

Appendix E – Terrestrial Report



407 TRANSITWAY – WEST OF HURONTARIO STREET TO EAST OF HIGHWAY 400

MINISTRY OF TRANSPORTATION - CENTRAL REGION

TERRESTRIAL ECOSYSTEMS EXISTING CONDITIONS AND IMPACT ASSESSMENT REPORT

TRANSIT PROJECT ASSESSMENT PROCESS

407 TRANSITWAY

**FROM WEST OF HURONTARIO STREET TO EAST OF HIGHWAY 400
CITY OF BRAMPTON (PEEL REGION) AND CITY OF VAUGHAN (YORK REGION)**

G.W.P. 14-20001

prepared for:

**MINISTRY OF TRANSPORTATION
CENTRAL REGION**

prepared by:



JULY 2018

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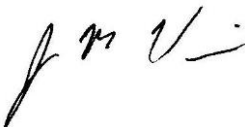


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JULY 2018
LGL PROJECT TA8558-04

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1.0 INTRODUCTION

1.1 Background

This project involves the Transit Project Assessment Process (TPAP) for the 407 Transitway from west of Hurontario Street to east of Highway 400. 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 407 ETR Corridor. This section of the transitway facility will consist of 23 km of runningway and seven stations. The station layouts will include vehicular and pedestrian access(es), park and ride and passenger pick-up/drop off (PPUDO) facilities, bus lay-by facilities, on-street integration with local transit, shelters, buildings and other amenities. Subject to the outcome of the study, the 407 Transitway will be implemented initially as Bus Rapid Transit (BRT) with the opportunity to convert to Light Rail Transit (LRT) in the future.

This 23 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 Highway 407 from Brant Street in Burlington to Highway 35/115 in Clarington, 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.

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 Corporation (Parsons). Parsons has assembled a team of engineering and environmental specialists to provide the services required for this study. LGL Limited is conducting a natural sciences investigation in support of the TPAP for the 407 Transitway.

This report documents the results of the terrestrial ecosystems investigation undertaken by LGL Limited during the TPAP and has been prepared in accordance with the requirements of the MTO Environmental Reference for Highway Design (MTO 2013). The secondary source data presented in the initial Terrestrial Ecosystems Existing Conditions Report prepared by LGL in April 2016 has been updated and augmented for this report based on the detailed field investigations conducted.

1.2 Data Collection and Analysis

Data was obtained from published data sources and unpublished information made available by relevant stakeholders. This data was then reviewed to identify data gaps and deficiencies, and to scope the type, location and level of detail for field investigations. Field investigations included windshield and pedestrian surveys carried out within the study area by the study team in May, June, July, August and October 2016.

1.3 Results

The results of the data collection and analysis are presented according to factor-specific environmental services. The purpose of the investigation, data sources, and findings are presented for each environmental discipline (physiography and soils, vegetation and vegetation communities, and wildlife and wildlife habitat). The impact assessment and proposed environmental protection/mitigation measures, as well as environmental sensitivity/significance, are discussed in **Section 4.0**. Conclusions and recommendations are discussed in **Section 5.0**.

The Municipal Official Plan Natural Heritage Schedules/Maps are presented in **Appendix A**.

The Ecological Land Classification Field Sheets are presented in **Appendix B**.

The photographic record is presented in **Appendix C**.

The vascular plant lists are presented in **Appendix D**.

The acronyms and definitions used in the species lists are presented in **Appendix E**.

Correspondence with the Ministry of Natural Resources and Forestry (MNRF), Toronto and Region Conservation Authority (TRCA) and Credit Valley Conservation (CVC) is presented in **Appendix F**.

The TRCA Data Summary of Fauna Previously Recorded In/Near the Study Area is presented in **Appendix G**.

The Breeding Bird Atlas Data is presented in **Appendix H**.

The Environmental Reference for Highway Design (MTO 2013) Checklists for Terrestrial Ecosystems (including wildlife habitats and movements, wetlands, woodlands and other vegetated areas, and designated natural areas) are presented in **Appendix I**.

1.4 Study Team

The study team members and their roles in the environmental investigation for this project are outlined below:

- Judson Venier, LGL Limited - Natural Sciences Manager;
- Lisa Catcher, LGL Limited - physiography and soils assessment, terrestrial ecosystems (vegetation) assessment;
- Samantha Delargy, LGL Limited - terrestrial ecosystems (vegetation) assessment;
- Nancy Falkenberg, LGL Limited - terrestrial ecosystems (vegetation) assessment; and,
- David Smith, LGL Limited - terrestrial ecosystems (wildlife) assessment.

