							
TRVCCI				R							
FRAPENS				O							
ACEDEGU				R							
BSCSURI				O							

POLYGON SURVEYOR(S):

SITE: UTMZ: UTMN:

UTME: UTMN:

DATE: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CORR. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CANYE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIJDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOC <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGEROW <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT		3	SAVUBRA > ACESACC
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	1	RADCATN > CRDTSP
5 GROUND LAYER	5-7	5	SOUARVE < PPARUN = VICRAC > DAUCARO

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES		STANDING SNAGS	DEADFALL/LOGS
	FRM	DECAYED		
< 10cm	R	< 10cm	R	< 10cm
10-24cm		10-24cm		10-24cm
25-50cm		25-50cm		25-50cm
> 50cm		> 50cm		> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST

SITE: 407 *Trans Hudson*

POLYGON: *CUMIG*

DATE: *Aug 31/9*

SURVEYOR(S): *NHT*

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER

VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
ACEBUECU														
SALALBA														
HARENS														
POPTREH														
POPDELT														
NTRIPA														
RANGTFL														
BROUSER														
QUEDENU														
QUETHOCR														
POE SACC														
PICGLAU														

POLYGON DESCRIPTION:

SITE: \_\_\_\_\_

POLYGON: \_\_\_\_\_

SURVEYOR(S): \_\_\_\_\_

DATE: \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

UTMN: \_\_\_\_\_

*medium polygon*

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> ORCHIDACEOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BCG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		CONM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	2	POPTREH = SALALBA
3 SUB-CANOPY	3	1	POE SACC > POPTREH
4 UNDERSTORY	4	3	POPDELT > ACEBUECU
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m

CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER 
  YOUNG 
  MID-AGE 
  MATURE 
  OLD-GROWTH

PLANT SPECIES LIST

SITE: RHW 403 Transition 15

POLYGON: M

DATE: July 20/18

SURVEYOR(S): NHP

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				SPECIES CODE	LAYER			
	1	2	3	4		1	2	3	4
PODCOMP			A						
PURAUSTR			R						
TREREPE			O						
POAPRAT			A						
BRONNER			O	BA					
TAROFF1			O						
PODELIT	R								
CAROVAST	O								
ACEXFREE	R								
THUOCCL	O								
DICABIE	O								
PINNIGR	O								
RAOACATN		R							
ACENEGU		R	R						
LINDHOUR			R						
DUGNIGR		O	O						
LOTICORN				A					
FRADHER		O	O	O					
FRDPENS		O	O						
PICPUNG		O							
CORALBA			R						
(unregistered leaves)									
TAXUS CUSP			R						
ACENEGU		O	O						
QUEBUR		R							
POLCUSP			O	O					
SALXPEND	R								

POLYGON SURVEYOR(S):

UTMZ: \_\_\_\_\_ UTMX: \_\_\_\_\_

SITE: \_\_\_\_\_

POLYGON: \_\_\_\_\_

DATE: \_\_\_\_\_

UTMY: \_\_\_\_\_ UTMN: \_\_\_\_\_

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDULOUS <input type="checkbox"/> CONFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	
OTHER <input type="checkbox"/> HERBGEROW					

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO).
1	EMERGENT		
2	CANOPY		
3	SUB-CANOPY		
4	UNDERSTORY		
5	GROUND LAYER		

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  
  YOUNG  
  MID-AGE  
  MATURE  
  OLD-GROWTH

2E-wpp.





**PLANT SPECIES LIST**

SITE: LANE 203 TRAILS 16

POLYGON: HAN 2-21

DATE: July 2018 *Walden pond (AO)*

SURVEYOR(S): 1-1111

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
<u>PUDR</u>						<u>ACRO</u>					
<u>TPHANGU</u>						<u>MTSALI</u>					
<u>INWHELE</u>						<u>INDLATE</u>					
<u>DIRAUST</u>						<u>VERHAST</u>					
<u>LYTSALI</u>						<u>ACENEGUN</u>					
<u>SOLDUIC</u>						<u>THAL SP.</u>					
<u>SOLCANA</u>						<u>THUCCI</u>					
<u>STUPATI</u>						<u>LEANGU</u>					
<u>VERHAST</u>						<u>CARBESB</u>					
<u>CRATPEDI</u>						<u>SCRIVALI</u>					
<u>TRAPTEBS</u>						<u>VERAG</u>					
<u>ACENEGU</u>						<u>PARARUN</u>					
<u>SNERIC</u>						<u>SUMUNDU</u>					
<u>FRAUIG</u>						<u>CRASCOP</u>					
<u>CRASTID</u>											
<u>CORSERI</u>											
<u>EPILRIK</u>											

**POLYGON**

SITE: \_\_\_\_\_

SURVEYOR(S): \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

DATE: \_\_\_\_\_

UTMN: \_\_\_\_\_

**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input checked="" type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> EPHEMERALS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRairie <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

**STAND DESCRIPTION:** O A O *deciduous PARARUN = D / THAL SP.*

SPECIES IN ORDER OF DECREASING DOMINANCE  
 (> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO)

LAYER	HT	CVR
1 EMERGENT		
2 CANOPY	3	1 THUCCI > ACENEGU
3 SUB-CANOPY	3	1 THAL SP > ACENEGU
4 UNDERSTORY	4	1 THAL SP. > PARARUN > ELEANGU
5 GROUND LAYER	4	4 THALATE = SCRIVALI > LYTSALI

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

**SIZE CLASS ANALYSIS:**

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

Ze-wpn

Walden pond







PLANT SPECIES LIST	SITE: HGT Trans Hwy	16
	POLYGON: H & N	
	DATE: Aug 31/8	
SURVEYOR(S): NMP		

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
POPPLE		R											
PEARL		A	O	R									
SALALBA		R											
ULMONER		R	O										
CDROVAT			O	R									
QUERUBR		R	A	R									
RHACATN			D										
CORNIARI			D										
PRUNIG			R										
SOLCANA			R										
ACCASAS			R	R									
VITRIPA			R	R									
URAT SP			R										
ROAPRAT			O										
PROINDER			O										

POLYGON SURVEYOR(S):	SITE:	POLYGON:	
	UTMZ:	UTME:	DATE:
		UTMN:	

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAKESTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> TRICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX <input type="checkbox"/> HEDGEROW	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	EMERGENT		
2	CANOPY		
3	SUB-CANOPY		
4	UNDERSTORY		
5	GROUND LAYER		

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  
 PIONEER  YOUNG  MIDD-AGE  MATURE  OLD-GROWTH

2 d - 0m

PLANT SPECIES LIST	SITE: 407 Thompson	16
	POLYGON: MAM 2-2d	
	DATE: Aug 31/8	
	SURVEYOR(S): NMF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAMPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PLANKTON				A										
WR ABUST				O										
UTTS SALI				O										
VERLAST				O										

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> FEN <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

SITE

COVER	COMM. TYPE	OTHER
<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5-7	5	PIPARUNUS >> UTSSDL

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEAD FALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2e-upn.

PLANT SPECIES LIST

SITE: 407 Transtony

POLYGON: MA M2-2h

DATE: Aug 31/18

SURVEYOR(S): NMP

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PADAUST				A										
PADARUN				A										
TYDAN6U					6A									
LYT SDC1														
NERHAST														
SALALBA				R										
FRAPILUS				R										

POLYGON SURVEYOR(S):

SITE: UTMZ: UTMZ: UTMZ: UTMZ:

DATE: UTMN: UTMN: UTMN: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> SUBBOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

SITE

COVER:  OPEN  SHRUB  TREED

COMM. TYPE:  INCLUSTION  COMPLEX

OTHER:  HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	SALALBA
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	PADARUN > PIRAUST

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



2d. Sun:

**PLANT SPECIES LIST**

SITE: 403 Trenchway  
 POLYGON: Cuvil  
 DATE: Aug 3/18  
 SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SLB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 BRAUN BLAUQUET: + PRESENT 1 = < 15% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
FRAPENS	A	A	A										
PICPUNGE (Pns)													
PICARIE (Pns)	R												
WINDMILL	R												
PUNIGR	R												
SOLCANR			A										
LUHNER	R	R	R										
PARTINUSE		O	O	O									
ACENEGU		O	R										

**STAND CHARACTERISTICS**

SITE: \_\_\_\_\_ POLYGON: \_\_\_\_\_  
 SURVEYOR(S): \_\_\_\_\_ DATE: \_\_\_\_\_  
 UTMZ: \_\_\_\_\_ UTMX: \_\_\_\_\_ UTMN: \_\_\_\_\_

**POLYGON DESCRIPTION**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> UPLAND <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTLELAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> OPENICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACHBAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD. <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> BOG <input type="checkbox"/> FEN <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP

**STAND DESCRIPTION**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = APPROX EQUAL TO)
1 EMERGENT			
2 CANOPY	2	2	FRAPENS
3 SUB-CANOPY	3	3	FRAPENS, LUHNER
4 UNDERSTORY	4	3	FRAPENS, ACENEGU
5 GROUND LAYER	5-7	5	SOLCANR

**SIZE CLASS ANALYSIS**

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

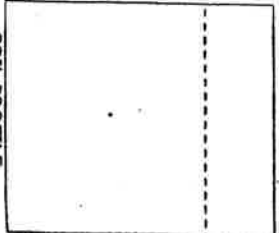
STANDING SNAGS	TREES		10-24cm		25-50cm		> 50cm	
	FIRM	DECAYED	< 10cm	> 10cm	< 25cm	> 25cm	< 50cm	> 50cm

**COMMUNITY MATURITY**

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

**SOIL ASSESSMENT**

TEXTURE	1	2	3	4
DEPTH TO MOTTLES	g =	g =	g =	g =
DEPTH TO GLEY	G =	G =	G =	G =
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				
MOISTURE REGIME				





PLANT SPECIES LIST

SITE: 403 Transitway 16

POLYGON: H

DATE: AUG 31/8

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				SPECIES CODE	LAYER			
	1	2	3	4		1	2	3	4
POPTEEM		R							
ULMAMER		R	O						
CAROVAT			O	R					
TRAPENN		O	R	R					
QUERUBR			R	R					
RHACSTH			D						
COGADR1				A					
PRUNIRG			R						
SOLCANVA				R					
ACESASA			R	R					
QUENADR			R						
VITRIPA			R	R					
CRAT SP.			R						
PHYODUL			R						

- mean to pipeline factory

POLYGON DESCRIPTION:

SITE: \_\_\_\_\_

POLYGON(S): \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

DATE: \_\_\_\_\_

UTMN: \_\_\_\_\_

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYCE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> STREAM <input type="checkbox"/> FERN <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

SITE

COVER

OPEN  
 SHRUB  
 TREED

COMM. TYPE

INCLUSTON  
 COMPLEX

OTHER

HEDGEROW  
 PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS	DEADFALL/LOGS
< 10cm	< 10cm	< 10cm
10-24cm	10-24cm	10-24cm
25-50cm	25-50cm	25-50cm
> 50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

29-8m



PLANT SPECIES LIST

SITE: 407 *Torresella* 15/16

POLYGON: CUMI-1a

DATE: Aug 3/18

SURVEYOR(S): NIKF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
DIPSYDI					hA	ULMUS					
CARDUE						SALICUBA					
DRACRO						LACISERI					
CICUTU						VERTHAP					
SQUARVE						MAOTECU					
ROUGUGUO						ANADARVE					
LITSPU						DOACOHHP					
DURAUST						BOABRAT					
THELBERA						ACDSBCC					
COUZCAND						LOTORIN					
COLCANDA											
LINUUG											
ELYREPE											
EROLIDER											
FRAPENS											
SUNLANC											
SHIVONAS											
TANUS											
ULUDAMI											
RUDCATTU											
COENARI											
PICRANUS											
ROBSEU											
BLONBER											
DEBARUV											
DAUSPIC											
TAVGCI											

POLYGON SURVEYOR(S):

SITE: UTMZ: UTMZ: UTMZ: UTMZ:

POLYGON: DATE: UTMN: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TIBETLAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECAIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

SITE

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

COVER

OPEN  
 SHRUB  
 TREED

COMM. TYPE

INCLUSION  
 COMPLEX

OTHER

HERDGRW  
 PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	ROBSEU
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

LOTORIN = ELYREPE > DIPSYDI

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2d-2um/2e-upn.



PLANT SPECIES LIST  
 SITE: Hwy 407 - Transition  
 POLYGON: SW D2-2b  
 DATE: Aug 3/18  
 SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
FRADENS	D	A	O	O										
-most of the dead trees are														
dead on ground														
RADCASTA														
ACENEGUN		R	O	O										
PHODRUM														
CAREX SP.														

POLYGON SURVEYOR(S):  
 SITE:  
 DATE:  
 UTMZ:  
 UTM:

- community in transition

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAKE/STREAM <input checked="" type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> PTERIDIUMS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input checked="" type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

SITE  
 OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

COVER  
 OPEN  
 SHRUB  
 TREEED

COMM. TYPE  
 INCLUSION  
 COMPLEX

OTHER  
 HERDGRROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	4	FRADENS
3 SUB-CANOPY	3	3	ACNEGU
4 UNDERSTORY	3-4	2	ACENEGU & RADCASTA
5 GROUND LAYER	5-7	4	PHODRUM

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE  
 COMMUNITY MATURITY:  
 PIONEER  YOUNG  MIDD-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST

SITE: NMM 403 Transitionary

POLYGON: MASZ-11

DATE: July 20/2018

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 BRAUN BLANQUET: + PRESENT 1 = < 15% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PKAUST				A										
TPANGU				A										
DIPSYE				O										
PAABUN				O										
SCIVALI				R										
ANGATKO				O										

STAND CHARACTERISTICS

SITE: \_\_\_\_\_

POLYGON: \_\_\_\_\_

SURVEYOR(S): \_\_\_\_\_

DATE: \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

UTMN: \_\_\_\_\_

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> OPEN/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD. <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

STAND DESCRIPTION

LAYER: 1 EMERGENT, 2 CANOPY, 3 SUB-CANOPY, 4 UNDERSTORY, 5 GROUND LAYER

HT: \_\_\_\_\_

CVR: \_\_\_\_\_

SPECIES IN ORDER OF DECREASING DOMINANCE: PKAUST > TPANGU

SIZE CLASS ANALYSIS

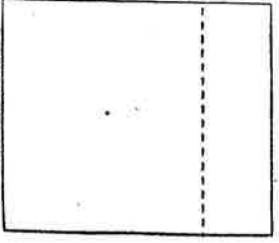
TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

COMMUNITY MATURITY

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

SOIL ASSESSMENT

TEXTURE	1	2	3	4
DEPTH TO MOTTLES	g =	g =	g =	g =
DEPTH TO GLEY	g =	g =	g =	g =
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				
MOISTURE REGIME				



2e-upn



POLYGON	SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:	UTMN:

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
PODCOMP				A									
POPPR AT													
POP DELT													
CAROVAT													
ACEKFRFE													
TAUOCCI													
PICPBIES				R									
PINUIGR				R									
ACENEGUN				R									
RHACSTH				R									
LONTATA				R									

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACISTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTONLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> MEADOW <input type="checkbox"/> BARREN <input type="checkbox"/> REARIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREE	<input type="checkbox"/> INCLUSTON <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGRW <input type="checkbox"/> OTHER

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> WHICH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = > 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DECAVED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2e - upper



PLANT SPECIES LIST

SITE: 407 Transhtway

POLYGON: HAS2-1a

DATE: July 20, 2018

SURVEYOR(S): NML

17

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
TYRANGU				D										
YTSALI				O										
SOVARVE				R										
SOLDALC				R										
SHIANDC				O										
PAARARUN				O										
PARAVST.				O										
CARVULI				O										
POAPALV				O										
VERHAST				R										

STAND CHARACTERISTICS

SITE: \_\_\_\_\_

POLYGON: \_\_\_\_\_

SURVEYOR(S): \_\_\_\_\_

DATE: \_\_\_\_\_

UTMZ: \_\_\_\_\_

UTME: \_\_\_\_\_

UTMN: \_\_\_\_\_

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAKESTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALLUVIAL <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD. <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> BOG <input type="checkbox"/> CONTIGUOUS	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

OPEN WATER  
 SCYTHALOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

STAND DESCRIPTION

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = APPROX EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4-5	5	TYRANGU >> PAARARUN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS

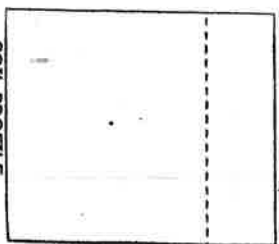
	TREES	STANDING SNAGS	DEADFALL/LOGS
< 10cm			
10-24cm			
25-50cm			
> 50cm			

COMMUNITY MATURITY

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

SOIL ASSESSMENT

TEXTURE	1	2	3	4
DEPTH TO MOTTLES	g =	g =	g =	g =
DEPTH TO GLEY	g =	g =	g =	g =
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				
MOISTURE REGIME				



PLANT SPECIES LIST	SITE: Hwy 403 Transisthary	FILE
	POLYGON: CUMI-1a	
	DATE: July 20, 2018	
SURVEYOR(S): NIMF		

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
CECINTY						POACOMP					
LOTGORU					h/A	BROWDER				A	
TAROFF1						MATPERF					
DECMINDU						LOLPERE					
CONV ARVE						FESARBU				h/A	
SOCIANA						PLPETI					
TRIREPE						MIRIPA					
CIRDRVE					A	CINWILG					
MELDUBA					R	RUNCIS				R	
PLDMSTO						RUIDAE				R	
CARDEN					R	FRANER				R	
TRIPRST						VICCRAC					
TRIHYBR						PARUSER				O/R	
ERI ANUY						CIRVULG				P	
PLDUBUC						SOLCANA					
PLDARUN					A	SYTLATE				A	
MEDSAT1					A	CORVARI				O	
SIMULAT2					O	SOLIDUL				R	
LACSERK						HYPPERF				R	
DEPUNG(COLORD)						DPSYFU				R	
ELEANG						SUMNOMU				O	
RADCATL						SALFRAG				R	
SOLIDULC						CRAUNUC				R	
TAUCAPRO						MDL PUMI				R	
PAEDU-ST					A	ACESAC				R	
POADRAT					A	RHETYPA				O	
SYRADTTE											

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
UTMZ:	UTME:	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input checked="" type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK				
COVER	<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED				
COMM. TYPE	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX				
OTHER	<input type="checkbox"/> HERB-GROW				

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> WHICH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			LOTGORU = FESARBU - MEDSAT1 = SYTLATE

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

	TREES	STANDING SNAGS	DEADFALL/LOGS
< 10cm			
10-24cm			
25-50cm			
> 50cm			
< 10cm			
10-24cm			
25-50cm			
> 50cm			

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



POLYGON		SITE:		POLYGON:	
SURVEYOR(S):		DATE:		UTM:	
UTM2:		UTM1:		UTM3:	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PADDREUN				D										
PARAUST				O										
LYTSALI				O										
TYPANGU				O										
SOLCANA				O										
SOLALBA				R										
IMUHELL				R										

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL	<input type="checkbox"/> ORGANIC	<input type="checkbox"/> LACIESTRINE	<input type="checkbox"/> NATURAL	<input type="checkbox"/> PLANKTON	<input type="checkbox"/> LAKE
<input type="checkbox"/> WETLAND	<input type="checkbox"/> MINERAL SOIL	<input type="checkbox"/> RIVERINE	<input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> SUBMERGED	<input type="checkbox"/> POND
<input type="checkbox"/> AQUATIC	<input type="checkbox"/> PARENT MATERIAL	<input type="checkbox"/> BOTTOMLAND	<input type="checkbox"/> TERRACE	<input type="checkbox"/> FLOATING LVD	<input type="checkbox"/> RIVER
	<input type="checkbox"/> ACIDIC BEDROCK	<input type="checkbox"/> VALLEY SLOPE	<input type="checkbox"/> TABLELAND	<input checked="" type="checkbox"/> GRAMINOID	<input type="checkbox"/> STREAM
	<input type="checkbox"/> BASIC BEDROCK	<input type="checkbox"/> ROLLING UPLAND	<input type="checkbox"/> CLIFF	<input type="checkbox"/> FORES	<input checked="" type="checkbox"/> MARSH
	<input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> TALUS	<input type="checkbox"/> CREVICE/CAVE	<input type="checkbox"/> BRYOPHYTE	<input type="checkbox"/> SWAMP
		<input type="checkbox"/> ALVAR	<input type="checkbox"/> ROCKLAND	<input type="checkbox"/> DECIDUOUS	<input type="checkbox"/> FEN
		<input type="checkbox"/> BEACH/BAR	<input type="checkbox"/> SAND DUNE	<input type="checkbox"/> CONFEROUS	<input type="checkbox"/> BOG
		<input type="checkbox"/> BLUFF		<input type="checkbox"/> MIXED	<input type="checkbox"/> BARREN
<b>SITE</b>					<input type="checkbox"/> MEADOW
<input type="checkbox"/> OPEN WATER					<input type="checkbox"/> PRAIRIE
<input type="checkbox"/> SHALLOW WAT.					<input type="checkbox"/> THICKET
<input type="checkbox"/> SURFICIAL DEP.					<input type="checkbox"/> SAVANNAH
<input type="checkbox"/> BEDROCK					<input type="checkbox"/> WOODLAND
					<input type="checkbox"/> FOREST
					<input type="checkbox"/> PLANTATION
					<input type="checkbox"/> OTHER
					<input type="checkbox"/> HERBGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5-7	5	PADDREUN -> LYTSALI

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	> 50cm
	DECAYED	< 10cm	10-24cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2e-upn.



**PLANT SPECIES LIST**

SITE: 407 Transhighway 18

POLYGON: Hedgerows

DATE: July 20/18

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 BRAUN BLANQUET: + PRESENT 1 = < 1-5% 2 = 5-25% 3 = 25-50% 4 = 50-75% 5 = 75-100%

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.	
	1	2	3	4			1	2	3	4		
CARONAT	A											
DAUCARO												
LINVULG												
SYPLASTI												
DIRSIEU												
SOLCANA												
BROINER												
RADICATA												
CRAT SP												
ARCHINU												
PHADRUU												
POD PRAT												

**STAND CHARACTERISTICS**

SITE: \_\_\_\_\_

POLYGON: \_\_\_\_\_

SURVEYOR(S): \_\_\_\_\_

DATE: \_\_\_\_\_

UTM2: \_\_\_\_\_

UTM1: \_\_\_\_\_

UTM3: \_\_\_\_\_

UTM4: \_\_\_\_\_

**POLYGON DESCRIPTION**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CANYON/CRAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD. <input type="checkbox"/> GRASSHOLM <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> SWAMP <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> FEEN <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> BARKEN <input type="checkbox"/> BARREN <input type="checkbox"/> HEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEEN <input type="checkbox"/> BARKEN <input type="checkbox"/> BARREN <input type="checkbox"/> HEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

**STAND DESCRIPTION**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> HIGHER GREATER THAN GREATER THAN = APPROX. EQUAL TO)
1	EMERGENT		
2	CANOPY		
3	SUB-CANOPY		
4	UNDERSTORY		
5	GROUND LAYER		

HT CODES: 1 = > 25m 2 = 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = 10-25% 3 = 25-35% 4 = 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEAD/FALL/LOGS	FIRM	< 10cm	10-24cm	> 50cm
	DECAYED	< 10cm	10-24cm	25-50cm

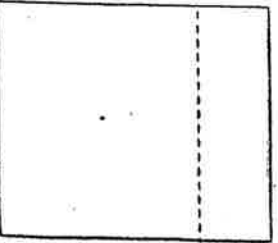
**COMMUNITY MATURITY**

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

**SOIL ASSESSMENT**

TEXTURE	1	2	3	4
DEPTH TO MOTTLING	g =	g =	g =	g =
DEPTH TO GLEY	G =	G =	G =	G =
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				
MOISTURE REGIME				

SOIL PROFILE



2e-20m

SITE: 407 T homestead  
 POLYGON: CUM-10  
 DATE: AUG 7 19  
 SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SPRINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
SAL SP		R				ACEPLAT		O			
ELEANGU		RR				AGSASA		O			
POPDEL		R				ACNEGUA		RR			
RUACOTA						RUNCATI		R			
LOTOKRU						HRCMINU		O			
DAUCARO						PICEMIE		O			
HELALBA						PICPIUD		O			
PADARUN						ROPSUND		R			
SOLEXIG		O				PARINSE		O			
WUDMER		RR				SOLASDE		R			
SOLABVE						SONOLER		R			
TAROFEL											
SOLCANA											
SANUDAN											
SMILATE											
ERICANA											
POACOND											
DROCANU											
PROUER											
ERIANNU		R									
ARTABSI											
NICERAC											
ARTABTE											
CIPARVE											
DIPYFEN											
RUMCRIS											
PARAUST											

SITE: \_\_\_\_\_ POLYGON: \_\_\_\_\_  
 SURVEYOR(S): \_\_\_\_\_ DATE: \_\_\_\_\_  
 UTMZ: \_\_\_\_\_ UTM: \_\_\_\_\_ UTMN: \_\_\_\_\_

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY			
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input checked="" type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRairie <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION			
SITE	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		COVER	<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	COMM. TYPE	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	OTHER	<input type="checkbox"/> HERGROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	POPDELT = ACNEGUA
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5-7	5	HELALBA = SOLCANA = POAS?