2.0 STUDY AREA

The study area is located in the City of Brampton, Region of Peel and the City of Vaughan, Region of York. The study area is also located directly adjacent to the City of Mississauga and the City of Toronto and extends slightly within the City of Mississauga and City of Toronto boundaries in a few locations. The project limits are presented in **Figure 1**.

The overall study area for the initial terrestrial ecosystems secondary source existing conditions investigation, which took place during the pre-TPAP phase, included a one-kilometre-wide corridor centred along 407 ETR within the study area (see **Figure 1**). The study area for the detailed terrestrial ecosystems field investigations focused on the facility footprint, including the proposed preferred Transitway alignments/station locations and adjacent lands up to 120 m (north and south) from the future infrastructure footprint (see **Figures 2a, 2b and 2c for field investigation area**), all located south of the 407 ETR. The results of the natural sciences investigation are documented in further detail in the Fish and Fish Habitat Existing Conditions and Impact Assessment Report (LGL Limited 2018) and the Environmental Project Report.

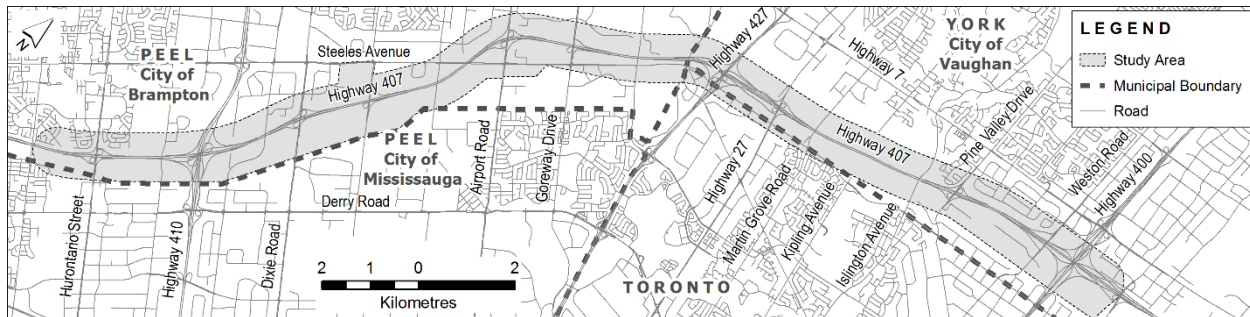


FIGURE 1. KEY PLAN OF STUDY AREA

3.0 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), and wildlife and wildlife habitat. Plant and wildlife species at risk are also discussed.