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	12	2		
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
	DECAYED	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE  
 COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 Transway	POLYGON: MAT 2-29	DATE: AUG 7/19	SURVEYOR(S): NMF
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LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
PLADRU				D									
TPANGLU				G									
POA PRAT				O									
SORPILR				R									
DRGLON				R									
VICCRAC				R									
ERIPANNU				R									
CIRARVE				G									
ACEXREF				R									
ULMATER				R									
ACE SACA				R									

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> FEN <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BARE <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	<input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGEROW <input type="checkbox"/> OTHER

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	H/S	5	PLADRU > TPANGLU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS	DEADFALL/LOGS	ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE
< 10cm	< 10cm	< 10cm	
10-24cm	10-24cm	10-24cm	
25-50cm	25-50cm	25-50cm	
> 50cm	> 50cm	> 50cm	

COMMUNITY MATURITY:

PIONEER  
  YOUNG  
  MID-AGE  
  MATURE  
  OLD-GROWTH

PLANT SPECIES LIST	SITE: 402 Transitionary
	POLYGON: MASA-1a V
	DATE: Aug 7/19
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PARAUST														
TYPLATI														
TYPAUGU														
VERINAST														
PARARU														
LTSOLI														
ULMOTER	R													

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTONI <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BAREEN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRARIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE			COVER	COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> > MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4-5	5	PARAUST >> TYPAUSP

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES			
	< 10cm	10-24cm	25-50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

**PLANT SPECIES LIST**  
 SITE: 403 Trans-Huron (Map 19)  
 POLYGON: MAS2-1K (Grand SP) MAS2-1K  
 DATE: Aug 8/19  
 SURVEYOR(S): JMC

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.									
	1	2	3	4			1	2	3	4										
TPANGLU				D																
CORACE				R																
PHABRUI				R																
PARAUST				R																

SITE: \_\_\_\_\_ POLYGON: \_\_\_\_\_  
 SURVEYOR(S): \_\_\_\_\_ DATE: \_\_\_\_\_  
 UTMZ: \_\_\_\_\_ UTM E: \_\_\_\_\_ UTM N: \_\_\_\_\_

**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALYAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGEROW <input type="checkbox"/> OTHER

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	TPANGLU > PHABRUI

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-50% 4 = > 50-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE  
 COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

**PLANT SPECIES LIST**

SITE: 407 Transfuey

POLYGON: SW D2-2C

DATE: Aug 9/19

SURVEYOR(S): NMC

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				SPECIES CODE	LAYER			
	1	2	3	4		1	2	3	4
FRPENS	A	R	O						
ACNEGU	R	O	O						
DIPSHU				R					
PLANDUN				A					
VTRIPA		O	O						
SNLDRD		R							
POPREM		R							
LOOSTA		O							
RUDCAF		R							
CORRACE		O							
CORSERI		R							
PUGPUST			O						
PACTINSE		O	O						
SDLSP		R	R						
PESACC		R							

**POLYGON SURVEYOR(S):**

SITE: UTMZ: UTM: UTMN:

DATE: UTM:

\* access?  
 \* viewed only from fence line  
 - vegetation

**POLYGON DESCRIPTION:**

**SYSTEM**  
 TERRESTRIAL  
 WETLAND  
 AQUATIC

**SUBSTRATE**  
 ORGANIC  
 MINERAL SOIL  
 PARENT MATERIAL  
 ACIDIC BEDROCK  
 BASIC BEDROCK  
 CORR. BEDROCK

**TOPO. FEATURE**  
 LACUSTRINE  
 RIVERINE  
 BOTTOMLAND  
 TERRACE  
 VALLEY SLOPE  
 TABLELAND  
 ROLLING UPLAND  
 CLIFF  
 TALUS  
 CREVICE/CAVE  
 ALVAR  
 ROCKLAND  
 BEACH/BAR  
 SAND DUNE  
 BLUFF

**HISTORY**  
 NATURAL  
 CULTURAL

**PLANT FORM**  
 PLANKTON  
 SUBMERGED  
 FLOATING LVD  
 GRAMINOID  
 FORB  
 LICHEN  
 BRYOPHYTE  
 DECIDUOUS  
 CONIFEROUS  
 MIXED

**COMMUNITY**  
 LAKE  
 POND  
 RIVER  
 STREAM  
 MARSH  
 SWAMP  
 FEN  
 BOG  
 BARREN  
 MEADOW  
 PRAIRIE  
 THicket  
 SAVANNAH  
 WOODLAND  
 FOREST  
 PLANTATION

**COVER**  
 OPEN  
 SHRUB  
 TREED

**COMM. TYPE**  
 INCLUSION  
 COMPLEX

**OTHER**  
 HEDGEROW

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	3	4	FRPENS >> ACNEGU
3 SUB-CANOPY	3	3	FRPENS & ACNEGU
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	R	A	O	/
DEADFALL/LOGS	FIRM	10-24cm	25-50cm	> 50cm
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm

**COMMUNITY MATURITY:**

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

Ze-8um

POLYGON: HAS 2-1  
 DATE: July 20/18  
 SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PANARQUU				A										
SALALBA	R													
RHACOTU			O											
TPDNGU				A										
RUBDIRT				R										
ALPLAQ				R										
SUIKDG	R	R	R											
POTNSTA				R										
PODDALU				R										
NMHODOR				R										
AGG61GA				R										
RODPRAT				O										

POLYGON: HAS 2-1  
 DATE: July 20/18  
 SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORE <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

COVER:  OPEN  SHRUB  TREE

COMPL. TYPE:  INCLUSION  COMPLEX

OTHER:  HERBGEROW  PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT		3	1 SALSP
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	TPDNGU > PANARQUU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST  
 SITE: 403 Transistuary 19  
 POLYGON: H  
 DATE: AUG 8/19  
 SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
PODCOMP				A									
DIG SAN G													
LOTORU													
TDR OF E1													
TRIAEDE													
CEL DCCI													
ACESD/C													
BCE SDS A													
QUE R UBR													
ROB R SEU													
TILCORD													
QUEM/R													

POLYGON SURVEYOR(S):  
 SITE: UTMZ: UTMN: UTMN:  
 DATE: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREE		COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX OTHER <input type="checkbox"/> HEDGEROW	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES				
	FIRM	DECAYED	< 10cm	10-24cm	> 24cm
	< 10cm	< 10cm	10-24cm	10-24cm	> 24cm
	< 10cm	< 10cm	10-24cm	10-24cm	> 24cm
	< 10cm	< 10cm	10-24cm	10-24cm	> 24cm
	< 10cm	< 10cm	10-24cm	10-24cm	> 24cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH





PLANT SPECIES LIST

SITE: 401 *Transitional*

POLYGON: *MAN2-2b*

DATE: *Aug 8/19*

SURVEYOR(S): *NMP*

19

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
<i>PUDRNU</i>				D									
<i>CORRACE</i>													
<i>PRSSAT1</i>				R									

POLYGON SURVEYOR(S):

UTMZ: \_\_\_\_\_ UTM E: \_\_\_\_\_

UTMN: \_\_\_\_\_

SITE: \_\_\_\_\_

POLYGON: \_\_\_\_\_

DATE: \_\_\_\_\_

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAKE/STRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYCE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		COMM. TYPE <input type="checkbox"/> INCLUSTON <input type="checkbox"/> COMPLEX	OTHER <input type="checkbox"/> HERDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	<i>4</i>	<i>1</i>	<i>CORRACE</i>
5 GROUND LAYER	<i>5</i>	<i>5</i>	<i>PUDRNU &gt;&gt;&gt; SATPAST</i>

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS			DEADFALL/LOGS		
	< 10cm	10-24cm	> 24cm	FIRM	DECAYED	> 50cm
	< 10cm	10-24cm	> 24cm	< 10cm	10-24cm	> 50cm
	< 10cm	10-24cm	> 24cm	< 10cm	10-24cm	> 50cm
	< 10cm	10-24cm	> 24cm	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST

SITE: 407 Trinchoboy 19

POLYGON: CUM-1

DATE: Aug 8/19

SURVEYOR(S): VME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
LINDULG						SOVARVE					
LYPRERF						PLAUDG					
PAUCARIC						PRAPEN	R	R			
MELALRD						LOUTATA					
CCINTY						CRHODO					
SOLCADA						SALDISC					
SMNOAN						CORSERI					
LOTORNU						PRUSERO					
DENEGU	R	O	R	R		CIRVULG					
DEPLAT						DCESASA					
ELEDNGU						SALV SP					
DICGLDY						MICCRAC					
PICABIE						PORTREH	R	R			
POPRAT						ANGATRO.					
PROUDER						DIBSYFU					
RHACATU						PICPUNG					
EUTGRNU						ALCSACC					
NICCRDC						ROBPSGUD					
SAPILATE						SOVASPE					
CIRARVE											
DCSYRI											
VITRIP											
PADARUD											
RHACSTN											
SPLEKIG											
CRAPEDI											
ULVONER											

POLYGON SURVEYOR(S):

SITE: LTMZ: LTMN: LTMN:

DATE: LTMN: LTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> TALUS <input type="checkbox"/> GREY/ICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDIOUS <input checked="" type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		OTHER	
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX <input type="checkbox"/> HEDGEROW	

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	PORTREH = ACERPLAT
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5-7	5	MELALRD = LOTCORNU = DAPRAT = PROUDER

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH





PLANT SPECIES LIST

POLYGON: CUMIS

DATE: Aug 8 19

SURVEYOR(S): NMF

SITE: 4022 Transitory

26

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
ACESASA	0	0	0										
ACNEGUND	R	O	O										
QUERUR	O	O											
FRAPPENS		R	O										
RIACCATU			A	O									
SUGNIGR	R	R	R										
TILAMER	R	O	R										
LOW TATA			R										
CICUTE				O									
RAUTYPL				O									
PIN SP.				R									
PIC SP.				O									

POLYGON SURVEYOR(S):

UTMZ:

UTME:

UTMN:

SITE:

POLYGON:

DATE:

- access only from north side

POLYGON DESCRIPTION:

<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input checked="" type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LND <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> COMM. TYPE <input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> OTHER <input type="checkbox"/> HERDGRW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT		3	QUEQUER
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS				
DEADFALL/LOGS				

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST

SITE: 407 *Transect* 20

POLYGON: CUWH

DATE: Aug 8/19

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
ACENEGU		A												
PODELT	R													
PLABRU			A											
VITRIPA			A	O										
DIRSYEU			O											
RUDATA			A											
SAABUA			R											
SALSP			O											
MORALBA			R											
CODSER			R											
UWDMER			R											
TUGNIGL			O	R										
ACESSASA			R											

POLYGON: SURVEYOR(S):

DATE:

UTMZ: UTMZ: UTMZ: UTMZ:

UTME: UTMZ: UTMZ: UTMZ:

UTMN: UTMZ: UTMZ: UTMZ:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> ESTUARIAN <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYCE/CANE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> REDDEDIOUS <input type="checkbox"/> CONFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> SWOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	2	1	PODELT = UWDMER
2 CANOPY	2-3	3	ACENEGU → SALSP → DIRSYEU → ACESSASA
3 SUB-CANOPY	2	4	ACENEGU → VITRIPA
4 UNDERSTORY	4	3	RUDATA → VITRIPA
5 GROUND LAYER	5	4	PLABRU → DIRSYEU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES		
	< 10cm	10-24cm	25-50cm
FIRM	< 10cm	10-24cm	25-50cm
DECAVED	< 10cm	10-24cm	25-50cm
DEADFALL/LOGS	< 10cm	10-24cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST

SITE: 402 Translucency 20

POLYGON: CUTLICK

DATE: NTF

SURVEYOR(S): JULY 13/2015

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
ELEANGU			R										
RUDCART			A										
RODIER			A										
RADLARUN			O										
VTRIPA			O										
FRADENUN			R										
RODRAT			O										
ELUREPE			O										
DUCCARO			O										
CORSTOL			R										
LOUTATA			O										

POLYGON SURVEYOR(S):

SITE: UTMZ: UTM: UTMN:

DATE: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CORR. BEDROCK	<input type="checkbox"/> LAQUESTRINE <input type="checkbox"/> RIVERINE <input checked="" type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYVE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SWANNAN <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

COVER:  OPEN  SHRUB  TREED

COMM. TYPE:  INCLUSTION  COMPLEX

OTHER:  HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	3	RUDCART >> LOVTATA
5 GROUND LAYER	5-7	5	RODIER >> CIRARVE

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

2F - upper

**PLANT SPECIES LIST**

SITE: 202 Thompson  
 POLYGON: MA 52b/MANZb  
 DATE: Aug 8/19  
 SURVEYOR(S): NME

20

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLING & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				SPECIES CODE	LAYER			
	1	2	3	4		1	2	3	4
PARUSTR									
PARURUO									
SAL SP									
PARACTS									
DECEWEGUN									
LYTSDLI									
EGDPENS									
ULMAMER									

**POLYGON SURVEYORS:**

SITE: UTMZ: UTMME: UTMN:

DATE:

\* No access, view only from roadside

**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAQUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

**SITE**

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

**COVER**

OPEN  
 SHRUB  
 TREED

**COMM. TYPE**

INCLUSION  
 COMPLEX

**OTHER**

HEDGEROW  
 PLANTATION

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	SAL SP
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	PARURUO > PARUSTR

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**

STANDING SNAGS	TREES		
	< 10cm	10-24cm	25-50cm
FIRM	< 10cm	10-24cm	25-50cm
DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

**COMMUNITY MATURITY:**

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

**PLANT SPECIES LIST**

SITE: UCR - TRANS. FOREST 26

POLYGON: CUMI-10

DATE: Aug 8/19

SURVEYOR(S): DME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
<u>COYCAVA</u>			A			<u>SHUNGER</u>	R	R	O		
<u>SOLCAVA</u>			A			<u>SALNARA</u>	R				
<u>DIUGARU</u>			O			<u>DESSA</u>	O				
<u>DEARUN</u>			A			<u>MESSACC</u>	O				
<u>LOTORU</u>			O			<u>ACEPLAT</u>	R	O			
<u>LAGSAR</u>			R			<u>FRAYENS</u>	R				
<u>DEHNGU</u>			O	O		<u>RORSEU</u>	R				
<u>UTRIRA</u>			O	O							
<u>DICRUDS</u>			R								
<u>PICGLAU</u>			O	R							
<u>BOURU</u>				O							
<u>TRIPAT</u>				O							
<u>ARMAVU</u>				O							
<u>RUKRIS</u>				O							
<u>DUHYRI</u>				O							
<u>UTSAL</u>				R							
<u>LODTATA</u>				O							
<u>RUMBU</u>				R							
<u>PARAST</u>				O							
<u>SALDISC</u>				O							
<u>NICPAC</u>				A							
<u>CIRARVE</u>				A							
<u>EUTGRM</u>				O							
<u>SALSD</u>				O							
<u>PUNNIGR</u>				R							

**POLYGON DESCRIPTION:**

SITE: \_\_\_\_\_ POLYGON: \_\_\_\_\_

SURVEYOR(S): \_\_\_\_\_ DATE: \_\_\_\_\_

UTMZ: \_\_\_\_\_ UTM: \_\_\_\_\_ UTMN: \_\_\_\_\_

**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CLIFF <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARCH <input type="checkbox"/> SWAMP <input type="checkbox"/> BCG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<b>SITE</b> <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<b>COVER</b> <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<b>COMM. TYPE</b> <input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX	<b>OTHER</b> <input type="checkbox"/> HEDGEROW

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	1	1	<u>PICGLAUC</u>
2 CANOPY	2-3	2	<u>ACELVGUA &gt; PICRUDS</u>
3 SUB-CANOPY	3-4	2	<u>PUNNIGR &gt; LODTATA</u>
4 UNDERSTORY			
5 GROUND LAYER	5	5	<u>SOLCAVA = PARARUVE = CONCAVA</u>

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**

STANDING SNAGS	TREES				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
DEADFALL/LOGS	DECEAYED < 10cm	10-24cm	25-50cm	> 50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

**COMMUNITY MATURITY:**

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST	SITE: 404 Transition 20
	POLYGON: MAST-1b
	DATE: AUG 8/19
	SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
TPARKU				D										
TPLEDT				R										

POLYGON	SITE:	POLYGON:
SURVEYOR(S):	UTMZ:	UTME:
UTMZ:	UTME:	UTMN:
DATE:		
UTMN:		

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> GREYCE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> P. ANTONI <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> FEN <input type="checkbox"/> BCG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBOSW <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4	5	THOSP

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	> 50cm
	DECAYED	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  
  YOUNG  
  MID-AGE  
  MATURE  
  OLD-GROWTH

PLANT SPECIES LIST	SITE: <u>41W 402 Transitional</u>	21
	POLYGON: <u>FOD2-3b</u>	
	DATE: <u>JULY 13/18</u>	
	SURVEYOR(S): <u>NMF</u>	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
SALALBA	O					LYTSAI					
JUGLIER		R				PLAARUN					
VITRIDA		O	O			PHRAUST					
DCENEGU	O	R	O			SOLGIGA					
CORSERI			O								
SOLCANA			O								
TUNDANA			O								
QUEMACE		R									
LOTICORN			R								
XANSTREU			R								
POPTREM		R									
SOLFRAG		O	O								
RUDICATU			A								
DAUCABO			O								
FRAPEMN		R	O	O							
PLAMASO			O								
LUNTATA			R								
FRALWSE			R	R							
TILAMER		R									
VERHAST			R								
DIPSTFU			O								
TYPLDTI			O								
BRQIBER			O								
HAPPERE			R								
ARCHINDU			R								
POARPALU			O								
POACOMP			R								

POLYGON	SITE: <u>41W 402 Transitional</u>	POLYGON: <u>FOD2-3b</u>
SURVEYOR(S):	DATE: <u>JULY 13/18</u>	
UTM2Z:	UTM2E:	UTM2N:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input checked="" type="checkbox"/> BOTTLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDIOUS <input type="checkbox"/> COMPEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER	COMM. TYPE	OTHER		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK	<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGEROW		

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	4	SALIX SP > ACELWEGU
3 SUB-CANOPY	3	3	SALIX SP
4 UNDERSTORY	3-2	4	RUDICATU > FRAPEMN
5 GROUND LAYER	5-2	4	variable

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

TREES	STANDING SNAGS				
	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm
FIRM	R	R	R	R	R
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

- woody species concentrated along path edges

PLANT SPECIES LIST

SITE: 403 Transit way 21

POLYGON: SWDA-1b

DATE: July 13/2018 + Aug 8/2019

SURVEYOR(S): NME

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				SPECIES CODE	LAYER			
	1	2	3	4		1	2	3	4
SALDUBA	0								
SN.FEAG	0	0							
SAL.SP		0							
ACEVEGU		R	R						
RAACATI		0							
PHDRUN		0							
CAPOBC		R							
CAQUULI		R							
TYRASP		R							
VERBUST		R							
FRAPENS		R	R						

POLYGON SURVEYOR(S):

SITE: 403 Transit way

UTMZ: UTMZ: UTMZ: UTMZ:

UTME: UTMZ: UTMZ: UTMZ:

UTMN: UTMZ: UTMZ: UTMZ:

DATE: DATE: DATE: DATE:

- removed from edge of road - occurs contiguously

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input checked="" type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input checked="" type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

COVER:  OPEN  SHRUB  TREED

COMM. TYPE:  INCLUSION  COMPLEX

OTHER:  HERBEROV

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO.)
1 EMERGENT			
2 CANOPY	2/3	4	SP.LSP?
3 SUB-CANOPY	3	3	SP.LSP > ACEVEGU
4 UNDERSTORY	3/4	3	FRAPEN > ACEVEGU
5 GROUND LAYER			

HT CODES: 1 = > 25m 2 = >10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = <0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = >10-25% 3 = >25-35% 4 = >35-60% 5 = >60%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS				
DEADFALL/LOGS				

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST

SITE: HWY 403 Transitionway 21

POLYGON: MAM2-2m

DATE: July 13/18

SURVEYOR(S): NMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
PADARI				D										
TPDANGU				O										
PRDUST				O										
LMTSALI				O										
SOLGIA				R										
NE RHAST				R										
FRAPENI				R										

POLYGON SURVEYOR(S):

SITE: UTMZ: UTM: UTMN:

DATE: UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LAKESTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE			COVER	COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4-5	5	PRDUST >>> TPDANGU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES	DEADFALL/LOGS				
		DECAYED	FIRM	DECAYED	FIRM	DECAYED
	R	< 10cm	< 10cm	< 10cm	< 10cm	< 10cm
		10-24cm	10-24cm	10-24cm	10-24cm	10-24cm
		25-50cm	25-50cm	25-50cm	25-50cm	25-50cm
		> 50cm	> 50cm	> 50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

Hand traces are marked on impediment to water flow through the bottomland area

POLYGON: CUMH-1a  
 DATE: 5/10/18  
 SURVEYOR(S): NMF

SITE: 4444 407 Tressett Way 2/1/22

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
PARAKU						SUNNOVA							
SOLANA						LASSER							
CIRAVE						CHEALBU							
DIPSTU						MATRPERF							
RUMCRS						HYPRE RF							
GRAINER						PULPRAT							
VICROC						ERIANBU							
LOLPER						PLMISTO							
POPRRT						POPRRT							
VELDPA						PURAUT							
SONARVE						CONARVE							
TRIKRE						FRAMER							
TRIPRAT						HELOFFI							
AMPART						CRATPOL							
BE RVULG						ACESACC							
CICINTY						SALPENI							
ELADUIG						VEBTAMP							
SUMPLAT						BROH SD							
BSSSURI						SOLUIC							
COVARA						APOCANU							
ARC MINU						ACEPLAN							
LOT CORN						ROGSELA							
RHACAT 4						PICABLE							
VITRIDA						BOPTREM							
RAU THA						QUENARA							
CIRVULG						PINSTRU							
DAUCARO						TAROFFI							

- contains areas of streambank

POLYGON: CUMH-1a  
 SITE: 4444 407 Tressett Way  
 SURVEYOR(S): NMF  
 DATE: 5/10/18  
 UTMZ: 18QJG  
 UTM: 18QJG  
 UTMN: 18QJG

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> GREYCE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORS <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARCH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST	<input type="checkbox"/> HERBGEROW <input type="checkbox"/> PLANTATION
---	--	---	--	--	--	---

COVER:  OPEN  
 SHRUB  
 TREED

COMM. TYPE:  INCLUSTION  
 COMPLEX

OTHER:  HERBGEROW  
 PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	2	1	FRAMER = SALALRDL (seed) = ACESACC
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	1	RHACAT 4 = CRATPANC
5 GROUND LAYER			VELDPA = BROINER = PARAKU

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-50% 5 = > 50%

SIZE CLASS ANALYSIS:

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:  
 PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

**PLANT SPECIES LIST**

SITE: 407 Transition 22

POLYGON: CUT 1 D

DATE: July 13/18

SURVEYOR(S): JMF

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
RUDGATH			D	A									
RUBIDDU			R										
ROSMUET			O										
PARTINSE			O										
CIRLUATE			O										
VITRIPA			O										
LOUSTAIA			R										
CARPENS			O										
FRANESC			O										
ALLPETI			O										
FRAPENU			R	R									
GEUCAWA			O	PIC									
GERROSE			R										
EMDINER			O	PIC									
QUERURR			O										
PODTRER			R										
TILUMER			R										
CAROUAT			R										
QUERHAC			R	PIC									
ACEPLAT			R										
ACESASA			R										
CRANOLL			O										

2f - upper

est. id along ridge

SITE: POLYGON: SURVEYOR(S): DATE: UTMZ: UTM: UTMN:

**POLYGON DESCRIPTION:**

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> ISLAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DIVERGENT <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARCH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input checked="" type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

**SITE**

OPEN WATER  
 SHALLOW WAT.  
 SURFICIAL DEP.  
 BEDROCK

**COVER**

OPEN  
 SHRUB  
 TREED

**COMM. TYPE**

INCLUSION  
 COMPLEX

**OTHER**

HERBGEROW

**STAND DESCRIPTION:**

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT-EQUAL TO)
1 EMERGENT	2	2	QUERURR >
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	3	5	RUDGATH >>> CRATPUNG
5 GROUND LAYER	6/7	3	RUBIDDU > EUREHAC

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

**SIZE CLASS ANALYSIS:**

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM < 10cm	10-24cm	25-50cm	> 50cm
	DECAYED < 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

**COMMUNITY MATURITY:**

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: 407 Transitional	22
	POLYGON: CUTLE	
	DATE: JULY 13 2018	
	SURVEYOR(S): NMF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
RHUTPA			A										
JUGUIGR			R	R									
LONGPER			O										
PODTRH			O										
RRVIRG			R										
RHACATN			O										
POAPRAT			O										
TAROFF1			O										
SONARVE			O										
CIRAVE			O										

POLYGON SURVEYOR(S):	SITE:	POLYGON:
UTMZ:	UTME:	DATE:
		UTMN:

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORES <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECDIOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input checked="" type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORES <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input checked="" type="checkbox"/> DECDIOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input checked="" type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> WHICH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	3/4	4	RHUTPA > RHACATN
5 GROUND LAYER	S.2	3	POAPRAT > CIRAVE

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES		DEADFALL/LOGS
	FIRM	DECAYED	
< 10cm	< 10cm	< 10cm	< 10cm
10-24cm	10-24cm	10-24cm	10-24cm
25-50cm	25-50cm	25-50cm	25-50cm
> 50cm	> 50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST	SITE: 402 Transstuey	22
	POLYGON: CUNW11	
	DATE: July 13/18	
	SURVEYOR(S): NMF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
QUE RUIR	0	0	R										
TUGNIGR	0												
POPTREM		A	O										
CAROVAT	R	R	R	O									
PRUVIRG		R	R										
RAUTYAL		O											
RUACATU		A	O										
CRA MOLL		R											
VITRIPA		R	O	O									
ACEFLAT		R											
ROBPEU		R											
SPULRA		R											
LONMORR		O											
CARPENS		O											
MAIRACE		R	P	PIC									
POP COMP		R											

POLYGON	SITE:	POLYGON:
SURVEYOR(S):	UTMZ:	UTME:
	UTM:	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> DEPTONLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> TERNWOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" type="checkbox"/> TREED	<input type="checkbox"/> INCLUSTION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGEROW <input type="checkbox"/> PLANTATION

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY	2	3	QUE RUIR >> CAROVAT
3 SUB-CANOPY	3	3	POPTREM > QUE RUIR
4 UNDERSTORY	3	4	RUACATU > RUTYPI
5 GROUND LAYER	6/7	2	RUACATU > CARPEN

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES		
	< 10cm	10-24cm	> 25cm
FIRM	0	< 10cm	25-50cm
DECAYED	< 10cm	10-24cm	> 50cm
	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH



PLANT SPECIES LIST	SITE: 407 Transhway	22
	POLYGON: HASZ-11	
	DATE: July 13/18	
	SURVEYOR(S): NMF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
LTSALI					0.5A								
MYOSCOR													
TRPANGU													
TRPANGU													
TRPANGU													
PHRAUST													
PHRAUST													
SON DEVE													

POLYGON	SITE:	POLYGON:
SURVEYOR(S):	UTMWZ:	UTME:
UTMN:	UTMM:	UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALUS <input type="checkbox"/> CREVICE/CANYON <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORE <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BOG <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THicket <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE	COVER	COMM. TYPE	OTHER		
<input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SUBTICAL DEP. <input type="checkbox"/> BEDROCK	<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREE	<input type="checkbox"/> INCLUSION <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBGRW		

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> WHICH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	TRPANGU > PHRAUST

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1-2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES		DEADFALL/LOGS
	FRM	DECA	
< 10cm	< 10cm	< 10cm	< 10cm
10-24cm	10-24cm	10-24cm	10-24cm
25-50cm	25-50cm	25-50cm	25-50cm
> 50cm	> 50cm	> 50cm	> 50cm

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: <u>Hot Transfused</u>	POLYGON: <u>MDM 2-2A</u>	DATE: <u>July 18</u>
			SURVEYOR(S): <u>NMF</u>

LAYERS: 1 = CANOPY TREES > 10m, 2 = SUB-CANOPY, 3 = SAPLINGS & SHRUBS, 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT, A = ABUNDANT, O = OCCASIONAL, R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.		
	1	2	3	4			1	2	3	4			
PUDARUN				D									
VITRIPAR				O									
SALFRAG				O									
POARRAT				O									
ACENEGU				R									
UTSALI				O									
HERMAST				R									
DAUCORO				O									
RODELTA				R									
RHACATH				R									
DIPSYFU				O									
VICRAC				O									
HYDPERF				R									
SOLCANA				R									
CORUPRI				O									
VERMAST				R									
TYPDANGU				R									
LONMOWRI				R									

POLYGON	SITE: <u>MDM 2-2A</u>	POLYGON: <u>MDM 2-2A</u>
	SURVEYOR(S): <u>NMF</u>	DATE: <u>July 18</u>
	UTMZ: <u>18S 081E</u>	UTME: <u>500000</u>
		UTMN: <u>100000</u>

POLYGON DESCRIPTION:

<input checked="" type="checkbox"/> TERRESTRIAL	<input checked="" type="checkbox"/> ORGANIC	<input type="checkbox"/> LACUSTRINE	<input type="checkbox"/> NATURAL	<input type="checkbox"/> PLANT FORM	<input type="checkbox"/> COMMUNITY
<input type="checkbox"/> WETLAND	<input type="checkbox"/> MINERAL SOIL	<input type="checkbox"/> RIVERINE	<input checked="" type="checkbox"/> CULTURAL	<input type="checkbox"/> SUBMERGED	<input type="checkbox"/> LAKE
<input type="checkbox"/> AQUATIC	<input type="checkbox"/> PARENT MATERIAL	<input type="checkbox"/> BOTTOMLAND	<input type="checkbox"/> OPEN SHRUB TREED	<input type="checkbox"/> FLOATING LVD	<input type="checkbox"/> POND
	<input type="checkbox"/> ACIDIC BEDROCK	<input type="checkbox"/> TERRACE	<input type="checkbox"/> INCLINATION	<input checked="" type="checkbox"/> GRASSLAND	<input type="checkbox"/> RIVER
	<input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> VALLEY SLOPE	<input type="checkbox"/> COMPLEX	<input type="checkbox"/> FORE	<input type="checkbox"/> STREAM
		<input type="checkbox"/> TABLELAND		<input type="checkbox"/> LICHEN	<input type="checkbox"/> MARSH
		<input type="checkbox"/> ROLLING UPLAND		<input type="checkbox"/> BRYOPHYTE	<input type="checkbox"/> SWAMP
		<input type="checkbox"/> CLIFF		<input type="checkbox"/> DECIDUOUS	<input type="checkbox"/> FEN
		<input type="checkbox"/> TALUS		<input type="checkbox"/> CONIFEROUS	<input type="checkbox"/> BCG
		<input type="checkbox"/> CREVICE/CAVE		<input type="checkbox"/> BARREN	<input type="checkbox"/> MEADOW
		<input type="checkbox"/> ALVAR		<input type="checkbox"/> PRAIRIE	<input type="checkbox"/> THicket
		<input type="checkbox"/> ROCKLAND		<input type="checkbox"/> SAVANNAH	<input type="checkbox"/> WOODLAND
		<input type="checkbox"/> BEACH/BAR		<input type="checkbox"/> FOREST	<input type="checkbox"/> PLANTATION
		<input type="checkbox"/> SAND DUNE			
		<input type="checkbox"/> BLUFF			
SITE			COVER	COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER			<input type="checkbox"/> OPEN SHRUB TREED	<input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERBEROY
<input type="checkbox"/> SHALLOW WAT.					
<input type="checkbox"/> SURFICIAL DEP.					
<input type="checkbox"/> BEDROCK					

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT		2	SALFRAG
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	3/4	1	SALFRAG > LONMOWRI
5 GROUND LAYER	4/5	5	PUDARUN > DIPSYFU

HT CODES: 1 = > 25m, 2 = > 10-25m, 3 = 2-10m, 4 = 1-2m, 5 = 0.5-1m, 6 = 0.2-0.5m, 7 = < 0.2m  
 CVR CODES: 0 = NONE, 1 = 1-10%, 2 = > 10-25%, 3 = > 25-35%, 4 = > 35-60%, 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES	
	< 10cm	10-24cm
FIRM	/	/
DECAYED	/	/

ABUNDANCE CODES: A = ABUNDANT, O = OCCASIONAL, R = RARE, N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

PLANT SPECIES LIST	SITE: NWY 407 Transylvania
	POLYGON: MAS2-1m
	DATE: July 13/18
SURVEYOR(S): MPF	

LAYERS: 1 = CANOPY TREES > 10m 2 = SUB-CANOPY 3 = SAPLINGS & SHRUBS 4 = GROUND LAYER  
 VALUE CODES: D = DOMINANT A = ABUNDANT O = OCCASIONAL R = RARE

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.			
	1	2	3	4			1	2	3	4				
TPANGU				A										
PARARUN				O										
PARAUST				A										

POLYGON SURVEYOR(S):	SITE:	POLYGON:
	UTMZ:	UTME:
DATE:		

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input checked="" type="checkbox"/> WETLAND <input type="checkbox"/> AQUATIC	<input type="checkbox"/> ORGANIC <input checked="" type="checkbox"/> MINERAL SOIL <input type="checkbox"/> PARENT MATERIAL <input type="checkbox"/> ACIDIC BEDROCK <input type="checkbox"/> BASIC BEDROCK <input type="checkbox"/> CARB. BEDROCK	<input type="checkbox"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input type="checkbox"/> TERRACE <input type="checkbox"/> VALLEY SLOPE <input checked="" type="checkbox"/> TABLELAND <input type="checkbox"/> ROLLING UPLAND <input type="checkbox"/> CLIFF <input type="checkbox"/> TALLS <input type="checkbox"/> GREYCE/CAVE <input type="checkbox"/> ALVAR <input type="checkbox"/> ROCKLAND <input type="checkbox"/> BEACH/BAR <input type="checkbox"/> SAND DUNE <input type="checkbox"/> BLUFF	<input type="checkbox"/> NATURAL <input checked="" type="checkbox"/> CULTURAL <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED	<input type="checkbox"/> PLANKTON <input type="checkbox"/> SUBMERGED <input type="checkbox"/> FLOATING LVD <input checked="" type="checkbox"/> GRAMINOID <input type="checkbox"/> FORB <input type="checkbox"/> LICHEN <input type="checkbox"/> BRYOPHYTE <input type="checkbox"/> DECIDUOUS <input type="checkbox"/> CONIFEROUS <input type="checkbox"/> MIXED	<input type="checkbox"/> LAKE <input type="checkbox"/> POND <input type="checkbox"/> RIVER <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> MARSH <input type="checkbox"/> SWAMP <input type="checkbox"/> FEN <input type="checkbox"/> BCG <input type="checkbox"/> BARREN <input type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <input type="checkbox"/> FOREST <input type="checkbox"/> PLANTATION
SITE		COVER		COMM. TYPE	OTHER
<input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> SHALLOW WAT. <input type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK		<input checked="" type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input type="checkbox"/> TREED		<input type="checkbox"/> INCLUSTON <input type="checkbox"/> COMPLEX	<input type="checkbox"/> HERGROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	S	TPANGU > PARAUST

HT CODES: 1 = > 25m 2 = > 10-25m 3 = 2-10m 4 = 1.2m 5 = 0.5-1m 6 = 0.2-0.5m 7 = < 0.2m  
 CVR CODES: 0 = NONE 1 = 1-10% 2 = > 10-25% 3 = > 25-35% 4 = > 35-60% 5 = > 60%

SIZE CLASS ANALYSIS:

STANDING SNAGS	TREES		
	< 10cm	10-24cm	25-50cm
FIRM	< 10cm	10-24cm	25-50cm
DECAYED	< 10cm	10-24cm	25-50cm
	< 10cm	10-24cm	> 50cm
			> 50cm
			> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER  YOUNG  MID-AGE  MATURE  OLD-GROWTH

**APPENDIX C.  
PHOTOGRAPHIC RECORD**

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S1**



July 2019. Looking east with CUM1-1a communities north and south of 407ETR.



July 2019. Looking east at the CUM1-1a/CUT1a along the north side of 407ETR.



July 2019. Looking east at the CUM1-1a/CUT1a, north and south of the 407ETR within the right-of-way.



July 2019. Looking east at CUM1-1a along the south side of 407ETR, east of Guelph Line.



July 2019. Looking north at CUW1a located south of Dundas Street.



July 2019. Looking west along CUW1a where the community is bisected by a farm laneway. Portion of woodland remaining in the photo to the right, is very narrow.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S1**



July 2019. Looking north across agricultural fields and hedgerow that would be bisected by the runningway.



July 2019. Looking west at MAM2-2b.



August 2019. Looking west at CUM1-1a, with CUW1c in the background of photo



August 2019. Looking northeast at one of the many examples of common reed established along a ditch within the right-of-way.



August 2019. Looking west at hedgerow, west of 407ETR, associated with agricultural fields. Species include red maple and black walnut.



August 2019. Looking west at hedgerow associated with agricultural fields.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S1**



September 2019. Looking west at hedgerows, cultural meadow, and agricultural fields in the background, areas associated with the Dundas Street Station.



September 2019. Looking northwest at SWT2-2 associated with Tributary of Shoreacres Creek, within Dundas Street Station footprint.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S2**



August 2019. Looking northwest at CUM1-1a with common reed along ditch, and agricultural field and hedgerow in the background.



July 2019. Looking southwest at CUM1-1a and a hedgerow within the 407ETR right-of-way, just west of Walkers Line.



July 2019. Looking slightly southwest at CUM1-1a in the foreground, a hedgerow to the left, and MAM2-2b adjacent to the hedgerow, with agricultural fields and hedgerows in the background.



July 2019. Looking northeast at Walkers Line at agricultural fields and associated hedgerows in the background, and CUM1-1a to the right of the photo.



July 2019. Looking northeast at MAM2-2b with a hedgerow to the north of this community.



August 2019. Looking northeast at MAS2a and MAM2-2a north of the CUM1-1a community.



**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S2**



July 2019. Looking east at CUM1-1a between car park and the 407ETR right-of-way, just south of Appleby Line. Area associated with Appleby Line Station.



July 2019. Looking slightly south at CUM1-1a and manicured areas associated with the car park, west of Appleby Line. Area associated with Appleby Line Station.



July 2019. Looking north along Appleby Line at CUM1-1a within the right-of-way and agricultural field to the left. Area associated with Appleby Line Station.



July 2019. Looking southwest from Appleby Line, across an agricultural field with the commuter parking lot in the background. This area is also associated with the Appleby Line Station.



July 2019. Looking west at the CUW1a, just east of the CUT1-1. The CUW1a is associated with a watercourse.



July 2019. Looking west at a small CUT1-1 community.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S2**



July 2019. Looking north along FOD5-1a on the east facing slope, west of Bronte Creek.



July 2019. Looking northeast at FOD5-1a.



July 2019. Looking west at FOD6-2 community that is provincially ranked S3.



July 2019. Looking west at FOD6-2 with pale touch-me-not abundant to dominant across parts of the community.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S3**



July 2019. Looking southwest at FOD5-3b partially along the eastern valley slope associated with Bronte Creek.



July 2019. Looking east across FOD5-3b, west of the top-of-bank..



July 2019. Looking northeast at FOD5-3b and the BLO1 associated with Bronte Creek.



July 2019. Looking south along very narrow shallow marsh along the western bank of Bronte Creek.



July 2019. Looking west at the southern edge of the narrow FOD5-5.



July 2019. Looking northwest along the eastern edge of the narrow FOD5-5.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S3**



July 2019. Looking west, west of Tremaine Road across CUM1-1a with hedgerow in the background, behind which is the FOD5-5.



July 2019. Looking north across at CUM1-1a, at MAS2b that bisects a portion of the cultural meadow south of the transformer station.



July 2019. Looking west along CUM1-1a north of 407ETR.



July 2019. Looking northwest at MAM2-2d, west of Tremaine Road associated with a Tributary of Fourteen Mile Creek.



June 2019. Looking east across CUM1-1c and associated hedgerow, north of 407ETR.



June 2019. Looking east at the MAM2-2e. The CUM1-1d community and agricultural fields are located east of the wetland community.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S3**



July 2019. Looking east across an agricultural field typical of Segment S3.



July 2019. Looking north within MAM2-2f.



July 2019. Looking west within FOD5-3c community.



July 2019. Looking east across CUM1-1d with MAM2-2e in the background.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S4**



July 2019. Looking north at MAM2-2b, area that is associated with both the runningway and the Bronte Road Station.



July 2019. Looking east at CUM1-1e associated with both the runningway and the Bronte Road Maintenance and Storage Facility.



July 2019. Looking northeast at MAS2-1d with hedgerow dominated by common buckthorn immediately east of wetland.



July 2019. Looking east across CUM1-1e with a hedgerow in the background.



July 2019. Looking southeast along very narrow MAS2-1a community between old agricultural fields now identified as cultural meadow or CUM1-1e.



July 2019. Small section of narrow MAS2-1a community.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S4**



July 2019. Looking east at FOD5-3d community.



July 2019.  
Interior of  
FOD5-3d  
community.



July 2019. Looking at FOD5-3e west of Sixteen Mile Creek.



July 2019. Western edge of FOD5-3e on tableland, west of Sixteen Mile Creek.



July 2019. Looking north at CUM1-1a west of FOD5-3e community associated with Sixteen Mile Creek.



July 2019. Small, isolated shallow marsh identified periodically within CUM1-1a either associated with road drainage or where creek flows are conveyed below 407ETR.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S5**



July 2019. Looking northwest at the edge of FOD5-3e, west of Sixteen Mile Creek.



July 2019. Looking at FOD5-3e community.



July 2019. Looking west at FOC2-2 community with BLO1 below. Cultural meadow (CUM1-1a) in the floodplain and MAM2-10 along the bank of Sixteen Mile Creek in the lower portion of the photo.



July 2019. Looking south with another view of MAM2-10 along the western bank of Sixteen Mile Creek.



July 2019. Looking west at FOD7-3a community in the floodplain west of the creek.



July 2019. Looking east at CUT1b within the floodplain, east of Sixteen Mile Creek.



**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S5**



July 2019. Looking west within FOD5-2 forest community.



July 2019. Looking west, further into FOD5-2 forest community.



July 2019. Looking east along CUM1-1a within and adjacent to the 407ETR right-of-way.



July 2019. Looking west at CUT1-4a.



July 2019. Looking west across CUM1-1f with small meadow marsh inclusion dominated by reed-canary grass.



July 2019. Looking north at CUM1-1a along the east side of Neyagawa Boulevard.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S5**



July 2019. Looking northwest at CUM1-1b, formerly under agriculture.



July 2019. Looking east across agricultural field, east of Neyagawa Boulevard. Associated hedgerow is in the background.



July 2019. Looking south at manicured areas at the Trafalgar Road Go parking lot, at the location of the Trafalgar Road Station.



July 2019. Looking west at CUM1-1a in the foreground, agricultural fields and FOD2-4 in the background. Areas associated with the runningway and the Trafalgar Road Station.



July 2019. Looking north at MAS2-1g along the east side of Trafalgar Road.



September 2019. Looking northeast at CUW1f associated with a residence. Area is located within the runningway and Trafalgar Road Maintenance Storage Facility.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S5**



July 2019. Looking east with CUM1-1a on the left, cultivated field or agriculture on the right side of photo. Areas associated with runningway and Trafalgar Road Maintenance Storage Facility.



July 2019. Looking east at CUT1-4c with FOD2-4b in the background of the photo.



July 2019. Looking east at very narrow MAS2-1g that bisects the agricultural field. View of FOD2-4b in the background of photo.



July 2019. Looking south in FOD2-4b community.



July 2019. Looking northeast at hedgerow along the south side of 407ETR, east of FOD2-4b.



July 2019. Looking northeast at CUM1-1a with cattails evident along ditch, east of 407ETR.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S6**



July 2019. Looking north at CUM1-1h in the left foreground, MAM2-2i in the background, and MAS2-1h in the right foreground of photo.



July 2019. Looking north at CUM1-1h.



July 2019. Looking west at CUW1g associated with abandoned residence.



July 2019. Looking north at residences and manicured areas along the north side of Eglinton Avenue.



July 2019. Looking north at disturbed area and cultural habitat associated with adjacent residences, north of Eglinton Avenue, just east of 407ETR.



July 2019. Looking north at CUM1-1a, north of Eglinton Avenue, within 407ETR right-of-way.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S6**



July 2019. Looking north at CUM1-1e and agricultural field in the background of photo.



July 2019. Looking south at CUM1-1e with FOD5b in the left background of photo.



July 2019. Looking north at MAM2a just south of SWD2-2a. Numerous dead or dying ash trees within deciduous swamp community.



July 2019. Looking east at CUM1-1a and disturbed area where development is ongoing.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S7**



August 2019. Looking west at CUM1-1e/D.