3.1 *Physiography and Soils*

3.1.1 Purpose

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

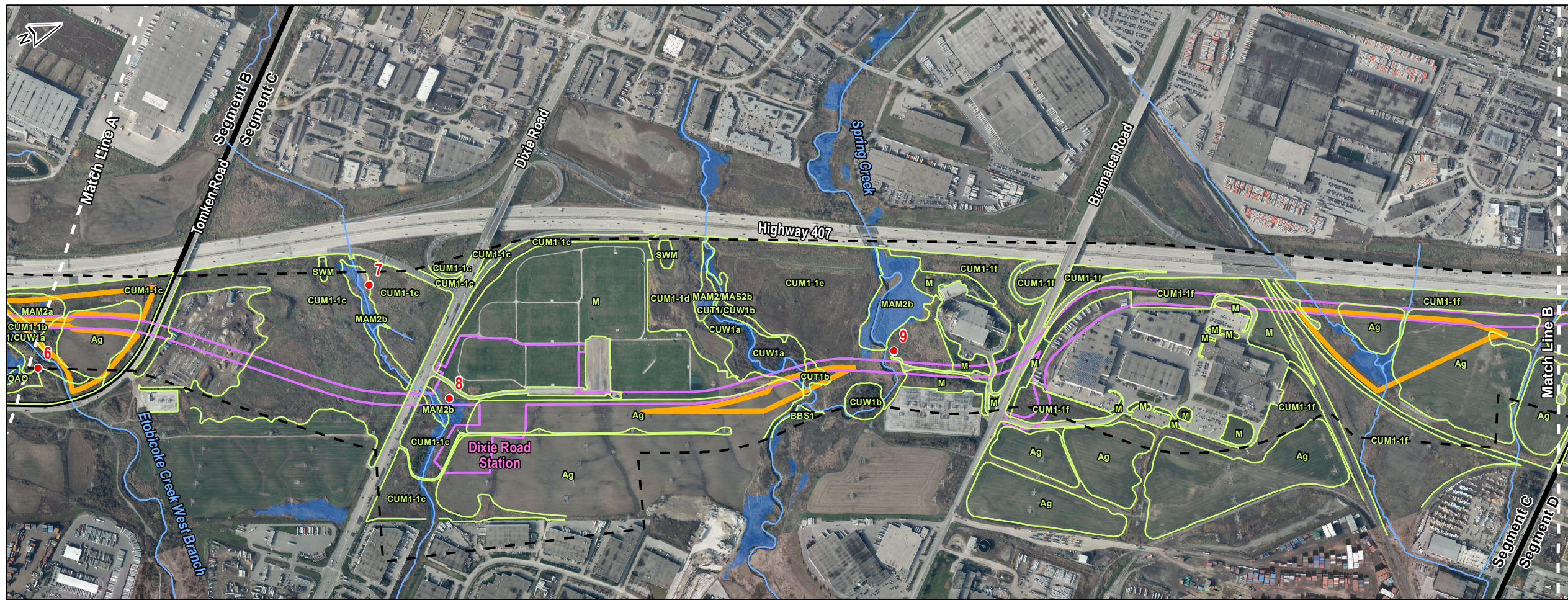
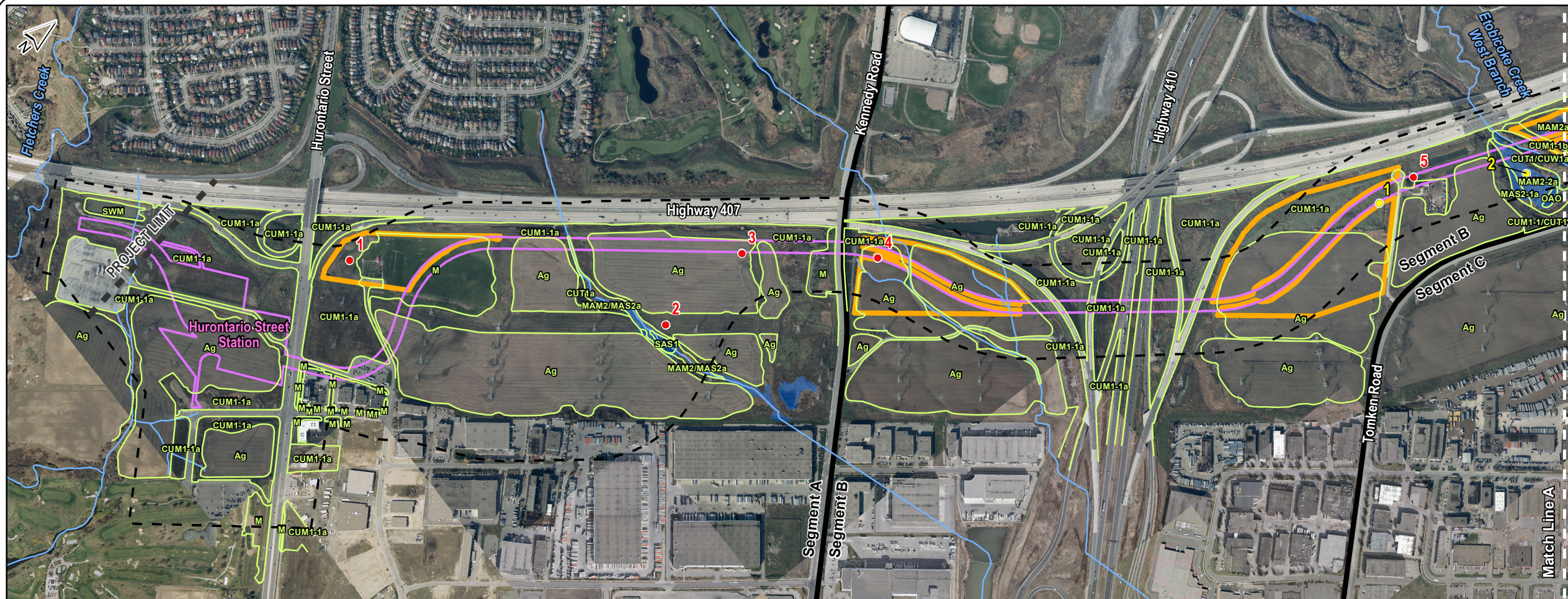
3.1.2 Data Sources