August 2019. Looking northwest at manicured areas associated with residences west of 9<sup>th</sup> Line.



August 2019. Looking west at manicured areas associated with residences west of 9<sup>th</sup> Line.



August 2019. Looking west at manicured areas associated with residences west of 9<sup>th</sup> Line.



August 2019. Looking west at CUM1-1a and adjacent large area of open water (OAO).



August 2019. Looking northwest at storm water ponds with CUM1-1a and planted trees observed around ponds. Limited, narrow areas of shallow marsh with cattails and rarely pickerelweed an aquatic herb were observed intermittently along pond margin. These were too small to delineate.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S7**



August 2019. Looking northwest at CUM1-1a, an area associated with the location of the Britannia Road Station.



August 2019. Looking northwest at MAM2-2j just west of 9<sup>th</sup> Line, an area associated with the location of the Britannia Road Station.



August 2019. Looking west at CUM1-1a with cattails dominating along bottomland, south of Britannia Road.



August 2019. Looking south at MAM2-2j with intermittent inclusions of shallow marsh either dominated by cattails or common reed.



August 2019. Looking east at CUM1-1a and disturbed area associated with commercial, north of Britannia Road.



August 2019. Looking west at MAM2-2j associated with drainage from Osprey Marsh.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S8**



August 2019. Looking south agricultural field adjacent to MAM2-2j community.



August 2019. Looking north across same agricultural field with associated hedgerow.



August 2019. Looking southeast at MAS2-1/SWT2 community.



August 2019. Looking north across agricultural field with CUW1g and CUM1-1g along the right side of the photo.



August 2019. Looking west at MAM2-2j between 407ETR and 9<sup>th</sup> Line.



August 2019. Looking at agricultural field and associated hedgerow with abundant oaks common buckthorn.



**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S8**



August 2019. Looking north at CUM1-1a.



August 2019. Looking northwest at CUM1-1a that surrounds the large storm pond seen in the photo background, located immediately east of 407ETR.



August 2019. Looking northeast at CUM1-1a within 407ETR right-of-way, near to the Union Gas Parkway Station. The FOD6-4 is seen in the background.



August 2018. Looking south at CUM1-1a and Storm Pond. Rare to occasional cattails and abundant common reed along margin of pond.



August 2019. Looking south at MAM2-2h, with CUM1-1a to the west and east of the meadow marsh community.



August 2018. Looking south across MAM2-2h and CUM1-1a at the hedgerow along the fence associated with the Union Gas Parkway Station.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S8**



August 2018. Looking southeast at the northwest corner of FOD6-4, the corner of which is in the runningway.



August 2018. Looking west along MAM2-2h in the low lying area between Derry Road and FOD6-4 to the south.



August 2018. Looking northeast from Derry Road at CUM1-1a and MAM2-2j communities with hedgerows in the background.



August 2018. Looking northeast, further north than previous photo, at the MAM2-2j with SWD2-2b in the background.



August 2018. Looking southwest at the CUM1-1c associated with an old residence at the corner of 9<sup>th</sup> Line and Derry Road. This area is within the Derry Road Station.



August 2018. Looking west at hedgerow and various planted trees associated with the old residence in the previous photo.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S8**



August 2018. Looking east from Derry Road and 407ETR, at CUM1-1a within right-of-way and areas dominated by common reed.



August 2018. Looking west at CUM1-1a and SWT2-2b communities.



August 2018. Looking south at CUM1-1a, MAM2-2l and SWT2-2b communities.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S9**



August 2018. Looking east at agricultural field just east of the rail line, with MAM2-2l and SWT2-2b in the background.



August 2018. Looking east at OAO associated with agricultural fields. Vegetation around pond includes Manitoba maple and buckthorn. A very small MAS2 with cattails, purple loosestrife, and soft-stemmed bulrush located at northwest corner of pond, was too small to delineate on a map.



August 2018. Looking west at CUM1-1a and MAM2-2f, west of 9<sup>th</sup> Line.



August 2019. Looking west at CUM1-1a and agricultural fields associated with hydro corridor, east of 9<sup>th</sup> Line.



August 2019. Looking south from Argentic Road, at agricultural fields, and MAS2b/MAM2b associated with drainage across the hydro corridor. Area associated with the Lisgar Go Station.



August 2019. Looking south at MAS2a/MAM2a and CUM1-1a communities associated with the hydro corridor.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S9**



August 2018. Looking west CUM1-1a within the hydro corridor, west of Winston Churchill Boulevard and north of Hwy. 401. In 2019 area was observed as agriculture (see next photo).



August 2019. Looking west toward Winston Churchill Boulevard at field that is now under cultivation.



August 2019. Looking west at CUM1-1a/D, just north of cultivated field. Several areas of gravel and bare earth were observed within this area.



July 2018. Looking east at CUM1-1a community associated with hydro corridor and riding stable.



July 2018. Looking east, just north of hydro corridor. Grazed CUM1-1a (area associated with riding school) with agricultural fields in the background.



July 2018. Looking west at MAS2-1a with both cattails and reed canary grass abundant. Community surrounded by CUM1-1a and agriculture.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S10**



August 2019. Looking north at CUM1-1a, planted trees with numerous self-established Russian olive, associated with an abandoned residence.



August 2019. Looking west at CUM1-1a, west of storm pond that is south of 407ETR and east of Meadowvale Boulevard.



August 2019. Looking east at CUM1-1a in the foreground, with storm pond that is associated with MAS2-1k.



August 2019. Looking east at CUM1-1a just south of storm pond.



August 2019. Looking east at MAM2-2b, adjacent and south of 407ETR. This meadow marsh is surround by CUM1-1a and a grouping of shrubs including common buckthorn.



August 2019. Looking east at manicured strip of grasses and planted trees along Hereford Street, and CUM1-1a to the right, just north of 407ETR. Area associated with the Mississauga Road Station.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S10**



August 2019. Looking east a CUM1-1a east of Mississauga Road, north of 407ETR. Golf course and associated CUW1j are in the background.



August 2019. Looking north at MAS2b/MAM2b and CUM1-1a, communities surrounded by CUW1j. Area is just south of a golf course.



August 2019. Looking west at CUM1-1a in the foreground, with a view of the eastern edge of the CUW1j.



August 2019. Looking east at CUM1-1a and narrow manicured strip associated with commercial development in the left of photo. Area is east of Financial Drive.



September 2019. Looking west at CUM1-1a and small area of trees/shrubs, east of Credit River.

**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S10**



July 2018. Looking north at MAM2-2m and eastern edge of FOD7-3b, east of the rail line.



July 2018. Looking west at FOD7-3b community.



July 2018. Looking at FOD7-3b at a low point where drainage bisects the community. Manitoba maple and buckthorn are occasional to abundant.



August 2019. Looking north into FOD7-3b community.



**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S11**



July 2018. Looking west at CUM1-1a/D.



July 2018. Looking east across CUM1-1/D towards Mavis Road/407ETR Interchange.



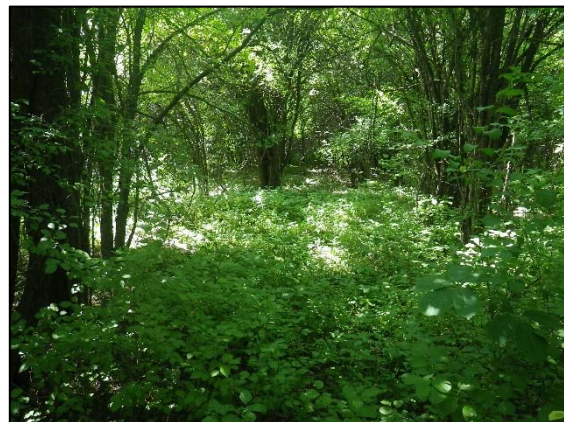
July 2018. Looking northwest at CUM1-1a associated with the 407ETR eastbound on-ramp for Mavis Road southbound lanes.



July 2018. Looking at CUW1i associated with the 407ETR eastbound on-ramp for Mavis Road northbound lanes.



July 2018. Looking west at CUT1d, east of Mavis Road. The cultural thicket is bisected by hydro infrastructure and is dominated by common buckthorn with young trees along community edges where it was bisected by infrastructure.



July 2018. Looking west within CUT1d community.

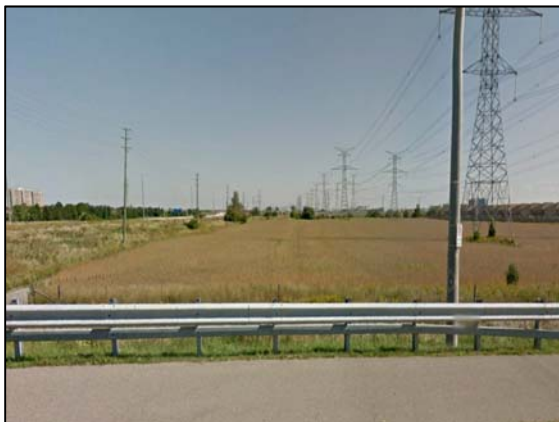
**PHOTO APPENDIX**  
**Highway 407 Transitway**  
**West of Brant Street to West of Hurontario**  
**Segment S11**



July 2018. Looking northwest at agricultural fields and CUM1-1a just west of McLaughlin Road.



July 2018. Looking northwest at MAS2-1a that intervenes agricultural lands.



September 2018. Looking east at CUM1-1a to the left in the photo, and agricultural fields, east of McLaughlin Road.



July 2018. Looking west at MAM2-2n that is associated with a Tributary of Fletcher's Creek.



July 2018. Looking west at CUM1-1a and storm water pond, west of Hurontario Street.



July 2018. Looking further west at CUM1-1a with abundant non-native and invasive plant species tolerant of regular disturbance.

**APPENDIX D.  
VASCULAR PLANT LIST**

Appendix D. Vascular Plant List

Scientific Name	Common Name	GRank	SRank	MNR	Halton - Varga	Peel - Varga	Peel - CVC	BLO1	CUM1-1a-CUM1-1j	CUM1-1a/CUT1a - CUM1-1c/CUT1c	CUP1	CUP1-3	CUT1-1	CUT1-4a - CUT1-4c	CUT1a - CUT1e	CUT1a/CUW1a	CUW1a - CUW1j	FOC2-2	FOD2-4a - FOD2-4b	FOD5-1a - FOD5-1b	FOD5-2	FOD5-3a - FOD5-3e	FOD5-5	FOD5a - FOD5b	FOD6-2	FOD6-4	FOD7-2a - FOD7-2b	FOD7-3a - FOD7-3b	H	M	MAM2	MAM2-10	MAM2-2a - MAM2-2n	MAM2-1/SWT2	MAM2-1a - MAM2-1m	MAM2-9	MAM2a - MAM2b	MAM2b/MAM2b	SWD2-2a - SWD2-2c	SWD3	SWD4-1a - SWD4-1b	SWT2-2							
<b>EQUISETACEAE</b>	<b>HORSETAIL FAMILY</b>																																																
<i>Equisetum arvense</i>	field horsetail	G5	S5		X	X				X																																							
<b>DRYOPTERIDACEAE</b>	<b>WOOD FERN FAMILY</b>																																																
<i>Matteuccia struthiopteris</i> var. <i>pennsylvanica</i>	ostrich fern	G5	S5		X	X																		X																									
<i>Athyrium filix-femina</i> var.	northern lady fern	G5T5	S5		X	X				X										X																													
<i>Onoclea sensibilis</i>	sensitive fern	G5	S5		X	X																X																											
<b>PINACEAE</b>	<b>PINE FAMILY</b>																																																
* <i>Pinus sylvestris</i>	scotch pine	G?	SE5		X	X										X																																	
<i>Pinus sp.</i>	pine															X																																	
* <i>Picea abies</i>	Norway spruce	G?	SE3		X-SR	X			X	X																																							
<i>Picea sp.</i>	spruce															X																																	
<i>Tsuga canadensis</i>	eastern hemlock	G5	S5		X	X														X	X	X		X																									
<i>Pinus strobus</i>	eastern white pine	G5	S5		X	X			X	X			X				X	X	X	X	X		X		X																								
* <i>Pinus nigra</i>	Austrian pine	G?	SE2						X	X																																							
* <i>Picea pungens</i>	Colorado spruce	G5	SE1						X	X																																							
<i>Picea glauca</i>	white spruce	G5	S5		U	R3			X		X	X				X											X	X																					
<b>CUPRESSACEAE</b>	<b>CEDAR FAMILY</b>																																																
<i>Juniperus communis</i>	common juniper	G5	S5						X																																								
<i>Juniperus horizontalis</i>	creeping juniper	G5	S5																																														
<i>Juniperus virginiana</i>	eastern red cedar	G5	S5				R		X	X																																							
<i>Thuja occidentalis</i>	eastern white cedar	G5	S5		X	X			X							X	X																																
<b>TAXACEAE</b>	<b>YEW FAMILY</b>																																																
* <i>Taxus cuspidata</i>	Japanese Yew																																																
<b>ARISTOLOCHIACEAE</b>	<b>DUCHMAN'S-PIPE FAMILY</b>																																																
<i>Asarum canadense</i>	wild ginger	G5	S5		X	X																X																											
<b>NYMPHAEACEAE</b>	<b>WATER-LILY FAMILY</b>																																																
<i>Nymphaea odorata</i>	fragrant water-lily	G5	S5		R1	R3	R																																										
<b>RANUNCULACEAE</b>	<b>BUTTERCUP FAMILY</b>																																																
<i>Anemone canadensis</i>	Canada anemone	G5	S5		X	X			X										X	X	X			X				X																					
<i>Clematis virginiana</i>	virgin's-bower	G5	S5		X	X			X					X																																			
<i>Ranunculus recurvatus</i> var. <i>recurvatus</i>	hooked buttercup	G5	S5		X	X			X																																								
* <i>Ranunculus acris</i>	tall buttercup	G5	SE5		X	X								X																																			
<i>Anemone virginiana</i> var.	thimbleweed	G5T	S5		X	X																X																											
<i>Thalictrum pubescens</i>	tall meadow-rue	G5	S5		X	X																	X																										
<i>Actaea pachypoda</i>	white baneberry	G5	S5		X	X																X																											
<i>Thalictrum dioicum</i>	early meadow-rue	G5	S5		X	X																		X																									
<b>BERBERIDACEAE</b>	<b>BARBERRY FAMILY</b>																																																
<i>Podophyllum peltatum</i>	may-apple	G5	S5		X	X													X			X	X																										
<i>Caulophyllum thalictroides</i>	blue cohosh	G	S5		X	X														X		X																											
* <i>Berberis vulgaris</i>	common barberry	G?	SE5		X	X			X																																								
<b>PAPAVERACEAE</b>	<b>POPPY FAMILY</b>																																																
<i>Sanguinaria canadensis</i>	bloodroot	G5	S5		X	X																X		X																									
<b>PLATANACEAE</b>	<b>PLANE-TREE FAMILY</b>																																																
<i>Platanus occidentalis</i>	sycamore	G5	S4		R4	R3																																											











Scientific Name	Common Name	GRank	SRank	MNR	Halton - Varga	Peel - Varga	BLO1	CUM1-1a-CUM1-1I	CUM1-1a/CUT1a - CUM1-1c/CUT1c	CUP1	CUP1-3	CUT1-1	CUT1-4a - CUT1-4c	CUT1a - CUT1e	CUT1a/CUW1a	CUW1a - CUW1j	FOC2-2	FOD2-4a - FOD2-4b	FOD5-1a - FOD5-1b	FOD5-2	FOD5-3a - FOD5-3e	FOD5-5	FOD5a - FOD5b	FOD6-2	FOD6-4	FOD7-2a - FOD7-2b	FOD7-3a - FOD7-3b	H	M	MAM2	MAM2-10	MAM2-2a - MAM2-2n	MAS2-1/SWT2	MAS2-1a - MAS2-1m	MAS2-9	MAS2a - MAS2b	MAS2b/MAM2b	SWD2-2a - SWD2-2c	SWD3	SWD4-1a - SWD4-1b	SWT2-2								
<b>SCROPHULARIACEAE</b>	<b>FIGWORT FAMILY</b>																																																
* <i>Linaria vulgaris</i>	butter-and-eggs	G?	SE5		X	X		X																					X																				
* <i>Verbascum thapsus</i>	common mullein	G?	SE5		X	X		X						X														X	X																				
<b>RUBIACEAE</b>	<b>MADDER FAMILY</b>																																																
* <i>Galium verum</i>	yellow bedstraw	G?	SE5			X		X	X																																								
<i>Galium aparine</i>	cleavers	G5	S5		U	R4		X												X																													
<b>CAPRIFOLIACEAE</b>	<b>HONEYSUCKLE FAMILY</b>																																																
<i>Viburnum trilobum</i>	high bush cranberry	G5T5	S5		X	X		X																																									
* <i>Viburnum opulus</i>	guelder rose	G5	SE4		X	X		X												X	X																												
* <i>Lonicera morrowii</i>	morrow's honeysuckle	G?	SE3		X	X		X					X		X																																		
* <i>Lonicera maackii</i>	amur honeysuckle	G?	SE2		X			X																																									
<i>Lonicera sp.</i>	honeysuckle																																																
* <i>Lonicera tatarica</i>	tartarian honeysuckle	G?	SE5		X	X		X					X	X	X						X	X					X	X	X																				
<b>DIPSACACEAE</b>	<b>TEASEL FAMILY</b>																																																
* <i>Dipsacus fullonum ssp. sylvestris</i>	wild teasel	G?T?	SE5		X	X		X	X				X	X	X													X	X																				
<b>ASTERACEAE</b>	<b>ASTER FAMILY</b>																																																
* <i>Achillea millefolium ssp. millefolium</i>	common yarrow	G5T?	SE?		X	X		X																																									
* <i>Cichorium intybus</i>	chicory	G?	SE5		X	X		X	X					X	X																																		
* <i>Chrysanthemum leucanthemum</i>	ox-eye daisy	G?	SE5		X	X		X				X																																					
* <i>Cirsium arvense</i>	Canada thistle	G?	SE5		X	X	X	X	X				X	X	X														X																				
<i>Aster lanceolatus ssp. lanceolatus</i>	tall white aster	G5T?	S5		X	X		X																																									
<i>Erigeron philadelphicus ssp. philadelphicus</i>	Philadelphia fleabane	G5T?	S5		X	X						X																																					
<i>Ambrosia artemisiifolia</i>	common ragweed	G5	S5		X	X		X					X		X																																		
* <i>Sonchus oleraceus</i>	common sow-thistle	G?	SE5		X	X		X																																									
<i>Bidens frondosa</i>	devil's beggar-ticks	G5	S5		X	X		X																																									
* <i>Centaurea maculosa</i>	spotted knapweed	G?	SE5		X	X		X																																									
* <i>Arctium lappa</i>	great burdock	G?	SE5		X	X		X	X																																								
<i>Conyza canadensis</i>	horseweed	G5	S5		X	X		X				X	X		X																																		
<i>Eupatorium perfoliatum</i>	perfoliate thoroughwort	G5	S5		X	X		X	X				X																																				
<i>Eupatorium maculatum ssp. maculatum</i>	spotted joe-pye-weed	G5T5	S5		X	X		X																																									
* <i>Arctium minus ssp. minus</i>	common burdock	G?T?	SE5		X	X		X	X	X				X	X													X	X																				
<i>Erigeron annuus</i>	daisy fleabane	G5	S5		X	X		X					X	X	X																																		
<i>Aster novae-angliae</i>	New England aster	G5	S5		X	X		X	X				X	X	X																																		
<i>Aster macrophyllus</i>	large-leaved aster	G5	S5		X	X							X	X																																			
<i>Aster lateriflorus var. lateriflorus</i>	calico aster	G5T5	S5					X	X				X																X																				
* <i>Artemisia absinthium</i>	common wormwood	G?	SE3?			X		X	X																																								
<i>Ambrosia trifida</i>	giant ragweed	G5	S5		X	X		X						X																																			
<i>Euthamia graminifolia</i>	flat-topped bushy goldenrod	G5	S5		X	X		X																																									
* <i>Cirsium vulgare</i>	bull thistle	G5	SE5		X	X		X																					X																				
<i>Solidago altissima var. altissima</i>	tall goldenrod		S5		X	X		X												X																													
<i>Xanthium strumarium</i>	tumor-curing cocklebur	G?	S5		X	X																																											
* <i>Sonchus arvensis ssp. arvensis</i>	field sow-thistle	G?T?	SE5		X	X		X	X					X																																			
* <i>Tussilago farfara</i>	coltsfoot	G?	SE5		X	X	X		X					X	X																																		
* <i>Tragopogon dubius</i>	doubtful goat's-beard																																																





**APPENDIX E.**  
**ACRONYMS AND DEFINITIONS USED IN SPECIES LIST**

## ACRONYMS AND DEFINITIONS USED IN SPECIES LISTS

### **G-Rank**                      **Global Rank**

Global ranks are assigned by a consensus of the network of Conservation Data Centres, scientific experts, and the Nature Conservatory to designate a rarity rank based on the range-wide status of a species, subspecies or variety.

The most important factors considered in assigning global ranks are the total number of known, extant sites world-wide, and the degree to which they are potentially or actively threatened with destruction. Other criteria the number of known populations considered to be securely protected, the size of the various populations, and the ability of the taxon to persist at its known sites. The taxonomic distinctness of each taxon has also been considered. Hybrids, introduced species, and taxonomically dubious species, subspecies and varieties have not been included.

G1=	Extremely rare; usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
G2 =	Very rare; usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.
G3 =	Rare to uncommon; usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
G4 =	Common; usually more than 100 occurrences; usually not susceptible to immediate threats.
G5 =	Very common; demonstrably secure under present conditions.
GH =	Historic, no records in the past 20 years.
GU =	Status uncertain, often because of low search effort or cryptic nature of the species; more data needed.
GX =	Globally extinct. No recent records despite specific searches.
? =	Denotes inexact numeric rank (i.e. G4?).
G" " =	A "G" (or "T") followed by a blank space means that the NHIC has not yet obtained the Global Rank from The Nature Conservancy.
G? =	Unranked, or, if following a ranking, rank tentatively assigned (e.g. G3?). Denotes that the taxonomic status of the species, subspecies, or variety is questionable.
Q =	questionable.
T =	Denotes that the rank applies to a subspecies or variety.

## **S-Rank**                      **Provincial Rank**

Provincial (or Sub-national) ranks are used by the Ontario Ministry of Natural Resources Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for the global ranks, but consider only those factors within the political boundaries of Ontario. By comparing the global and provincial ranks, the status, rarity, and the urgency of conservation needs can be ascertained. The NHIC evaluates provincial ranks on a continual basis and produces updated list at least annually.

S1 =	Critically imperiled in Ontario because of extreme rarity (often 5 or fewer occurrences) or because of some factor (s) such as very steep declines making it especially vulnerable to extirpation.
S2 =	Imperiled in Ontario because of rarity due to very restricted range, very few populations (often 20 or fewer occurrences) steep declines or other factors making it very vulnerable to extirpation.
S3 =	Vulnerable in Ontario due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4 =	Apparently secure - uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5 =	Secure - common, widespread, and abundant in Ontario.
SX =	Presumed Extirpated - specie or community is believed to be extirpated from Ontario.
SNR =	Unranked - conservation status in Ontario not yet assessed
SU =	Unrankable - currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
SNA =	Not applicable - a conservation status rank is not applicable because the species is not a suitable target for conservation activities.
S#S# =	Range rank - a numeric range rank (e.g. S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g. SU is used rather than S1S4).

## **COSEWIC**                      **Committee On The Status Of Endangered Wildlife in Canada**

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the national status of wild species that are considered to be at risk in Canada.

Extinct (X)	A wildlife species that no longer exists.
Extirpated (XT)	A wildlife species no longer existing in the wild in Canada, but occurring elsewhere.
Endangered (E)	A wildlife species facing imminent extirpation or extinction.
Threatened (T)	A wildlife species likely to become endangered if limiting factors are not reversed.
Special Concern (SC)	A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
Not at Risk (NAR)	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.
Data Deficient (DD)	A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.

## **COSSARO/OMNR Committee On The Status Of Species At Risk In Ontario/Ontario Ministry Of Natural Resources**

The Committee on the Status of Species at Risk in Ontario (COSSARO)/Ontario Ministry of Natural Resources (OMNR) assess the provincial status of wild species that are considered to be at risk in Ontario.

Extinct (EXT)	A species that no longer exists anywhere.
Extirpated (EXP)	A species that no longer exist in the wild in Ontario but still occurs elsewhere.
Endangered (Regulated) (END-R)	A species facing imminent extinction or extirpation in Ontario which has been regulated under Ontario's <i>Endangered Species Act</i> .
Endangered (END)	A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's Endangered Species Act.
Threatened (THR)	A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
Special Concern (SC)	A species with characteristics that make it sensitive to human activities or natural events.
Not at Risk (NAR)	A species that has been evaluated and found to be not at risk.
Data Deficient (DD)	A species for which there is insufficient information for a provincial status recommendations.

### **Local Status                      Regional Municipality of York, Regional Municipality of Peel (Riley 1989)**

Species status within the York and Peel Regions were used to determine local vascular plant status for the study area.

R-# = R- Native species present and rare; # - number of stations at which the species has been identified.

U = Uncommon.

X = Not classified as rare or uncommon within York and Peel Regions.

**APPENDIX F.**  
**CORRESPONDANCE WITH MNRF, TRCA AND CVC**



## Sowel Kang

---

**Subject:** RE: MTO 407 Transitway - Brant Street to Hurontario Street - Data Request

**From:** Kerslake, Holly

**Sent:** June 14, 2018 2:13 PM

**To:** 'lmarray@creditvalleyca.ca' <[lmarray@creditvalleyca.ca](mailto:lmarray@creditvalleyca.ca)>

**Cc:** 'James, Eric' <[ejames@creditvalleyca.ca](mailto:ejames@creditvalleyca.ca)>; 'Sowel Kang' <[skang@lgl.ca](mailto:skang@lgl.ca)>; Maleki, Roshanak <[Roshanak.Maleki@parsons.com](mailto:Roshanak.Maleki@parsons.com)>; Garron, Gus <[Gus.Garron@parsons.com](mailto:Gus.Garron@parsons.com)>; [Graham.DeRose@ontario.ca](mailto:Graham.DeRose@ontario.ca); Sarris, Larry (MTO) <[Larry.Sarris@ontario.ca](mailto:Larry.Sarris@ontario.ca)>

**Subject:** MTO 407 Transitway - Brant Street to Hurontario Street - Data Request

Dear Mr. Marray,

The Ontario Ministry of Transportation (MTO) is commencing the Environmental Assessment, and Preliminary Design of the 407 Transitway from west of Brant Street in the City of Burlington to west of Hurontario Street in the City of Mississauga (study area map below). The 407 Transitway will consist of a 43 kilometre, two-lane, fully grade separated road on an exclusive right-of-way, running along the Highway 407 Corridor, and several station sites that will include parking, pick-up/drop-off, bus integration, and active transportation facilities. This 43 kilometre segment forms part of the 150 kilometre long high-speed interregional facility planned to be ultimately constructed on a separate right-of-way that parallels Highway 407 from Burlington to Highway 35/115, with stations, parking and access connections. This transitway is a component within the official plans of the stakeholder municipalities and of the Province's commitment to support transit initiatives in the Greater Golden Horseshoe through the Metrolinx Regional Transportation Plan.

The project is currently in the data collection phase and the purpose of this email is to request from your authority, any available information and data that may be relevant to the project. Your input with respect to constraints, opportunities, specific concerns, etc. will be most valuable to our project team throughout the study phases. The study area is illustrated in the map below. We have prepared the list shown below, of the data that we hope you will be able to provide; however, any other information that you consider relevant to the project will be most appreciated.

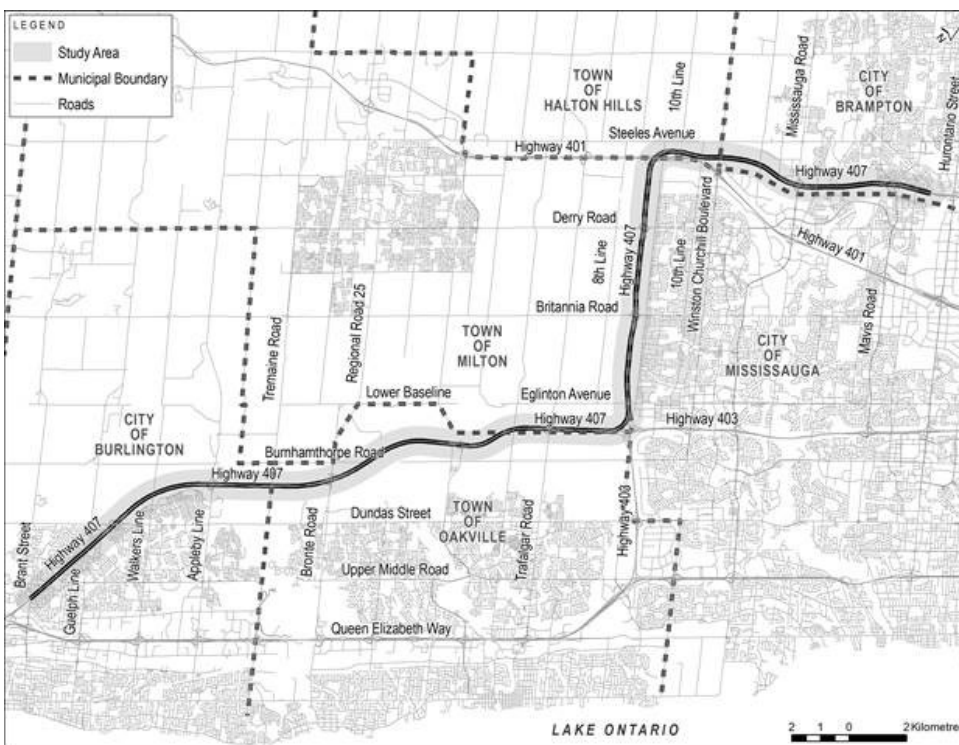
- **Environmental Requirements**

- Fisheries
  - Fish collection records (fish dots) – includes mussels
  - Habitat data (usually collected during the Watershed Monitoring Program using OSAP)
  - Thermal regime
  - Barrier locations in general proximity to study area (if available)
  - Flow regime (permanent, intermittent, ephemeral)
  - Significant groundwater discharge areas
- Wildlife
  - SAR
  - Species occurrences (birds, mammals, amphibians)
  - Significant habitat (deer yards, amphibian breeding, interior forest, etc.)
  - Stick nest locations
- Botany
  - ELC communities
  - Flora
  - Fauna
  - Rare plant occurrences
  - Tree inventories (if available)
- Significant Natural Areas

- ESA
- Wetlands
- Forest cover
- ANSIs, PSWs (if available)

- **Water Requirements**

- Hydrology
  - Drainage Area maps/Catchment boundaries of each watershed (CAD files if available)
  - Hydrologic models for all watersheds within the study boundaries
  - Rainfall files used in the hydrologic models
  - Hydrologic modelling documentation (reports)
- Hydraulics
  - All available HEC-RAS models
  - All available floodplain maps (CAD files is available)
  - CAD file of all watercourses



**Key Plan of the Study Area**

Please advise if you have any questions. Your support will be greatly appreciated.

Thanks!

Holly

**Holly Kerslake**

Rail & Transit, Parsons Transportation Group  
 625 Cochrane Drive, Suite 500, Markham, ON, Canada L3R 9R9  
[holly.kerslake@parsons.com](mailto:holly.kerslake@parsons.com)  
 Desk : +1 905.943.0446  
 Cell : +1 647.467.8379

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## Sowel Kang

---

**Subject:** RE: Holly Kerslake has shared the folder 'TW4 - CVC Data' with you.

---

**From:** Vir, Aanchal <[aanchal.vir@cvc.ca](mailto:aanchal.vir@cvc.ca)>

**Sent:** Tuesday, October 02, 2018 11:43 AM

**To:** Kerslake, Holly <[Holly.Kerslake@parsons.com](mailto:Holly.Kerslake@parsons.com)>

**Subject:** RE: Holly Kerslake has shared the folder 'TW4 - CVC Data' with you.

Hi Holly,

I uploaded the files. It is a zipped folder which contains 4 other folders. Let me know if you can access them

Regards,

**Aanchal Vir**

Technician, Planning | Credit Valley Conservation

905.670.1615 ext 304 | 1-800-668-5557

[aanchal.vir@cvc.ca](mailto:aanchal.vir@cvc.ca) | [http://cvc.ca\[na01.safelinks.protection.outlook.com\]](http://cvc.ca[na01.safelinks.protection.outlook.com])

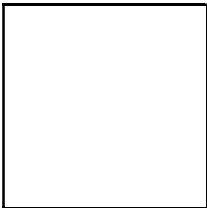
---

**From:** [mail@sf-notifications.com](mailto:mail@sf-notifications.com) [<mailto:mail@sf-notifications.com>]

**Sent:** October 2, 2018 11:33 AM

**To:** Vir, Aanchal

**Subject:** Holly Kerslake has shared the folder 'TW4 - CVC Data' with you.



---

**Holly Kerslake** has shared the folder **TW4 - CVC Data** with you.

Note From Holly:

---

Let me know if you have any issues!

Holly

---

## Sowel Kang

---

**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

**From:** Brad Rennick

**Sent:** November-16-17 11:49 AM

**To:** Garron, Gus <[Gus.Garron@parsons.com](mailto:Gus.Garron@parsons.com)>; [Graham.DeRose@ontario.ca](mailto:Graham.DeRose@ontario.ca); [skang@lgl.com](mailto:skang@lgl.com)

**Cc:** Matt Howatt <[mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)>; Kerslake, Holly <[Holly.Kerslake@parsons.com](mailto:Holly.Kerslake@parsons.com)>; Brown, Vernon <[Vernon.Brown@parsons.com](mailto:Vernon.Brown@parsons.com)>; Maleki, Roshanak <[Roshanak.Maleki@parsons.com](mailto:Roshanak.Maleki@parsons.com)>

**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hello all,

Attached is the requested data, and associated metadata for the 407 Transitway project. As discussed previously, the floodplain data will be delivered at a later date due to the scope of the request.

If you have any questions feel free to contact me,

Regards,

**Brad Rennick**

GIS Analyst

**Conservation Halton**

2596 Britannia Road West, Burlington, ON L7P 0G3  
905.336.1158 ext. 2327 | Fax 905.336.7014 | [brennick@hrca.on.ca](mailto:brennick@hrca.on.ca)  
[conservationhalton.ca](http://conservationhalton.ca)[\[conservationhalton.ca\]](http://conservationhalton.ca)

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---

**From:** Garron, Gus [<mailto:Gus.Garron@parsons.com>]

**Sent:** November-08-17 9:42 AM

**To:** Brad Rennick <[brennick@hrca.on.ca](mailto:brennick@hrca.on.ca)>; [Graham.DeRose@ontario.ca](mailto:Graham.DeRose@ontario.ca)

**Cc:** Matt Howatt <[mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)>; Kerslake, Holly <[Holly.Kerslake@parsons.com](mailto:Holly.Kerslake@parsons.com)>; Brown, Vernon <[Vernon.Brown@parsons.com](mailto:Vernon.Brown@parsons.com)>; Maleki, Roshanak <[Roshanak.Maleki@parsons.com](mailto:Roshanak.Maleki@parsons.com)>

**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hello Brad,

Attached is the signed Licensing Agreement.

Thanks

Gus

---

**From:** Brad Rennick [<mailto:brennick@hrca.on.ca>]  
**Sent:** Tuesday, November 07, 2017 2:11 PM  
**To:** Garron, Gus <[Gus.Garron@parsons.com](mailto:Gus.Garron@parsons.com)>; [Graham.DeRose@ontario.ca](mailto:Graham.DeRose@ontario.ca)  
**Cc:** Matt Howatt <[mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)>; Kerslake, Holly <[Holly.Kerslake@parsons.com](mailto:Holly.Kerslake@parsons.com)>  
**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hello

I have attached our data licensing agreement, please review, sign and return it at your convenience.

Regards,

**Brad Rennick**

GIS Analyst

**Conservation Halton**  
2596 Britannia Road West, Burlington, ON L7P 0G3  
905.336.1158 ext. 2327 | Fax 905.336.7014 | [brennick@hrca.on.ca](mailto:brennick@hrca.on.ca)  
[conservationhalton.ca](http://conservationhalton.ca)[\[conservationhalton.ca\]](http://conservationhalton.ca)

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---

**From:** Brown, Vernon [<mailto:Vernon.Brown@parsons.com>]  
**Sent:** November-07-17 12:50 PM  
**To:** Garron, Gus <[Gus.Garron@parsons.com](mailto:Gus.Garron@parsons.com)>; Brad Rennick <[brennick@hrca.on.ca](mailto:brennick@hrca.on.ca)>  
**Cc:** Matt Howatt <[mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)>; Kerslake, Holly <[Holly.Kerslake@parsons.com](mailto:Holly.Kerslake@parsons.com)>; Maleki, Roshanak <[Roshanak.Maleki@parsons.com](mailto:Roshanak.Maleki@parsons.com)>  
**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Brad,

Yes, we will also need the hydraulic and hydrologic models. As Gus noted below, the study includes a preliminary design, which requires a preliminary assessment of freeboard and clearance requirements at structures (i.e. culverts and bridges) that might be modified/impacted by the implementation of the transitway. In addition, we will need to assess potential hydraulic impacts to adjacent structures and properties along the corridor.

To facilitate the data processing/delivery timeline, if you could provide the floodplain hazard data first and then the engineering models after in a separate package, it would be appreciated.

Regards,  
**Vernon Brown, M.Sc., P.Eng.**  
Principal Engineer, Drainage  
[vernon.brown@parsons.com](mailto:vernon.brown@parsons.com) - P: +1 905.943.0589

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---

**From:** Garron, Gus  
**Sent:** Tuesday, November 07, 2017 11:10 AM  
**To:** Brad Rennick <[brennick@hrca.on.ca](mailto:brennick@hrca.on.ca)>  
**Cc:** Matt Howatt <[mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)>; Kerslake, Holly <[Holly.Kerslake@parsons.com](mailto:Holly.Kerslake@parsons.com)>; Brown, Vernon

<[Vernon.Brown@parsons.com](mailto:Vernon.Brown@parsons.com)>; Maleki, Roshanak <[Roshanak.Maleki@parsons.com](mailto:Roshanak.Maleki@parsons.com)>

**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Brad,

It is for an EA and Preliminary Design. I'm verifying with the Drainage team if the level of detail engineering requested is consistent with the scope of work.

Many thanks for the cooperation.

Gus

---

**From:** Brad Rennick [<mailto:brennick@hrca.on.ca>]

**Sent:** Tuesday, November 07, 2017 10:32 AM

**To:** Garron, Gus <[Gus.Garron@parsons.com](mailto:Gus.Garron@parsons.com)>

**Cc:** Matt Howatt <[mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)>

**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Gus,

I sent this to Holly yesterday but received her "out-of-office" notification, could you please advise on how you would like to proceed?

Regards,

Brad

---

**From:** Brad Rennick

**Sent:** November-06-17 12:39 PM

**To:** 'Kerslake, Holly' <[Holly.Kerslake@parsons.com](mailto:Holly.Kerslake@parsons.com)>

**Cc:** Matt Howatt <[mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)>

**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Holly,

One last question before I complete your data request: In the data list below, you've included Hydraulic and Hydrologic models; do you require this detailed engineering dataset for an EA? Our regulated floodplain hazard data is included as part of the Regulated Hazard package I will be sending, however the engineering data is more appropriate for a detail-design stage rather an EA. We can provide the data as part of the request but it will increase the data processing/delivery timeframe.

How would you like to proceed?

Brad

---

**From:** Kerslake, Holly [<mailto:Holly.Kerslake@parsons.com>]

**Sent:** November-02-17 5:02 PM

**To:** Brad Rennick <[brennick@hrca.on.ca](mailto:brennick@hrca.on.ca)>

**Cc:** Matt Howatt <[mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)>; Sowel Kang <[skang@lgl.ca](mailto:skang@lgl.ca)>; DeRose, Graham (MTO) <[Graham.DeRose@ontario.ca](mailto:Graham.DeRose@ontario.ca)>; Garron, Gus <[Gus.Garron@parsons.com](mailto:Gus.Garron@parsons.com)>; Leung, Winnie <[Winnie.Leung@parsons.com](mailto:Winnie.Leung@parsons.com)>

**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Ok thanks Brad! The MTO project manager for this assignment is Graham DeRose, his contact information is noted below.

**Graham DeRose**

Project Manager

Route Planning & Transit Initiatives

Ministry of Transportation, Central Region

Tel: 416.235.5255

[Graham.DeRose@ontario.ca](mailto:Graham.DeRose@ontario.ca)

Holly

**Holly Kerslake**

Desk : +1 905.943.0446

Cell : +1 647.467.8379

---

**From:** Brad Rennick [<mailto:brennick@hrca.on.ca>]

**Sent:** Thursday, November 02, 2017 10:51 AM

**To:** Kerslake, Holly <[Holly.Kerslake@parsons.com](mailto:Holly.Kerslake@parsons.com)>

**Cc:** Matt Howatt <[mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)>

**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Holly,

Thank you for providing the table, this will help.

I will start processing your request, however I will require the contact information for the MTO project contact as they will have to sign the data licensing agreement.

For #6 – “North Oakville Subwatershed Study Mapping Files” you will have to contact the Town of Oakville directly to obtain this data set.

Regards

**Brad Rennick**

GIS Analyst

**Conservation Halton**

2596 Britannia Road West, Burlington, ON L7P 0G3

905.336.1158 ext. 2327 | Fax 905.336.7014 | [brennick@hrca.on.ca](mailto:brennick@hrca.on.ca)

[conservationhalton.ca](http://conservationhalton.ca)[\[conservationhalton.ca\]](http://conservationhalton.ca)

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**From:** Kerslake, Holly [<mailto:Holly.Kerslake@parsons.com>]

**Sent:** November-01-17 9:25 PM

**To:** Matt Howatt <[mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)>

**Cc:** Garron, Gus <[Gus.Garron@parsons.com](mailto:Gus.Garron@parsons.com)>; Sowel Kang <[skang@lgl.ca](mailto:skang@lgl.ca)>; Brad Rennick <[brennick@hrca.on.ca](mailto:brennick@hrca.on.ca)>;

Brown, Vernon <[Vernon.Brown@parsons.com](mailto:Vernon.Brown@parsons.com)>

**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hi Matt & Brad,

I have confirmed with our Environmentalists and Drainage staff and if you could provide us with all the items in the scope listed below, would be great. I also have included a table below, provided by our drainage team, outlining the specific information they are looking for to compliment the list you provided.

Item	Data	Preferred Format	Remarks
1	Hydrologic and Hydraulic Models.  Required for all sub-watersheds traversed by the study area: Upper Rambo, Roseland, Tuck, Shoreacres, Appleby, Sheldon, Bronte, Fourteen Mile, McCraney, Sixteen Mile, Joshua's Creeks, Morrison Creek.	HEC-RAS and Visual OTTHYMO	This will be required for all tributaries/creeks located within the project limits, if available.
2	Conservation Halton's Approximate Regulatory Limit Mapping (includes watercourses, floodplain, top of bank and meander belt erosion hazards, wetlands and associated hazard allowance setbacks)	PDF, DWG and GIS Shapefiles	
3	Subwatershed Boundaries	PDF, DWG and GIS Shapefiles	Required for all sub-watersheds listed in <b>Item#1</b> , i.e. Upper Rambo, Roseland, Tuck, Shoreacres, Appleby, Sheldon, Bronte, Fourteen Mile, McCraney, Sixteen Mile, Joshua's Creeks, Morrison Creek.
4	Topographic Contour Information	DWG and GIS Shapefiles	Maximum contour interval should be 1 m
5	Hydrological Features	DWG or GIS Shapefiles	
6	North Oakville Subwatershed Study Mapping Files	DWG or GIS Shapefiles	

To answer your second question, LGL Consultants has put in data requests to both MNRF and to Fisheries.

Thanks for your help on pulling this data together – it is greatly appreciated.

Holly

**Holly Kerslake**

Desk : +1 905.943.0446

Cell : +1 647.467.8379

---

**From:** Matt Howatt [<mailto:mhowatt@hrca.on.ca>]

**Sent:** Wednesday, October 25, 2017 3:20 PM

**To:** Kerslake, Holly <[Holly.Kerslake@parsons.com](mailto:Holly.Kerslake@parsons.com)>

**Cc:** Garron, Gus <[Gus.Garron@parsons.com](mailto:Gus.Garron@parsons.com)>; Sowel Kang <[skang@lgl.ca](mailto:skang@lgl.ca)>; Brad Rennick <[brennick@hrca.on.ca](mailto:brennick@hrca.on.ca)>

**Subject:** RE: Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Good afternoon Holly,

Thank you for submitting your data request. We've reviewed the request and I've gathered input from our technical staff on the specific information that we believe would be pertinent to provide.

However, prior to processing the data request further, we wanted to confirm the scope of data with you.



Given the size of the study area and the amount of natural hazard and natural heritage lands it traverses, there is a substantial amount of information that could be provided such as:

- Conservation Halton's Approximate Regulatory Limit Mapping (includes watercourses, floodplain, top of bank and meander belt erosion hazards, wetlands and associated hazard allowance setbacks)
- Hydrologic and Hydraulic Modelling (the study area traverses 11 subwatersheds and we would need to determine if modelling is available for every area)
- Subwatershed Boundaries for Upper Rambo, Roseland, Tuck, Shoreacres, Appleby, Sheldon, Bronte, Fourteen Mile, McCraney, Sixteen Mile, Joshua's Creeks
- Topographic Contour Information
- Conservation Halton's Long-Term Environmental Monitoring Program Aquatic and Terrestrial station/site locations (and corresponding data, if required)
- Fish Community and Distribution Information
- Stream Temperature Stations
- Benthic Monitoring Stations
- Ontario Stream Assessment Protocol Sites
- Stream Barriers
- Water Quality Stations
- Groundwater Monitoring Wells
- Hydrological Features
- North Oakville Subwatershed Study Mapping Files

We also wanted to confirm if you have data requests in with the Ministry of Natural Resources and Forestry for information regarding Provincially Significant Wetlands, Areas of Natural and Scientific Interest, Species at Risk records and Halton Region for Significant Woodlands. Their environmental information should also be considered in the study and some of this information may be able from Conservation Halton subject to confirmation with our GIS staff.

Please let us know if you wish to include all of the above items in your data request or if you wish to scope them down.

If you have any questions regarding the above, please contact me or Brad Rennick, Senior GIS Analyst, who is copied on this email or at extension 2327.