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;
- 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;
- Hoffman, D.W. and N.R. Richards. 1955. *Soil Survey of York County*. Report No. 19 of the Ontario Soil Survey. Experimental Farm Service, Canada Department of Agriculture and the Ontario Agricultural College;
- Toronto and Region Conservation Authority. 2008. *Humber River Watershed Scenario Modelling and Analysis Report*. Prepared by TRCA, with input from consultants, government, and the Humber Watershed Alliance; and,
- Toronto and Region Conservation Authority. 2010. *Etobicoke and Mimico Watersheds Technical Update*. Chapter 2 – Study Area and Physical Setting.

3.1.3 Findings

According to Chapman and Putnam (1984), the entire study area is located within the Peel Plain physiographic region. However, according to the TRCA (Humber River and Etobicoke and Mimico Watersheds mapping), although the majority of the study area is located within the Peel Plain physiographic region, portions of the east end of the study area are located within the South Slope



LEGEND

- Study Area
- Impact Assessment Corridor
- Protected Site
- Unevaluated Wetland
- Watercourse
- Anuran Call Monitoring Station
- Breeding Bird Point Count Station
- Vegetation Community Boundary
- Ag** Agricultural
- BBS1** Mineral Shrub Beach/Bar Ecosite
- CUM1-1 (p-f)** Dry-Moist Old Field Meadow Type
- CUM1-1(CUM1 (p-b))** Dry-Moist Old Field Meadow Type/Mineral Cultural Thicket Ecosite
- CUT1 (p-b)** Mineral Cultural Thicket Ecosite
- CUT1/CUW1** Mineral Cultural Thicket Ecosite/Mineral Cultural Woodland Ecosite
- CUW1 (p-b)** Mineral Cultural Woodland Ecosite
- M** Manicured
- MAM2 (p-b)** Mineral Meadow Marsh Ecosite
- MAM2/MAS2 (p-b)** Mineral Meadow Marsh/Mineral Shallow Marsh Ecosite
- MAM2-2a** Reed-canary Grass Mineral Meadow Marsh Type
- MAM2-1a** Cattail Mineral Shallow Marsh Type
- OAO** Open Aquatic
- SAS1** Submerged Shallow Aquatic Ecosite
- SWM** Storm Water Pond