Thank you,  
Matt

**Matt Howatt**  
Environmental Planner

**Conservation Halton**  
2596 Britannia Road West, Burlington, ON L7P 0G3  
905.336.1158 ext. 2311 | Fax 905.336.6684 | [mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)  
[conservationhalton.ca](http://conservationhalton.ca)[\[conservationhalton.ca\]](http://conservationhalton.ca)

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**From:** Kerslake, Holly [<mailto:Holly.Kerslake@parsons.com>]  
**Sent:** October-19-17 1:28 PM  
**To:** Kirby Childerhose <[kchilderhose@hrca.on.ca](mailto:kchilderhose@hrca.on.ca)>  
**Cc:** Garron, Gus <[Gus.Garron@parsons.com](mailto:Gus.Garron@parsons.com)>; Sowel Kang <[skang@lgl.ca](mailto:skang@lgl.ca)>; Matt Howatt <[mhowatt@hrca.on.ca](mailto:mhowatt@hrca.on.ca)>  
**Subject:** Data Request - MTO 407 Transitway Winston Churchill Blvd. to Brant Street

Hello,

Please see attached Parsons's data request and Data License agreement for MTO's 407 Transitway Winston Churchill Blvd. to Brant Street. Please let me know if you have any questions or concerns or need anything else from us – **you can reach me at 905-943-0446.**

Thanks!

Holly


**Holly Kerslake**

Rail & Transit, Parsons Transportation Group  
625 Cochrane Drive, Suite 500, Markham, ON, Canada L3R 9R9  
[holly.kerslake@parsons.com](mailto:holly.kerslake@parsons.com)  
Desk : +1 905.943.0446  
Cell : +1 647.467.8379

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Appendix A: Information Request Form



### Aurora MNR Information Request Form

**Name:**

**Company Name:**

**Proponent Name:**

**Phone Number:**

**Email Address:**

**Project Name:**

**Property Location:**

**Township:**

**Lot & Concession:**

**UTM Coordinates:** Easting (X)  Northing (Y)

**Brief Description of Undertaking**

Have you previously contacted someone at MNR for information on this site?  Yes  No

If yes, when and who?

Provide a map of accurate scale to illustrate footprint/study area of the proposed activity in relation to the surrounding landscape (e.g. property boundaries, roads, waterbodies, natural features, towns, transmission corridors, and other human landmarks). Use of aerial photography is strongly encouraged. Include scale, north arrow and legend.

**ATTACHMENTS** - I have attached a:

Picture       Map       Other

**REQUEST** - I would like to request the following information for the property identified above:

<input checked="" type="checkbox"/> Fish Dot Information (fish and other aquatic species found in a particular area of a watercourse)	<input checked="" type="checkbox"/> ANSI Mapping (hard copy) and/or check-sheet - please provide name of ANSI if known
<input checked="" type="checkbox"/> Wetland Mapping (hard copy) and/or evaluation and data record - please provide name of wetland if known	<input checked="" type="checkbox"/> Species at Risk
	<input checked="" type="checkbox"/> Other <input type="text" value="other rare species (L1 to L3), any additional fisheries, terrestrial, and vegetation ecological communities, Ecological Land Classification (ELC), and GIS data."/>

Please forward the completed form to: [esa.aurora@ontario.ca](mailto:esa.aurora@ontario.ca)

Or send by mail:  
**Aurora District, Ministry of Natural Resources**  
 50 Bloomington Rd Aurora, ON L4G 0L8

July 4, 2017

Sent via e-mail: Ben.Keen@ontario.ca

Ben Keen  
Management Biologist  
Ministry of Natural Resources and Forestry - Aurora District  
50 Bloomington Rd  
Aurora, ON L4G 0L8

**Re: Request for Background Information, 407 Transitway from West of Winston Churchill Boulevard in Peel Region to West of Brant Street in Halton Region, Planning and Preliminary Design Study. Assignment Number 2016-E-0038.**

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Dear Mr. Keen,

In accordance with the *MTO/DFO/MNRF Protocol for Protecting Fish and Fish Habitat on Provincial Highway Undertakings - Version 3, 2016*, this letter is to provide notification to the Ministry of Natural Resources and Forestry (MNRF) that the Ministry of Transportation is commencing the Planning Phase, Environmental Assessment, and Preliminary Design of the 407 Transitway located within the Regional Municipalities of Peel and Halton in addition to requesting background natural heritage data for this area.

The 407 Transitway study extends from west of Winston Churchill Boulevard in Peel Region to west of Brant Street in Halton Region (see attached mapping). The project includes 35 km of runningway and stations. The transitway will be designed to support the initial busway service with provisions for future conversion to light rail transit (LRT). An alignment and station alternatives have not been selected, therefore, for the purposes of this data request, we are requesting information for natural heritage features which occur within 500 m north and south of the 407 ETR centerline. A map is included with this submission which outlines the study area.

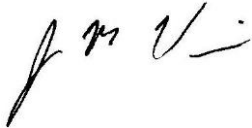
In addition to the standard Aurora District data request form, which is included with this request, please see the table below (and attached map) for a list of the watercourses and waterbodies within the 407 Transitway study limits and their locations. Watercourses within the study area include tributaries of Rambo Creek, Roseland Creek, Tuck Creek, Shoreacres Creek, Appleby Creek, Sheldon Creek, Bronte Creek, Fourteen Mile Creek, McCraney Creek, Sixteen Mile Creek, and Joshua's Creek. All watercourses are within the jurisdiction of Conservation Halton. The attached map identifies all watercourses within the study area, which are numbered in sequential order from west to east.

As per Step 2 of the *MTO/DFO/MNR Fisheries Protocol*, we request that MNRF complete the attached table that includes information on fish community and habitat.

We look forward to MNRF's response to our request within **30 working days**, as specified in the Protocol.

Sincerely,

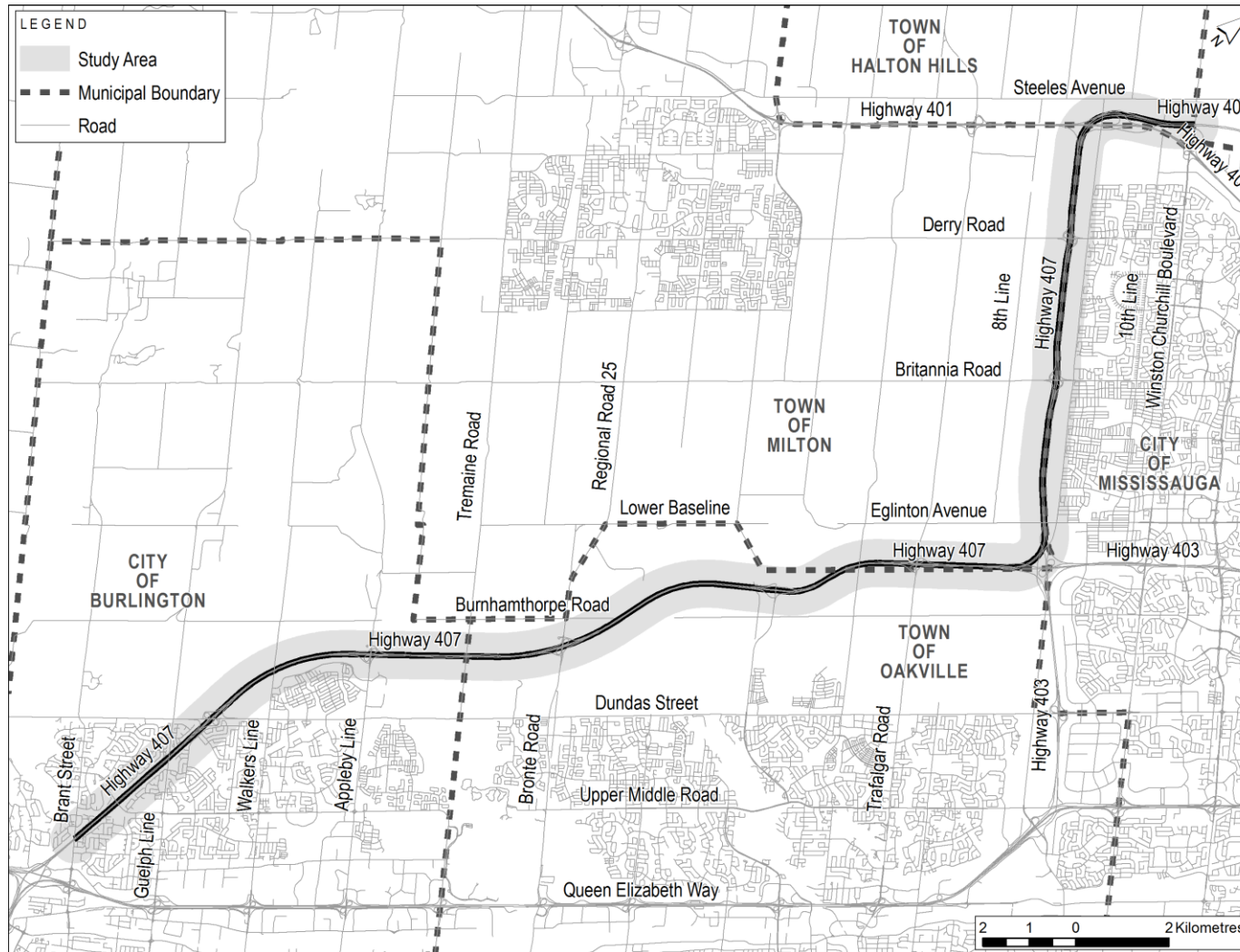
**LGL Limited**  
**environmental research associates**

A handwritten signature in black ink, appearing to read 'J M Venier', is positioned below the company name.

**Judson M. Venier, M.Sc.**  
**Fisheries Biologist**

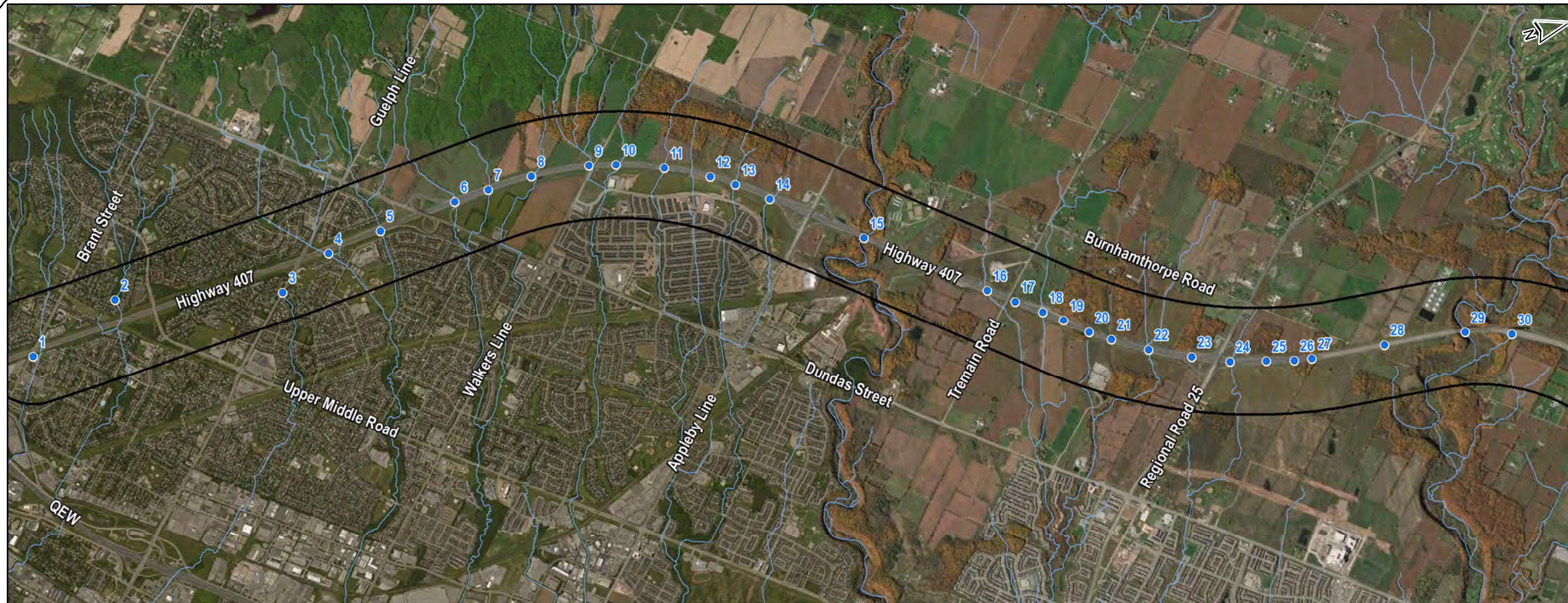
Attachments: Aurora MNRF information request form, table of watercourses, maps of study area

cc: Holly Kerslake, Parsons  
Sowel Kang, LGL Limited






**MAP OF THE STUDY AREA**


**407 Transitway from West of Winston Churchill Boulevard to West of Brant Street**



**LEGEND**

-  Highway 407 500m Buffer
-  Watercourse
-  Watercourse Crossing

Data Sources: LGL Limited, Ontario Ministry of Natural Resources and Forestry (LIO).



**WATERCOURSE CROSSINGS**



<b>Project:</b> TA8733	<b>Figure:</b> 1
<b>Date:</b> June, 2017	<b>Prepared By:</b> MWF
<b>Scale:</b> 1 : 45,000	<b>Checked By:</b> SLL

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
Site 1: Rambo Creek 17 T 594774 mE 4800120.00 mN						
Site 2: Tributary of Rambo Creek 17T 594468 mE 4801021 mN						
Site 3: Roseland Creek 17T 594842 mE 4802580 mN						
Site 4: Tributary of Tuck Creek 17T 594603 mE 4803103 mN						
Site 5: Tuck Creek 17T 594537 mE 4803636 mN						
Site 6: Tributary of Shoreacres Creek 17T 594464 mE 4804396 mN						
Site 7: Tributary of Shoreacres Creek 17T 594443 mE 4804734 mN						
Site 8: Tributary of Shoreacres Creek 17T 594433 mE 4805167 mN						
Site 9: Appleby Creek 17T 594485 mE 4805723 mN						
Site 10: Tributary of Appleby Creek 17T 594548 mE 4805971 mN						
Site 11: Tributary of Sheldon Creek 17T 594705 mE 4806407 mN						
Site 12: Tributary of Sheldon Creek 17T 594907 mE 4806806 mN						
Site 13: Tributary of Sheldon Creek 17T 595044 mE 4807017 mN						



Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
Site 14: Tributary of Sheldon Creek 17T 595267 mE 4807294 mN						
Site 15: Bronte Creek 17T 595872 mE 4808053 mN						
Site 16: Tributary of Fourteen Mile Creek 17T 596677 mE 4809048 mN						
Site 17: Tributary of Fourteen Mile Creek 17T 596856 mE 4809275 mN						
Site 18: Tributary of Fourteen Mile Creek 17T 597023 mE 4809502 mN						
Site 19: Tributary of Fourteen Mile Creek 17T 597152 mE 4809671 mN						
Site 20: Tributary of Fourteen Mile Creek 17T 597329 mE 4809873 mN						
Site 21: Tributary of Fourteen Mile Creek 17T 597453 mE 4810057 mN						
Site 22: Fourteen Mile Creek 17T 597646 mE 4810373 mN						
Site 23: Tributary of Fourteen Mile Creek 17T 597823 mE 4810750 mN						
Site 24: Tributary of Fourteen Mile Creek 17T 597968 mE 4811087 mN						
Site 25: Tributary of Fourteen Mile Creek 17T 598059 mE 4811423 mN						
Site 26: Tributary of Fourteen Mile Creek 17T 598127 mE 4811681 mN						

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
Site 27: Tributary of McCraney Creek 17T 598156 mE 4811846 mN						
Site 28: Tributary of Sixteen Mile Creek 17T 598221 mE 4812550 mN						
Site 29: Sixteen Mile Creek 17T 598317 mE 4813322 mN						
Site 30: Tributary of Sixteen Mile Creek 17T 598459 mE 4813745 mN						
Site 31: Tributary of East Sixteen Mile Creek 17T 599612 mE 4815250 mN						
Site 32: Tributary of East Sixteen Mile Creek 17T 599711 mE 4815360 mN						
Site 33: Tributary of East Sixteen Mile Creek 17T 599915 mE 4815508 mN						
Site 34: Tributary of East Sixteen Mile Creek 17T 600082 mE 4815757 mN						
Site 35: Tributary of East Sixteen Mile Creek 17T 600355 mE 4816860 mN						
Site 36: Tributary of Joshua's Creek 17T 601110 mE 4817950 mN						
Site 37: Tributary of Joshua's Creek 17T 601408 mE 4818313 mN						
Site 38: Tributary of Joshua's Creek 17T 601518 mE 4818446 mN						
Site 39: Tributary of Joshua's Creek 17T 601840 mE 4818832 mN						

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
Site 40: Tributary of Joshua's Creek 17T 602021 mE 4819053 mN						
Site 41: Tributary of Joshua's Creek 17T 602432 mE 4819528 mN						
Site 42: Tributary of East Sixteen Mile Creek 17T 600961 mE 4821785 mN						
Site 43: Tributary of East Sixteen Mile Creek 17T 599490 mE 4823263 mN						
Site 44: Tributary of East Sixteen Mile Creek 17T 597084 mE 4825561 mN						
Site 45: Tributary of East Sixteen Mile Creek 17T 595911 mE 4826650 mN						
Site 46: Tributary of East Sixteen Mile Creek 17T 596064 mE 4827097 mN						
Site 47: Tributary of East Sixteen Mile Creek 17T 596334 mE 4827475 mN						

**NOTE:**

- The applicant shall complete the waterbody name and location (column 1) and attach a Google Earth map or MTO project map identifying each waterbody and submit to MNRF.
- MNRF is required as per Step 2 of the Fisheries Protocol to provide the applicant with the information outlined in the table above (columns 2-7) within **30 working days**.

September 6, 2017

Stephanie Lillie  
LGL Limited  
22 Fisher Street  
King City, ON L7B 1A6  
(905) 833-1244  
stephanielillie@lgl.com

**Re: 407 Transitway from West of Winston Churchill Blvd. to West of Brant St.**

Dear Stephanie Lillie,

In your email dated July 4, 2017 you submitted an information request regarding the above location.

Species at risk recorded in this vicinity include Silver Shiner (threatened), American Eel (endangered), Bank Swallow (threatened), Jefferson Salamander (endangered), and Redside Dace (endangered). There is potential for Monarch (special concern), Bitternut (endangered), Barn Swallow (threatened), Canada Warbler (special concern), Chimney Swift (threatened), Bobolink (threatened), Eastern Meadowlark (threatened), and Snapping Turtle (special concern). There is also potential for bats (i.e., Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, Tri-colored Bat) in cavities or leaf clusters.

The species listed above may receive protection under the *Endangered Species Act, 2007* (ESA) and thus, an approval from MNRF may be required if the work you are proposing could cause harm to these species or their habitats. If the Species at Risk in Ontario List is amended, additional species may be listed and protected under the ESA or the status and protection levels of currently listed species may change.

We require more detailed information on the proposed project in order to assess the impacts of the works on Species at Risk. When project details have been determined, please fill out an Information Gathering Form (IGF) for any *threatened* or *endangered* species listed in the provided letter and submit it to our office (to [ESA.Aurora@ontario.ca](mailto:ESA.Aurora@ontario.ca)). The IGF can be found [here](#) (along with its associated [guide](#)). Please include detailed descriptions of the undertakings such as proposed timing and phasing of the project and details on what is required at each phase.

All sections and tables should be filled out in their entirety – incomplete forms will be returned and may delay the review process. Any applicable supplemental information that will assist with the review process should also be submitted with the IGF (e.g. field survey results, site plan/drawings, ELC mapping, etc.). Please note that forms are reviewed in the order in which they are received by MNRF and we will contact you with our response once the review is complete.

Absence of information provided by MNRF for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. Approval from MNRF may be required if work you are proposing could cause harm to any species that receive protection under the *Endangered Species Act 2007*.

Species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any species at risk to our office. This will assist with updating our database and facilitate early consultation regarding your project.

Additional natural heritage information including information on wetlands and Areas of Natural and Scientific Interest (ANSIs) can be obtained through Land Information Ontario (LIO).

If you have any questions or comments, please do not hesitate to contact [ESA.aurora@ontario.ca](mailto:ESA.aurora@ontario.ca) or [ben.keen@ontario.ca](mailto:ben.keen@ontario.ca).

Sincerely,

A handwritten signature in black ink, appearing to be 'BK', followed by a period.

Ben Keen, Management Biologist, Ontario Ministry of Natural Resources and Forestry,  
Aurora District

**407 Transitway from West of Winston Churchill Boulevard to West of Brant Street**

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRFS fisheries management objectives, if applicable	MNRFS interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
Site 1: Rambo Creek 17 T 594774 mE 4800120.00 mN	Warm	Unknown			Low	July 1 – March 31
Site 2: Tributary of Rambo Creek 17T 594468 mE 4801021 mN	Warm	Unknown			Low	July 1 – March 31
Site 3: Roseland Creek 17T 594842 mE 4802580 mN	Warm	Unknown			Low	July 1 – March 31
Site 4: Tributary of Tuck Creek 17T 594603 mE 4803103 mN	Warm	Unknown	Creek chub, eastern blacknose dace, fathead minnow, goldfish, white sucker		Low	July 1 – March 31
Site 5: Tuck Creek 17T 594537 mE 4803636 mN	Warm	Unknown	Creek chub, eastern blacknose dace, fathead minnow, goldfish, white sucker		Low	July 1 – March 31
Site 6: Tributary of Shoreacres Creek 17T 594464 mE 4804396 mN	Warm	Unknown			Low	July 1 – March 31
Site 7: Tributary of Shoreacres Creek 17T 594443 mE 4804734 mN	Warm	Unknown			Low	July 1 – March 31
Site 8: Tributary of Shoreacres Creek 17T 594433 mE 4805167 mN	Warm	Unknown			Low	July 1 – March 31
Site 9: Appleby Creek 17T 594485 mE 4805723 mN	Warm	Unknown	Creek chub, blacknose dace, fathead minnow, goldfish, green sunfish, largemouth bass, pumpkinseed, white sucker		Low	July 1 – March 31

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
Site 10: Tributary of Appleby Creek 17T 594548 mE 4805971 mN	Warm	Unknown	Creek chub, blacknose dace, fathead minnow, goldfish, green sunfish, largemouth bass, pumpkinseed, white sucker		Low	July 1 – March 31
Site 11: Tributary of Sheldon Creek 17T 594705 mE 4806407 mN	Unknown	Unknown				
Site 12: Tributary of Sheldon Creek 17T 594907 mE 4806806 mN	Unknown	Unknown				
Site 13: Tributary of Sheldon Creek 17T 595044 mE 4807017 mN	Unknown	Unknown				
Site 14: Tributary of Sheldon Creek 17T 595267 mE 4807294 mN	Unknown	Unknown				
Site 15: Bronte Creek 17T 595872 mE 4808053 mN	Warm	Unknown	Common Shiner, hornyhead chub, river chub, spottfin shiner, fantail darter, johnny darter, tadpole madtom, eastern blacknose dace, brown trout, fathead minnow, white perch, pumpkinseed, mimic shiner, white sucker, rock bass, rainbow smelt, rosyface shiner, green sunfish, sea lamprey, common carp, black crappie, largemouth bass, smallmouth bass, cisco, pearl dace, trout-perch, threespine stickleback, striped shiner, emerald		High (Silver Shiner and American Eel habitat and at a minimum it's at least a seasonal migratory corridor for L. Ontario salmonids)	July 1 – September 15 (Given presence of Silver Shiner and Chinook Salmon)

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
			shiner, river redhorse, American Eel, logperch, yellow perch, spottail shiner, bluntnose minnow, slimy sculpin, chinook salmon, golden shiner, brook trout, rainbow darter, central mudminnow, northern pike, longnose dace, silver shiner, rainbow trout, bluegill, alewife, stonecat, round goby, creek chub, brook stickleback, brown bullhead, northern redbelly dace, northern hog sucker, striped bass			
Site 16: Tributary of Fourteen Mile Creek 17T 596677 mE 4809048 mN	Cold	Unknown	Goldfish, creek chub, brook stickleback, eastern blacknose dace, rainbow darter, brown bullhead, redbelly dace, pumpkinseed, brassy minnow, johnny darter, northern redbelly dace, longnose dace, white sucker, fantail darter, fathead minnow, bluntnose minnow, common shiner, largemouth bass		Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 17: Tributary of Fourteen Mile Creek 17T 596856 mE 4809275 mN	Cold	Unknown	Eastern blacknose dace, rainbow darter, brown bullhead, redbelly dace,		Moderate (Upstream of RSD)	July 1 – September 15 (Flexible on this



Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
			pumpkinseed, brassy minnow, johnny darter, northern redbelly dace, longnose dace, white sucker, fantail darter, fathead minnow, bluntnose minnow, common shiner, largemouth bass, creek chub, goldfish, brook stickleback		occupied habitat)	window depending on type of works proposed around this crossing)
Site 18: Tributary of Fourteen Mile Creek 17T 597023 mE 4809502 mN	Cold	Unknown	Rainbow darter, brown bullhead, reside dace, pumpkinseed, brassy minnow, johnny darter, northern redbelly dace, longnose dace, white sucker, fantail darter, fathead minnow, bluntnose minnow, common shiner, largemouth bass, eastern blacknose dace, brook stickleback, creek chub, goldfish		Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 19: Tributary of Fourteen Mile Creek 17T 597152 mE 4809671 mN	Unknown	Unknown			Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
Site 20: Tributary of Fourteen Mile Creek 17T 597329 mE 4809873 mN	Cold	Unknown	Rainbow darter, brown bullhead, reside dace, pumpkinseed, brassy minnow, johnny darter, northern redbelly dace, longnose dace, white sucker, fantail darter, fathead minnow, bluntnose minnow, common shiner, largemouth bass, eastern blacknose dace, brook stickleback, creek chub, goldfish		Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 21: Tributary of Fourteen Mile Creek 17T 597453 mE 4810057 mN	Unknown	Unknown			Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 22: Fourteen Mile Creek 17T 597646 mE 4810373 mN	Cold	Unknown	Rainbow darter, brown bullhead, reside dace, pumpkinseed, brassy minnow, johnny darter, northern redbelly dace, longnose dace, white sucker, fantail darter, fathead minnow, bluntnose minnow, common shiner, largemouth bass, eastern blacknose		Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRFS fisheries management objectives, if applicable	MNRFS interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
			dace, brook stickleback, creek chub, goldfish			
Site 23: Tributary of Fourteen Mile Creek 17T 597823 mE 4810750 mN	Cold	Unknown			Moderate (Upstream of RSD occupied habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 24: Tributary of Fourteen Mile Creek 17T 597968 mE 4811087 mN	Cold	Unknown	Brook stickleback, common shiner, creek chub, eastern blacknose dace, fantail darter, fathead minnow, goldfish		Moderate (Upstream of RSD recovery habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 25: Tributary of Fourteen Mile Creek 17T 598059 mE 4811423 mN	Cold	Unknown			Moderate (Upstream of RSD recovery habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
Site 26: Tributary of Fourteen Mile Creek 17T 598127 mE 4811681 mN	Unknown	Unknown			Moderate (Upstream of RSD recovery habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 27: Tributary of McCraney Creek 17T 598156 mE 4811846 mN	Warm	Unknown	Creek chub, eastern blacknose dace, fathead minnow		Low	July 1 – March 31
Site 28: Tributary of Sixteen Mile Creek 17T 598221 mE 4812550 mN	Cool	Unknown			Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15 (Flexible on this window depending on type of works proposed around this crossing)
Site 29: Sixteen Mile Creek 17T 598317 mE 4813322 mN	Cool	Unknown	Longnose dace, brown bullhead, rock bass, johnny darter, largemouth bass, brook trout, brown trout, stonecat, rainbow darter, eastern blacknose dace, common shiner, redbreast dace?, pumpkinseed, common carp, white sucker, smallmouth bass, johnny		High (Silver Shiner occupied)	July 1 – September 15

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
			<p>darther, brassy minnow, emerald shiner, northern hog sucker, spottail shiner, bluntnose minnow, fathead minnow, northern redbelly dace, sea lamprey, river chub, fantail darter, golden redhorse, alewife, brook stickleback, rosyface shiner, golden shiner, creek chubFor other species, see Conservation Halton 2011 Sixteen Mile Creek Supplemental Monitoring Report, 2011.</p>			
<p>Site 30: Tributary of Sixteen Mile Creek            17T 598459 mE 4813745 mN</p>	Cool	Unknown	Same as 29		Low-Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15
<p>Site 31: Tributary of East Sixteen Mile Creek            17T 599612 mE 4815250 mN</p>	Cool	Unknown	Same as 29		Low-Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15
<p>Site 32: Tributary of East Sixteen Mile Creek            17T 599711 mE 4815360 mN</p>	Cool	Unknown	Same as 29		Low-Moderate (upstream of occupied	July 1 – September 15

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
					Silver Shiner habitat)	
Site 33: Tributary of East Sixteen Mile Creek 17T 599915 mE 4815508 mN	Cool	Unknown	Same as 29		Low-Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15
Site 34: Tributary of East Sixteen Mile Creek 17T 600082 mE 4815757 mN	Cool	Unknown	Same as 29		Low-Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15
Site 35: Tributary of East Sixteen Mile Creek 17T 600355 mE 4816860 mN	Cool	Unknown	Same as 29		Low-Moderate (upstream of occupied Silver Shiner habitat)	July 1 – September 15
Site 36: Tributary of Joshua's Creek 17T 601110 mE 4817950 mN	Warm	Unknown	Creek chub, eastern blacknose dace, fathead minnow, white sucker		Low	July 1 – March 31
Site 37: Tributary of Joshua's Creek 17T 601408 mE 4818313 mN	Warm	Unknown	Same as 36		Low	July 1 – March 31
Site 38: Tributary of Joshua's Creek 17T 601518 mE 4818446 mN	Warm	Unknown	Same as 36		Low	July 1 – March 31
Site 39: Tributary of Joshua's Creek 17T 601840 mE 4818832 mN	Warm	Unknown	Same as 36		Low	July 1 – March 31

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
Site 40: Tributary of Joshua's Creek 17T 602021 mE 4819053 mN	Warm	Unknown	Same as 36		Low	July 1 – March 31
Site 41: Tributary of Joshua's Creek 17T 602432 mE 4819528 mN	Warm	Unknown	Same as 36		Low	July 1 – March 31
Site 42: Tributary of East Sixteen Mile Creek 17T 600961 mE 4821785 mN	Warm	Unknown	Fathead minnow, bluntnose minnow, river chub, northern hog sucker common carp, creek chub, smallmouth bass, mimic shiner, common shiner, brown bullhead, yellow bullhead, rock bass, goldfish, emerald shiner, northern pike, fantail darter, brook stickleback, largemouth bass, eastern blacknose dace, johnny darter, golden shiner, rosyface shiner, bluegill, pumpkinseed, black crappie, white sucker		Low-Moderate (upstream of occupied Silver Shiner habitat)	July 1 – March 31
Site 43: Tributary of East Sixteen Mile Creek 17T 599490 mE 4823263 mN	Warm	Unknown	Same as 42		Low-Moderate (upstream of occupied Silver Shiner habitat)	July 1 – March 31
Site 44: Tributary of East Sixteen Mile Creek 17T 597084 mE 4825561 mN	Warm	Unknown	Same as 42		Low-Moderate (upstream of occupied Silver Shiner)	July 1 – March 31

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
					habitat)	
Site 45: Tributary of East Sixteen Mile Creek 17T 595911 mE 4826650 mN	Warm	Unknown	Same as 42		Low-Moderate (upstream of occupied Silver Shiner habitat)	July 1 – March 31
Site 46: Tributary of East Sixteen Mile Creek 17T 596064 mE 4827097 mN	Warm	Unknown	Same as 42		Low-Moderate (upstream of occupied Silver Shiner habitat)	July 1 – March 31
Site 47: Tributary of East Sixteen Mile Creek 17T 596334 mE 4827475 mN	Warm	Unknown	Same as 42		Low-Moderate (upstream of occupied Silver Shiner habitat)	July 1 – March 31

**NOTE:**

- The applicant shall complete the waterbody name and location (column 1) and attach a Google Earth map or MTO project map identifying each waterbody and submit to MNRF.
- MNRF is required as per Step 2 of the Fisheries Protocol to provide the applicant with the information outlined in the table above (columns 2-7) within **30 working days**.



## Sowel Kang

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**From:** Heaton, Mark (MNRF) <mark.heaton@ontario.ca>  
**Sent:** August 19, 2019 3:05 PM  
**To:** Judson Venier  
**Cc:** Keen, Ben (MNRF); Sowel Kang  
**Subject:** RE: MNRF Information Request- 407 Transitway Brant Street to Winston Churchill Boulevard  
**Attachments:** 407 Transitway Hurontario to WC.docx

Hello Judson,

Here you go....fish community table attached.

Natural heritage information is available to NHIC portal. Levi Creek Wetland Complex is in vicinity of 407

Regards

Mark Heaton  
OMNRF Aurora

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**From:** Judson Venier <jvenier@lgl.ca>  
**Sent:** August 19, 2019 2:17 PM  
**To:** Heaton, Mark (MNRF) <mark.heaton@ontario.ca>  
**Cc:** Keen, Ben (MNRF) <Ben.Keen@ontario.ca>; Sowel Kang <skang@lgl.ca>  
**Subject:** FW: MNRF Information Request- 407 Transitway Brant Street to Winston Churchill Boulevard

Hi Mark,

Please find attached a MNRF Data Request (part of the MTO/DFO/MNRF Fisheries Protocol), the Aurora District Info Request Form and a watercourse/site map for an additional section of the 407 Transitway project from Brant Street to Hurontario Street. As you can see from below, the original project did not include the section east of Winston Churchill to Hurontario, which was added later. For this additional area, a data request was never sent. Hence this request now. It's all in the Credit River watershed, so hopefully it's easy. We need the information you can provide for the fisheries reporting, as per the protocol. The watercourse sensitivity is particularly important.

If you have any questions, please let me know.

Thank, Mark. I hope all is well.

Judson

Judson Venier  
Senior Fisheries Biologist  
LGL Limited  
22 Fisher Street, P.O. Box 280  
King City, ON L7B 1A6  
905-833-1244  
[jvenier@lgl.ca](mailto:jvenier@lgl.ca)

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**From:** stephanie Lillie <[StephanieLillie@lgl.ca](mailto:StephanieLillie@lgl.ca)>  
**Sent:** July-04-17 10:26 AM  
**To:** [esa.aurora@ontario.ca](mailto:esa.aurora@ontario.ca)  
**Cc:** [Ben.Keen@ontario.ca](mailto:Ben.Keen@ontario.ca); Judson Venier <[jvenier@lgl.ca](mailto:jvenier@lgl.ca)>; Sowel Kang <[skang@lgl.ca](mailto:skang@lgl.ca)>; [holly.kerslake@parsons.com](mailto:holly.kerslake@parsons.com)  
**Subject:** MNRF Information Request- 407 Transitway Brant Street to Winston Churchill Boulevard

Hi Ben,

Please see attached, an MNRF Data request (in accordance with the MTO fisheries Protocol), the standard Aurora Distract information request form, and a labelled watercourse figure for the 407 Transitway from Brant Street to Winston Churchill Boulevard located within the Regional Municipalities of Peel and Halton.

Please let myself or Judson Venier (cc'd) know if you have any questions regarding this request.

Thanks,  
Stephanie

**Stephanie Lillie B.Sc.**  
Fisheries Biologist, LGL Limited  
22 Fisher Street, P.O. Box 280 King City, ON L7B 1A6  
Tel: (905) 833-1244 E-mail: [stephanielillie@lgl.com](mailto:stephanielillie@lgl.com)

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
Site 49: Mullet Creek 17 T 598909 mE 4828150 mN	Warmwater		Warmwater baitfish	See Credit River Fisheries Management Plan for management designations	low	July 1- March 31
Site 50: Levi Creek 17T 600215 mE 4830441 mN	Coolwater		Rainbow and brown trout present	See Credit River Fisheries Management Plan for management designations	moderate	July 1- March 31
Site 51: Credit River 17T 601074 mE 4831651 mN	Coolwater	Spawning habitat present, migratory salmonid corridor	See Credit River Fisheries Management Plan for fish community information	See Credit River Fisheries Management Plan for management designations	high	July 1 to Sept 15
Sites 52-54: Tributary of Credit River 17T 601340 mE 4832061 mN	Warmwater		NA		low	July 1- March 31
Site 55: Tributary of Credit River 17T 602127 mE 4832657 mN	Warmwater		NA		low	July 1- March 31
Site 56: Tributary of Fletcher's Creek 17T 602329 mE 4833109 mN	Warmwater		NA		low	July 1- March 31
Site 57: Tributary of Fletcher's Creek 17T 602952 mE 4833539 mN	Warmwater		NA		low	July 1- March 31
Site 58: Fletcher's Creek 17T 603066 mE 4833695 mN	Warmwater	SAR Redside Dace present	See Credit River Fisheries Management Plan for fish community information	See Credit River Fisheries Management Plan for management designations	high	July 1 to Sept 15

Waterbody Name and location (UTM)	Watercourse classification (i.e., warmwater, coldwater)	Habitat information/ locations (fish passage barriers, known spawning habitats etc.)	Historical data on fish species present, including whether the subject waterbody(s) are considered to support any vulnerable, threatened or endangered aquatic species	MNRF fisheries management objectives, if applicable	MNRF interpretation of fish and fish habitat sensitivity (scale of high, moderate, low or unknown as per DFO's Risk Management Framework)	In-water timing windows for construction
Site 59: Tributary of Fletcher's Creek 17T 603378 mE 4833736 mN	Warmwater		Large colony of chimney crayfish located downstream (SWH)		moderate	July 1- March 31

## Sowel Kang

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**Subject:** RE: Feedback - MTO 407 Transitway (Brant St. to Hurontario St.) Technical Resource Group Meeting #1

**From:** Kowalyk, Bohdan (MNRF) <[bohdan.kowalyk@ontario.ca](mailto:bohdan.kowalyk@ontario.ca)>

**Sent:** November 8, 2018 4:47 PM

**To:** Kerslake, Holly <[Holly.Kerslake@parsons.com](mailto:Holly.Kerslake@parsons.com)>

**Cc:** DeRose, Graham (MTO) <[Graham.DeRose@ontario.ca](mailto:Graham.DeRose@ontario.ca)>; Sarris, Larry (MTO) <[Larry.Sarris@ontario.ca](mailto:Larry.Sarris@ontario.ca)>; Bishop, Chris <[Chris.Bishop@parsons.com](mailto:Chris.Bishop@parsons.com)>; Leung, Winnie <[Winnie.Leung@parsons.com](mailto:Winnie.Leung@parsons.com)>; Garron, Gus <[Gus.Garron@parsons.com](mailto:Gus.Garron@parsons.com)>; Sowel Kang <[skang@lgl.ca](mailto:skang@lgl.ca)>

**Subject:** RE: Feedback - MTO 407 Transitway (Brant St. to Hurontario St.) Technical Resource Group Meeting #1

Hello Holly,

Here are some initial comments:

1. There is habitat of Silver Shiner (threatened) at the proposed crossings of Bronte Creek and Sixteen Mile Creek.
2. There is occupied habitat of Redside Dace (endangered) in Fourteen Mile Creek downstream from Tremaine Road. Therefore, in the Tremaine Road vicinity there is some preference for the northwestern alignment option 1 as it may minimize potential impacts on Redside Dace habitat compared to the southeastern alignment option 2.
3. There is occupied habitat of Redside Dace in the proposed crossing of Fletcher's Creek and recovery habitat of Redside Dace in the proposed crossing of Levi's Creek, both being tributaries of the Credit River.
4. Habitat of American Eel (endangered) may occur in the watercourses mentioned above.
5. The proposed route may affect the provincially significant Churchville-Norval Wetland Complex to the northeast of the Credit River.
6. There are significant woodlands along the main (Bronte Creek, Sixteen Mile Creek and Credit River) valleys as well as: northwest of Highway 407 between the CNR track and Tremaine Road; southeast of Highway 407 east of Bronte Road (Regional Road 25) at the site of a potential maintenance storage yard; between Bronte Creek and Neyagawa Boulevard; between Sixth Line and Trafalgar Road; east of Trafalgar Road; possibly between Highway 407 and Ninth Line; at the site of the Derry Road Station Option B; and east of Mavis Road.
7. All treed areas should be investigated for potential habitat of endangered bats and for the presence of endangered Butternut trees of all sizes, including seedlings.

Endangered and threatened species and their habitats are protected by the *Endangered Species Act*. Appropriate approvals may be required if the work you will be proposing could cause harm to these species and their habitats.

Absence of information provided by MNRF does not categorically mean the absence of sensitive species or features. As you complete fieldwork, please report all information related to natural heritage to our office. This will facilitate consultation regarding your project.

If there are any questions, please let me know.

Regards,

Bohdan Kowalyk, R.P.F.

District Planner, Aurora District, Ontario Ministry of Natural Resources and Forestry  
50 Bloomington Road, Aurora, Ontario L4G 0L8  
Phone: 905-713-7387; Email: [Bohdan.Kowalyk@Ontario.ca](mailto:Bohdan.Kowalyk@Ontario.ca)

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**From:** Kerslake, Holly [<mailto:Holly.Kerslake@parsons.com>]

**Sent:** November-08-18 12:04 PM

**To:** [brennick@hrca.on.ca](mailto:brennick@hrca.on.ca); [Liam.Murray@cvc.ca](mailto:Liam.Murray@cvc.ca); [pkelly@oakville.ca](mailto:pkelly@oakville.ca); Strong, Steven (MNRF); Scott Johnston; [curt.benson@halton.ca](mailto:curt.benson@halton.ca); [kirk.biggar@oakville.ca](mailto:kirk.biggar@oakville.ca); Webb, Tim (MECP); Martins, Frank (MTO); Grace, Patrick (IO); Michael Vallins; [greg.gowan@hydroone.com](mailto:greg.gowan@hydroone.com); [martin.powell@mississauga.ca](mailto:martin.powell@mississauga.ca); [Susan.Tanabe@mississauga.ca](mailto:Susan.Tanabe@mississauga.ca); Matt Howatt; [cwhite@407etr.com](mailto:cwhite@407etr.com); [Malcolm.Mackay@Metrolinx.com](mailto:Malcolm.Mackay@Metrolinx.com); Alice Ho; [Hank.Wong@brampton.ca](mailto:Hank.Wong@brampton.ca); Kowalyk, Bohdan (MNRF); Roban Kupenthirarajan; [lisa.deangelis@halton.ca](mailto:lisa.deangelis@halton.ca); Abraham, Ernest (IO); [Tony.DAlessandro@milton.ca](mailto:Tony.DAlessandro@milton.ca); O'Hara, Charles (MMA); Wang, Hank; Vir, Aanchal; [jennifer\\_benedict@cpr.ca](mailto:jennifer_benedict@cpr.ca); Ivanic, Erika (MMAH); Gonzalez, Alejandra (MMA/MHO); Melissa Ricci; Mohammad, Ghazanfar; [krista.garcia@peelregion.ca](mailto:krista.garcia@peelregion.ca); Romas Juknevičius; [David.Szwarc@peelregion.ca](mailto:David.Szwarc@peelregion.ca); Turnbull, Jen (OMAFRA); [liz.panacci@peelregion.ca](mailto:liz.panacci@peelregion.ca); [cary.clark@burlington.ca](mailto:cary.clark@burlington.ca); Jeff Booker; Allan Ortlieb; Desautels, Solange (MECP); [rbacquie@407etr.com](mailto:rbacquie@407etr.com); Dagssie, Yves (MECP); [Abdul.Shaikh@mississauga.ca](mailto:Abdul.Shaikh@mississauga.ca); [Barb.Koopmans@milton.ca](mailto:Barb.Koopmans@milton.ca); Lyons, Darryl (MMAH); Dundas, Peter (Peel Regional Paramedic Services); Meghan Bratt; Williams, Andrea (MTCS); [frank.dale@peelregion.ca](mailto:frank.dale@peelregion.ca); [jane.clohecy@oakville.ca](mailto:jane.clohecy@oakville.ca); [colm.lynn@burlington.ca](mailto:colm.lynn@burlington.ca); [Kaylan.Edgcumbe@burlington.ca](mailto:Kaylan.Edgcumbe@burlington.ca); [kwab.ako-adjei@burlington.ca](mailto:kwab.ako-adjei@burlington.ca); David Wong; [dmrkela@407etr.com](mailto:dmrkela@407etr.com); [Sherwin.Gumbs@Metrolinx.com](mailto:Sherwin.Gumbs@Metrolinx.com); Andrea; [Jason.Ryan@metrolinx.com](mailto:Jason.Ryan@metrolinx.com); [Jill.Hogan@milton.ca](mailto:Jill.Hogan@milton.ca); Kuczynski, Roman; [Mel.Kayama@mississauga.ca](mailto:Mel.Kayama@mississauga.ca); Kissel, Alex (MNRF); Helfinger, Michael (MEDJCT); [steveb@haltonhills.ca](mailto:steveb@haltonhills.ca); Minkin, Dan (MTCS); [rick.schatz@HydroOne.com](mailto:rick.schatz@HydroOne.com); [lane.kegel@HydroOne.com](mailto:lane.kegel@HydroOne.com); [tami.kitay@burlington.ca](mailto:tami.kitay@burlington.ca); Sowel Kang; [Becca.Nagorsky@metrolinx.com](mailto:Becca.Nagorsky@metrolinx.com); Poad, Karyn; [gordon.hui@peelregion.ca](mailto:gordon.hui@peelregion.ca); [r.minnesconsulting@gmail.com](mailto:r.minnesconsulting@gmail.com); [sabbir.saiyed@peelregion.ca](mailto:sabbir.saiyed@peelregion.ca); [andrea.smith@burlington.ca](mailto:andrea.smith@burlington.ca); [paul.cripps@milton.ca](mailto:paul.cripps@milton.ca); [bveale@hrca.on.ca](mailto:bveale@hrca.on.ca); [scott.hamilton@burlington.ca](mailto:scott.hamilton@burlington.ca); Knuckle, Mark; Bernard Au; Motala, Imran; Fantin, Steven; Parkes, Brian; Weller, Jennie (MECP); Gibson, Brian; Nieuwenhuysen, Bob; [Megan.Lovell@milton.ca](mailto:Megan.Lovell@milton.ca); Van de Valk, Jackie (OMAFRA); Thomsen, Jeanne; [David.Twigg@milton.ca](mailto:David.Twigg@milton.ca); Steve Burke; Mahmood, Tareq; Wedderburn, Duran; Bennington, Dan; Robert Stribbell; Jamroz, Damian; Van Boxmeer, Kyle; Kellie McCormack; Zubair Naseer; Turner, William; Desmond Chan; [rosalind.mingi@burlington.ca](mailto:rosalind.mingi@burlington.ca); [umar.malik@burlington.ca](mailto:umar.malik@burlington.ca)

**Cc:** DeRose, Graham (MTO); Sarris, Larry (MTO); Bishop, Chris; Leung, Winnie; Garron, Gus; Sowel Kang

**Subject:** Feedback - MTO 407 Transitway (Brant St. to Hurontario St.) Technical Resource Group Meeting #1

Hello Everyone,

Below is a link to the alignment alternatives shown in the TRG #1 presentation back on September 25<sup>th</sup>. Please let me know if you have any issues accessing the files.