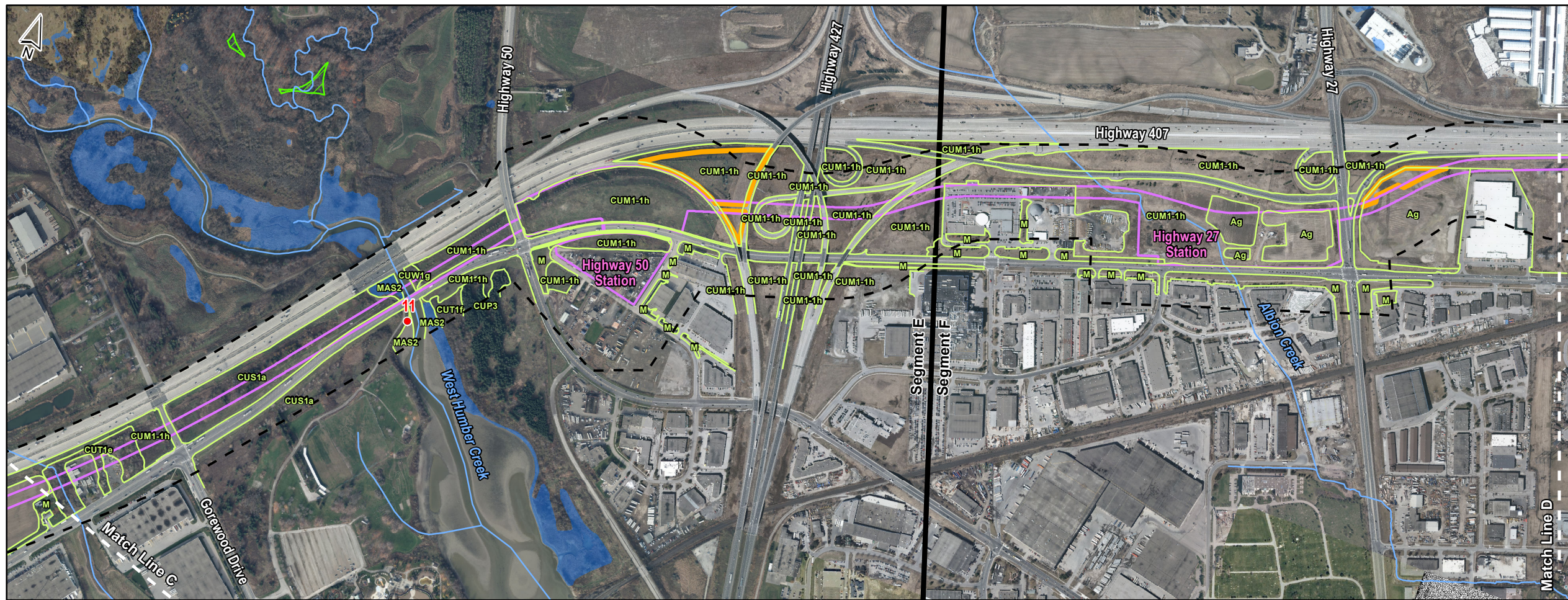
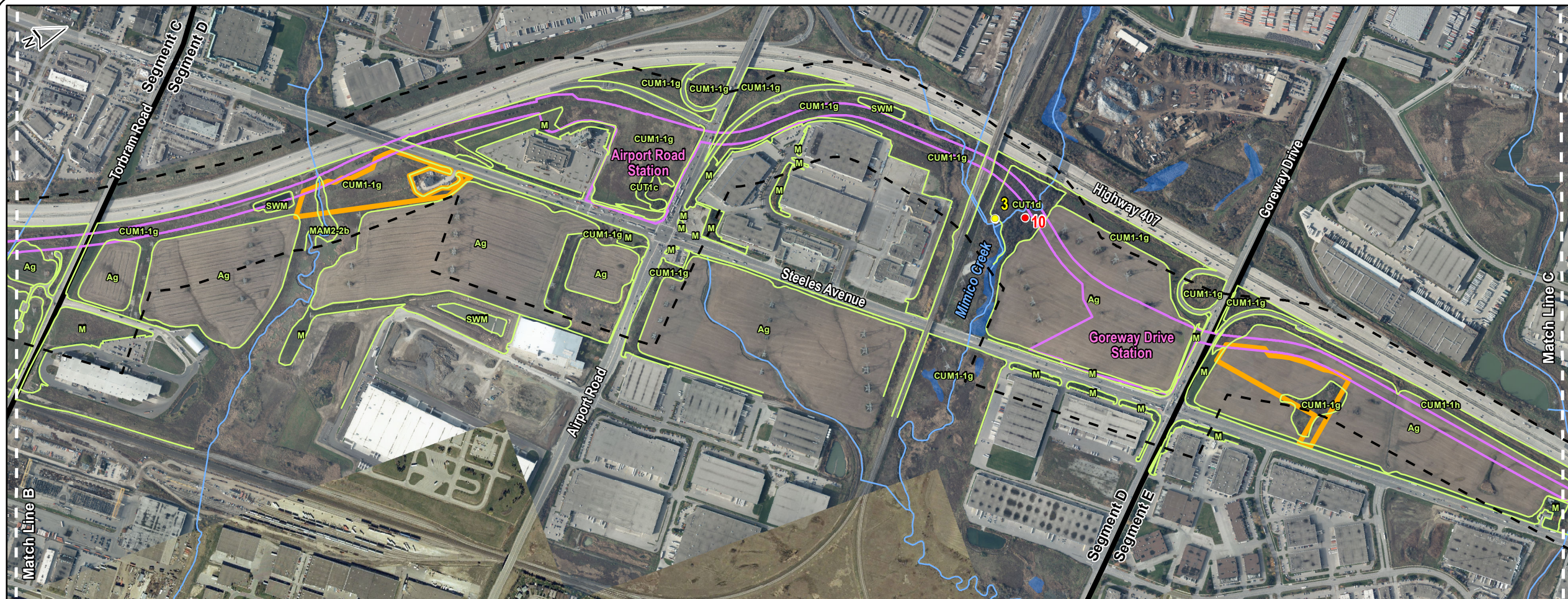
Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry (LIO).











407 TRANSITWAY WEST -
NATURAL HERITAGE



Project: TA8558	Figure: 2a
Date: June, 2018	Prepared By: MWF
Scale: 1 : 14,000	Checked By: NMF



LEGEND

-  Study Area
-  Impact Assessment Corridor
-  Protected Site
-  Interior Forest Habitat (100 m From Edge)
-  Unevaluated Wetland
-  Watercourse
-  Anuran Call Monitoring Station
-  Breeding Bird Point Count Station

- Vegetation Communities**
-  Vegetation Community Boundary
 - Ag** Agricultural
 - CUP3** Coniferous Plantations
 - CUS1a** Mineral Cultural Savannah Ecosite
 - CUM1-1 (g-h)** Dry-Moist Old Field Meadow Type
 - CUM1-1 (p-t)** Mineral Cultural Thicket Ecosite
 - CUW1g** Mineral Cultural Woodland Ecosite
 - M** Manicured
 - MAM2-2b** Reed-canary Grass Mineral Meadow Marsh Type
 - MAS2** Mineral Shallow Marsh Ecosite
 - SWM** Storm Water Pond

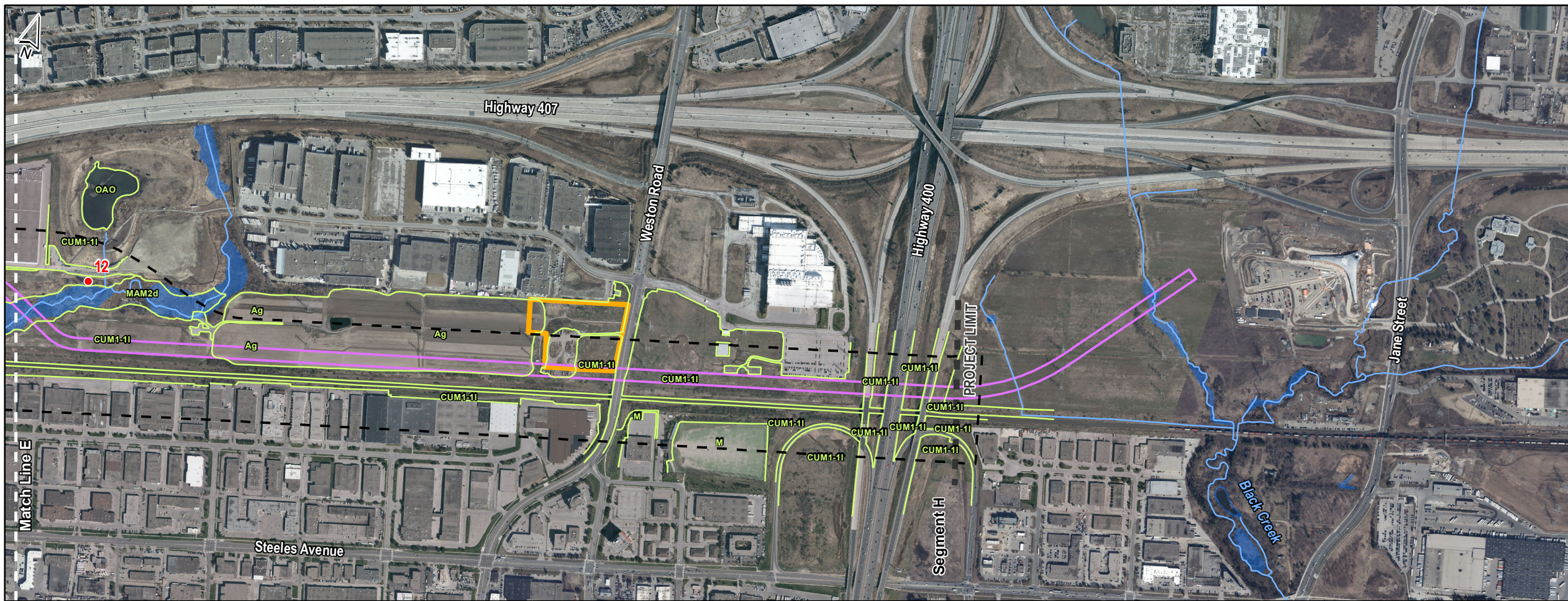
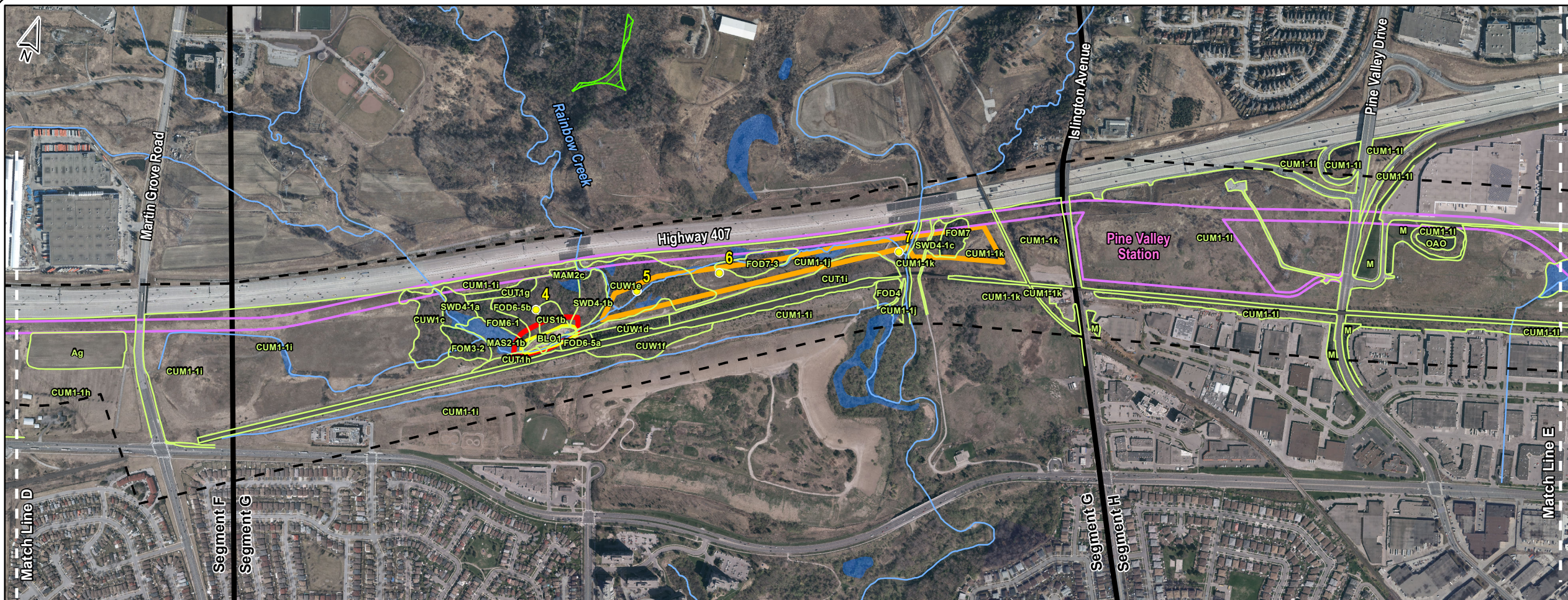
Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry (LIO).














407 TRANSITWAY WEST -
NATURAL HERITAGE



Project: TA8558	Figure: 2b
Date: June, 2018	Prepared By: MWF
Scale: 1 : 14,000	Checked By: NMF