[https://www.dropbox.com/sh/t7qjzd5lirm9mwf/AAAS4X2PFit8HkWXcfnVCiSOa?dl=0\[dropbox.com\]](https://www.dropbox.com/sh/t7qjzd5lirm9mwf/AAAS4X2PFit8HkWXcfnVCiSOa?dl=0[dropbox.com])

We would appreciate any **comments you have to the TRG presentation by November 14<sup>th</sup>**. This will allow us to consider your comments for the upcoming PIC's on November 28<sup>th</sup> and 29<sup>th</sup>. The type of feedback we are looking for includes any known conflicts with existing municipal infrastructure and planned land use activities that could be impacted by the alternatives presented, municipal benefits of the project as well as any other useful land use/utility information, and any major environmental impact concerns.

Thank-you in advance. Please give myself or anyone from the project team a call if you have any questions or concerns.

**APPENDIX G.  
BREEDING BIRD ATLAS DATA**

**APPENDIX G.  
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ03 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ03	Canada Goose	FY	CONF	1	3 atlassers	3	5.45	0.1455	1
12	17PJ03	Wood Duck	FY	CONF	1	Glenn Coady	1	1.82	0.0182	1
12	17PJ03	Gadwall	P	PROB	1	Glenn Coady				
12	17PJ03	Mallard	FY	CONF	1	4 atlassers	3	5.45	0.1273	1
12	17PJ03	Hooded Merganser	H	POSS	1	Glenn Coady				
12	17PJ03	Common Merganser	H	POSS	1	Ray Blower				
12	17PJ03	Ring-necked Pheasant	S	POSS	1	Glenn Coady				
12	17PJ03	Green Heron	T	PROB	1	Jean Iron				
12	17PJ03	Turkey Vulture	H	POSS	1	Alfred L. Adamo	1	1.82	0.0182	1
12	17PJ03	Northern Harrier	H	POSS	1	Glenn Coady				
12	17PJ03	Sharp-shinned Hawk	H	POSS	1	2 atlassers	1	1.82	0.0182	1
12	17PJ03	Cooper's Hawk	FY	CONF	1	Glenn Coady				
12	17PJ03	Red-tailed Hawk	NY	CONF	1	Anthony L Lang	7	12.73	0.1455	1
12	17PJ03	American Kestrel	NY	CONF	1	Roy Smith	5	9.09	0.0909	1
12	17PJ03	Sora	H	POSS	1	Glenn Coady				
12	17PJ03	Killdeer	DD	CONF	1	2 atlassers	12	21.82	0.2727	1



**APPENDIX G.  
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ03 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ03	Rock Pigeon	NY	CONF	1	2 atlassers	18	32.73	0.5636	1
12	17PJ03	Spotted Sandpiper	FY	CONF	1	4 atlassers				
12	17PJ03	American Woodcock	T	PROB	1	Anthony L Lang				
12	17PJ03	Mourning Dove	AE	CONF	1	Glenn Coady	21	38.18	0.6182	1
12	17PJ03	Yellow-billed Cuckoo	S	POSS	1	2 atlassers				
12	17PJ03	Black-billed Cuckoo	CF	CONF	1	Glenn Coady				
12	17PJ03	Eastern Screech-Owl	T	PROB	1	Glenn Coady				
12	17PJ03	Great Horned Owl	AE	CONF	1	Anthony L Lang	1	1.82	0.0182	1
12	17PJ03	Common Nighthawk	H	POSS	1	Alfred L. Adamo				
12	17PJ03	Chimney Swift	AE	CONF	1	Glenn Coady	1	1.82	0.1455	1
12	17PJ03	Ruby-throated Hummingbird	H	POSS	1	Glenn Coady				
12	17PJ03	Belted Kingfisher	FY	CONF	1	Anthony L Lang				
12	17PJ03	Yellow-bellied Sapsucker	H	POSS	1	Glenn Coady				

**APPENDIX G.  
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ03 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ03	Downy Woodpecker	NY	CONF	1	Howard Shapiro	3	5.45	0.0727	1
12	17PJ03	Hairy Woodpecker	AE	CONF	1	Glenn Coady				
12	17PJ03	Northern Flicker	AE	CONF	1	Glenn Coady	5	9.09	0.0909	1
12	17PJ03	Pileated Woodpecker	FY	CONF	1	Glenn Coady	1	1.82	0.0182	1
12	17PJ03	Eastern Wood-Pewee	CF	CONF	1	Glenn Coady	5	9.09	0.0909	1
12	17PJ03	Alder Flycatcher	S	POSS	1	Glenn Coady				
12	17PJ03	Willow Flycatcher	AE	CONF	1	Howard Shapiro	1	1.82	0.0182	1
12	17PJ03	Least Flycatcher	S	POSS	1	Glenn Coady	1	1.82	0.0182	1
12	17PJ03	Eastern Phoebe	NY	CONF	1	2 atlassers				
12	17PJ03	Great Crested Flycatcher	CF	CONF	1	Glenn Coady	4	7.27	0.0727	1
12	17PJ03	Eastern Kingbird	CF	CONF	1	3 atlassers	12	21.82	0.2545	1
12	17PJ03	Warbling Vireo	CF	CONF	1	Howard Shapiro	6	10.91	0.1091	1
12	17PJ03	Red-eyed Vireo	CF	CONF	1	Glenn Coady	7	12.73	0.1636	1

**APPENDIX G.  
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ03 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ03	Blue Jay	CF	CONF	1	Howard Shapiro	8	14.55	0.2909	1
12	17PJ03	American Crow	CF	CONF	1	Glenn Coady	13	23.64	0.4182	1
12	17PJ03	Horned Lark	FY	CONF	1	2 atlassers				
12	17PJ03	Purple Martin	P	PROB	1	Luke Fazio				
12	17PJ03	Tree Swallow	FY	CONF	1	Luke Fazio				
12	17PJ03	Northern Rough-winged Swallow	FY	CONF	1	2 atlassers				
12	17PJ03	Bank Swallow	H	POSS	1	Jean Iron				
12	17PJ03	Cliff Swallow	NY	CONF	1	3 atlassers	3	5.45	0.0727	1
12	17PJ03	Barn Swallow	CF	CONF	1	Howard Shapiro	2	3.64	0.0545	1
12	17PJ03	Black-capped Chickadee	CF	CONF	1	Howard Shapiro	7	12.73	0.1273	1
12	17PJ03	Red-breasted Nuthatch	FY	CONF	1	Glenn Coady				
12	17PJ03	White-breasted Nuthatch	FY	CONF	1	Anthony L Lang	2	3.64	0.0364	1
12	17PJ03	House Wren	AE	CONF	1	Glenn Coady	6	10.91	0.1091	1
12	17PJ03	Winter Wren	T	PROB	1	Alfred L. Adamo				

**APPENDIX G.  
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ03 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ03	Blue-gray Gnatcatcher	FY	CONF	1	Glenn Coady				
12	17PJ03	Veery	S	POSS	1	Glenn Coady				
12	17PJ03	Wood Thrush	CF	CONF	1	Glenn Coady	1	1.82	0.0182	1
12	17PJ03	American Robin	NY	CONF	1	Howard Shapiro	37	67.27	1.1818	1
12	17PJ03	Gray Catbird	CF	CONF	1	Glenn Coady	4	7.27	0.0727	1
12	17PJ03	Northern Mockingbird	NY	CONF	1	2 atlassers	3	5.45	0.0545	1
12	17PJ03	Brown Thrasher	FY	CONF	1	Jean Iron				
12	17PJ03	European Starling	NY	CONF	1	Howard Shapiro	42	76.36	3.0909	1
12	17PJ03	Cedar Waxwing	FY	CONF	1	Glenn Coady	2	3.64	0.1455	1
12	17PJ03	Yellow Warbler	CF	CONF	1	Howard Shapiro	5	9.09	0.0909	1
12	17PJ03	Chestnut-sided Warbler	S	POSS	1	Glenn Coady				
12	17PJ03	American Redstart	S	POSS	1	Glenn Coady				
12	17PJ03	Mourning Warbler	T	PROB	1	2 atlassers	1	1.82	0.0182	1
12	17PJ03	Common Yellowthroat	T	PROB	1	2 atlassers				
12	17PJ03	Chipping Sparrow	FY	CONF	1	Glenn Coady	14	25.45	0.2909	1

**APPENDIX G.  
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ03 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ03	Field Sparrow	FY	CONF	1	Luke Fazio				
12	17PJ03	Vesper Sparrow	T	PROB	1	Jean Iron				
12	17PJ03	Savannah Sparrow	CF	CONF	1	2 atlassers	5	9.09	0.1091	1
12	17PJ03	Song Sparrow	CF	CONF	1	3 atlassers	29	52.73	0.6364	1
12	17PJ03	Swamp Sparrow	T	PROB	1	Jean Iron				
12	17PJ03	White-throated Sparrow	S	POSS	1	Glenn Coady	1	1.82	0.0182	1
12	17PJ03	Northern Cardinal	CF	CONF	1	2 atlassers	19	34.55	0.4182	1
12	17PJ03	Rose-breasted Grosbeak	CF	CONF	1	Glenn Coady	2	3.64	0.0364	1
12	17PJ03	Indigo Bunting	CF	CONF	1	Glenn Coady	3	5.45	0.0545	1
12	17PJ03	Bobolink	CF	CONF	1	Anthony L Lang				
12	17PJ03	Red-winged Blackbird	NE	CONF	1	Glenn Coady	28	50.91	1	1
12	17PJ03	Eastern Meadowlark	CF	CONF	1	2 atlassers	2	3.64	0.0364	1
12	17PJ03	Common Grackle	CF	CONF	1	2 atlassers	32	58.18	0.9636	1
12	17PJ03	Brown-headed Cowbird	NE	CONF	1	Winnie Poon	11	20	0.3273	1
12	17PJ03	Orchard Oriole	CF	CONF	1	Anthony L Lang	1	1.82	0.0182	1

**APPENDIX G.**  
**BREEDING BIRD ATLAS DATA - SQUARE: 17PJ03 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ03	Baltimore Oriole	CF	CONF	1	2 atlassers	12	21.82	0.2727	1
12	17PJ03	House Finch	NE	CONF	1	Roy Smith	11	20	0.2545	1
12	17PJ03	American Goldfinch	NE	CONF	1	Howard Shapiro	20	36.36	0.4727	1
12	17PJ03	House Sparrow	CF	CONF	1	Howard Shapiro	33	60	2.2182	1

## **APPENDIX H.**

### **Breeding Bird Species Documented in the Study Area by LGL**

**APPENDIX H. BREEDING BIRD SPECIES DOCUMENTED IN THE STUDY AREA BY LGL (2018 AND 2019)**

Scientific Name	Common Name	SARA <sup>1</sup>	ESA <sup>1</sup>	Legal Status <sup>1</sup>	Other <sup>1</sup>	BBE	Station # <sup>3</sup>
<i>Buteo jamaicensis</i>	Red-tailed Hawk			FWCA(P)		H	4-2018, 8-2018, 17-2018, 13-2019
<i>Meleagris gallopavo</i>	Wild Turkey			FWCA(G)		T	1-2019, 2-2019
<i>Ardea herodias</i>	Great Blue Heron			MBCA		T	11-2018, 12-2018, 14-2018, 17-2018, 18-2018, 9-2019
<i>Charadrius vociferus</i>	Killdeer			MBCA		A	4-2018, 5-2018, 7-2018, 15-2018, 19-2018, 1-2019
<i>Anas platyrhynchos</i>	Mallard			MBCA		FY	20-2019, 31-2019, 34-2019, 40-2019
<i>Aix sponsa</i>	Wood Duck			MBCA		FY	25-2019
<i>Actitis macularius</i>	Spotted Sandpiper			MBCA		T, A	8-2018, 11-2018, 1-2019
<i>Columba livia</i>	Rock Dove			-		NE	1-2018, 4-2018, 7-2018
<i>Picoides pubescens</i>	Downy Woodpecker			MBCA		S	18-2018
<i>Colaptes auratus</i>	Northern Flicker			MBCA		H	1-2019
<i>Dryocopus pileatus</i>	Pileated Woodpecker			MBCA		H	9-2019
<i>Contopus virens</i>	Eastern Wood Pewee	-	SC	MBCA		T	9-2019, 5-2019, 8-2019, 10-2019, 17-2019, 19-2019, 21-2019, 36-2019
<i>Empidonax traillii</i>	Willow Flycatcher			MBCA		T	3-2019, 4-2019, 25-2019, 35-2019, 36-2019, 35-2019, 37-2019, 40-2019
<i>Empidonax minimus</i>	Least Flycatcher			MBCA		S	15-2018, 16-2018
<i>Sayornis phoebe</i>	Eastern Phoebe			MBCA		T	10-2019, 40-2019
<i>Myiarchus crinitus</i>	Great-crested Flycatcher			MBCA		T	2-2019, 5-2019, 9-2019, 10-2019, 13-2019, 19-2019, 26-2019, 36-2019
<i>Tyrannus tyrannus</i>	Eastern Kingbird			MBCA		CF	15-2018, 3-2019, 12-2019, 27-2019, 40-2019,
<i>Vireo gilvus</i>	Warbling Vireo			MBCA		T	4-2018, 1-2019, 2-2019, 5-2019, 10-2019, 18-2019, 36-2019
<i>Cyanocitta cristata</i>	Blue Jay			FWCA (P)		T	1-2018, 2-2018, 1-2019, 2-2019, 5-2019, 9-2019, 18-2019, 36-2019
<i>Eremophila alpestris</i>	Horned Lark			MBCA		S	25-2019
<i>Tachycineta bicolor</i>	Tree Swallow			MBCA		T	1-2019, 2-2019, 7-2019, 8-2019, 18-2019, 40-2019
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow			MBCA		NE	5-2018, 8-2018, 12-2018, 13-2018, 13-2018, 14-2018, 15-2018, 16-2018, 17-2018, 20-2018, 10-2019, 30-2019, 31-2019, 32-2019, 33-2019, 35-2019, 40-2019



**APPENDIX H. BREEDING BIRD SPECIES DOCUMENTED IN THE STUDY AREA BY LGL (2018 AND 2019)**

Scientific Name	Common Name	SARA <sup>1</sup>	ESA <sup>1</sup>	Legal Status <sup>1</sup>	Other <sup>1</sup>	BBE	Station # <sup>3</sup>
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow			MBCA		T	5-2018, 8-2018, 10-2019, 12-2019, 30-2019, 31-2019, 33-2019, 35-2019
<i>Hirundo rustica</i>	Barn Swallow	-	THR	MBCA		NY	5-2018, 6-2018, 7-2018, 10-2018, 11-2018, 13-2018, 16-2018, 17-2018, 18-2018, 19-2018, 1-2019, 2-2019, 8-2019, 14-2019, 15-2019, 23-2019, 25-2019, 30-2019, 30-2019, 31-2019, 33-2019, 34-2019, 35-2019, 40-2019
<i>Poecile atricapillus</i>	Black-capped Chickadee			MBCA		T	1-2018, 2-2018, 10-2018, 1-2019, 2-2019, 5-2019, 9-2019, 10-2019, 11-2019, 18-2019, 20-2019, 23-2019, 36-2019
<i>Turdus migratorius</i>	American Robin			MBCA		CF	1-2018, 2-2018, 3-2018, 4-2018, 10-2018, 12-2018, 1-2019
<i>Dumetella carolinensis</i>	Gray Catbird			MBCA		T, A	2-2018, 1-2019, 3-2019, 13-2019, 21-2019, 22-2019, 27-2019, 33-2019, 35-2019, 37-2019, 40-2019
<i>Sturnus vulgaris</i>	European Starling			-		NY	1-2018, 3-2018, 4-2018, 5-2018, 7-2018, 9-2018, 10-2018, 12-2018, 14-2018, 15-2018, 16-2018, 19-2018, 1-2019, 2-2019, 8-2019, 14-2019, 15-2019, 23-2019, 25-2019, 30-2019, 30-2019, 31-2019, 33-2019, 34-2019, 35-2019, 40-2019
<i>Troglodytes aedon</i>	House Wren			MBCA		CF	2-2018, 1-2019, 8-2019, 10-2019, 34-2019, 35-2019, 36-2019, 40-2019
<i>Bombycilla garrulus</i>	Cedar Waxwing			MBCA		T	10-2018, 12-2018, 13-2018, 15-2018, 18-2018, 1-2019, 2-2019, 5-2019, 9-2019, 10-2019, 11-2019, 18-2019, 20-2019, 23-2019, 36-2019
<i>Dendroica petechia</i>	Yellow Warbler			MBCA		CF	5-2018, 1-2019, 3-2019, 4-2019, 13-2019, 15-2019, 20-2019, 29-2019, 31-2019, 33-2019, 34-2019, 35-2019, 36-2019, 40-2019, 41-2019, 44-2019
<i>Geothlypis philadelphia</i>	Mourning Warbler			MBCA		S	8-2019
<i>Geothlypis trichas</i>	Common Yellowthroat			MBCA		T, A	5-2018, 1-2019, 4-2019, 13-2019, 15-2019, 20-2019, 29-2019, 31-2019, 33-2019, 34-2019, 35-2019, 36-2019, 40-2019, 41-2019, 42-2019, 44-2019
<i>Pipilo erythrophthalmus</i>	Eastern Towhee			MBCA		S	2-2019
<i>Melospica melodia</i>	Song Sparrow			MBCA		T, A	2-2018, 3-2018, 4-2018, 8-2018, 9-2018, 10-

**APPENDIX H. BREEDING BIRD SPECIES DOCUMENTED IN THE STUDY AREA BY LGL (2018 AND 2019)**

Scientific Name	Common Name	SARA <sup>1</sup>	ESA <sup>1</sup>	Legal Status <sup>1</sup>	Other <sup>1</sup>	BBE	Station # <sup>3</sup>
							2018, 11-2018, 12-2018, 14-2018, 15-2018, 16-2018, 17-2018, 1-2019, 2-2019, 3-2019, 4-2019, 5-2019, 6-2019, 7-2019, 8, 2019, 11-2019, 12-2019, 13-2019, 14-2019, 15-2019, 16-2019, 20-2019, 22-2019, 23-2019, 24-2019, 25-2019, 27-2019, 28-2019, 30-2019, 32-2019, 34-2019, 35-2019, 36-2019, 38-2019, 39-2019, 40-2019, 41-2019, 43-2019
<i>Passerculus sanwicensis</i>	Savannah Sparrow			MBCA		T, A	2-2018, 9-2018, 10-2018, 11-2018, 12-2018, 14-2018, 15-2018, 1-2019, 2-2019, 3-2019, 4-2019, 5-2019, 8, 2019, 11-2019, 12-2019, 13-2019, 14-2019, 15-2019, 122-2019, 23-2019, 24-2019, 27-2019, 28-2019, 30-2019, 34-2019, 35-2019, 36-2019, 38-2019, 39-2019, 41-2019, 43-2019
<i>Passer domesticus</i>	House Sparrow			-		T	1-2018, 7-2019, 23-2019, 27-2019
<i>Spizella passerina</i>	Chipping Sparrow			MBCA		T	7-2018, 9-2018, 10-2018, 13-2018, 15-2018, 1-2019, 23-2019, 27-2019, 34-2019, 35-2019
<i>Melospiza georgiana</i>	Swamp Sparrow			MBCA		S	10-2018
<i>Cardinalis cardinalis</i>	Northern Cardinal			MBCA		T	1-2018, 1-2019, 2-2019, 23-2019, 34-2019
<i>Passerina cyanea</i>	Indigo Bunting			MBCA		T	5-2019, 8-2019, 10-2019, 17-2019, 36-2019
<i>Dolichonyx oryzivorus</i>	Bobolink	-	THR	MBCA		S	5-2018, 34-2019
<i>Agelaius phoeniceus</i>	Red-winged Blackbird			-		T, A	1-2018, 2-2018, 3-2018, 4-2018, 8-2018, 9-2018, 10-2018, 11-2018, 12-2018, 14-2018, 15-2018, 16-2018, 17-2018, 1-2019, 2-2019, 3-2019, 4-2019, 5-2019, 6-2019, 7-2019, 8-2019, 11-2019, 12-2019, 13-2019, 14-2019, 15-2019, 16-2019, 20-2019, 22-2019, 23-2019, 24-2019, 25-2019, 27-2019, 28-2019, 30-2019, 32-2019, 34-2019, 35-2019, 36-2019, 38-2019, 39-2019, 40-2019, 41-2019, 43-2019
<i>Sturnella magna</i>	Eastern Meadowlark	-	THR	MBCA		T	5-2018, 2019-7, 33-2019
<i>Quiscalus quiscula</i>	Common Grackle			-		T	2-2018, 4-2018, 8-2018, 11-2018, 12-2018, 14-2018, 15-2018, 17-2018, 10-2019, 14-2019, 25-2019, 30-2019, 32-2019, 36-2019, 41-2019

**APPENDIX H. BREEDING BIRD SPECIES DOCUMENTED IN THE STUDY AREA BY LGL (2018 AND 2019)**

Scientific Name	Common Name	SARA <sup>1</sup>	ESA <sup>1</sup>	Legal Status <sup>1</sup>	Other <sup>1</sup>	BBE	Station # <sup>3</sup>
<i>Molothrus ater</i>	Brown-headed Cowbird			-		T	2-2018, 8-2018, 11-2018, 12-2018, 14-2018, 10-2019, 30-2019, 32-2019, 41-2019
<i>Icterus galbula</i>	Baltimore Oriole			MBCA		S	2-2019, 8-2019, 23-2019
<i>Carduelis tristis</i>	American Goldfinch			MBCA		CF	2-2018, 3-2018, 9-2018, 10-2018, 11-2018, 12-2018, 14-2018, 15-2018, 16-2018, 17-2018, 1-2019, 2-2019, 3-2019, 4-2019, 5-2019, 6-2019, 7-2019, 11-2019, 12-2019, 13-2019, 14-2019, 20-2019, 22-2019, 23-2019, 24-2019, 25-2019, 27-2019, 28-2019, 30-2019, 32-2019, 34-2019, 35-2019, 36-2019, 38-2019, 39-2019, 40-2019, 41-2019, 43-2019

<sup>1</sup>For definitions of species ranks, refer to **Appendix C**.

<sup>2</sup>BBE - Breeding Bird Evidence (according to Bird Studies Canada):

Possible Breeding:

H - Species observed in its breeding season in suitable nesting habitat.

S - Singing male present in its breeding season in suitable nesting habitat.

Probable Breeding:

T - Permanent territory presumed through registration of territorial song on at least two days, a week or so apart, at the same place.

A - Agitated behaviour or anxiety calls of an adult.

Confirmed Breeding:

NU - Used nest or egg shell found (occupied or laid within the period of study).

FY - Recently fledged young or downy young, including young incapable of sustained flight.

CF - Adult carrying food for young.

NE - Nest containing eggs.

NY - Nest with young seen or heard.

<sup>3</sup>Breeding Bird Point Count Station.