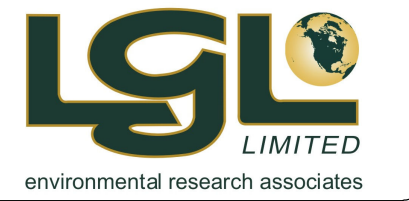
LEGEND

-  Study Area
 -  Impact Assessment Corridor
 -  Protected Site
 -  Interior Forest Habitat (100 m From Edge)
 -  Unevaluated Wetland
 -  Area of Natural and Scientific Interest (Woodbridge Pleistocene Cut)
 -  Environmentally Significant Area (Woodbridge Cut)
 -  Watercourse
 -  Anuran Call Monitoring Station
 -  Breeding Bird Point Count Station
- Vegetation Communities**
-  Vegetation Community Boundary
 - Ag** Agricultural
 - BLO1** Calcareous Fine Mineral Open Bluff Ecosite
 - CUM1-1 (a)** Dry-Moist Old Field Meadow Type
 - CUM1-1 (b)** Mineral Cultural Savannah Ecosite
 - CUM1-1 (c)** Mineral Cultural Thicket Ecosite
 - CUM1-1 (d)** Mineral Cultural Woodland Ecosite
 - FOD4** Dry-Fresh Deciduous Forest Ecosite
 - FOD6-1 (a)** Fresh-Moist Sugar Maple-Hardwood Deciduous Forest Type
 - FOD7-3** Fresh-Moist Willow Lowland Deciduous Forest Type
 - FOD8-2** Dry-Fresh Sugar Maple-Hemlock Mixed Forest Type
 - FOD8-4** Fresh-Moist Sugar Maple-Hemlock Mixed Forest Type
 - FOD7** Fresh-Moist White Cedar-Hardwood Mixed Forest Ecosite
 - M** Manicured
 - MAM2 (c-d)** Mineral Meadow Marsh Ecosite
 - MAS2-1b** Cattail Mineral Shallow Marsh Type
 - OAO** Open Aquatic
 - SWD4-1 (a-d)** Willow Mineral Deciduous Swamp Type

Data Sources: LGL Limited field surveys, Ministry of Natural Resources and Forestry (LIO), Toronto Region Conservation Authority.



407 TRANSITWAY WEST -
NATURAL HERITAGE



Project: TA8558	Figure: 2c
Date: June, 2018	Prepared By: MWF
Scale: 1 : 14,000	Checked By: NMF

physiographic region. All of the lands in the study area between east of McLaughlin Road and west of Finch Avenue are classified as Peel Plain (TRCA 2010). The lands located between east of Finch Avenue and Islington Avenue are classified as South Slope, as is the last portion of the study area between east of Highway 400 and west of Jane Street. The remaining portion of the study area between Islington Avenue and Highway 400 is classified as Peel Plain (TRCA 2008).

Both the Peel Plain and South Slope extend through the Regions of Peel and York and the City of Toronto. The Peel Plain is a level to undulating tract of clay soils with imperfect drainage, through which the Humber River, Etobicoke Creek, Mimico Creek and its tributaries have carved deep valleys (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 moranic, consisting of a ground moraine with limited relief (Chapman and Putnam 1984).

Soils surrounding 407 ETR in the study area are classified as: Peel clay, Chinguacousy clay loam, Malton clay, Fox sandy loam, Berrien sandy loam and bottom lands (Hoffman and Richards 1953; 1955). The dominant soil throughout the study corridor is Peel clay, broken up by bottom lands associated with area watercourses, a series of pockets of Malton clay, two areas of Chinguacousy clay loam, and one area each of Fox sandy loam and Berrien sandy loam.

Peel clay

Peel clay soils are imperfectly drained and exhibit a smooth, gently sloping topography. These soil types consist of lacustrine clay over gritty clay or clay till, which can be up to one metre deep. Erosion is slight with these soil types (Hoffman and Richards 1953; 1955). Most of the study area consists of this soil type, as noted above.

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; 1955). This soil type is located at the westerly limits of the study area west of Hurontario Street, and at the easterly limits of the study area east of Highway 400.

Malton clay

Malton clay soils are poorly drained with a smooth, very gently sloping topography. This soil type is composed of lacustrine clay over gritty clay, which can be up to one metre deep. This soil type is friable, but poor drainage causes erosion to be slight under natural conditions (Hoffman and Richards 1953; 1955). Pockets of Malton clay soils are found throughout the study area, including between Hurontario Street and Kennedy Road, just west of Bramalea Road (north of 407 ETR), between Summerlea Road and Airport Road (north of 407 ETR), at Goreway Drive (south of 407 ETR), west of Claireville Conservation Road (north of 407 ETR) and at 407 ETR and Highway 400.

Fox sandy loam

Fox sandy loam soils are well drained with a smooth, gently sloping topography. This soil type developed on sandy outwash of medium lime content and is very friable, but stone free. Fox sandy loam soils are susceptible to erosion, and soil loss from wind erosion can be severe when left uncovered for long periods of time (Hoffman and Richards 1953; 1955). One location in the study area contains this soil type between the Humber River and east of Islington Avenue.

Berrien sandy loam

Berrien sandy loam soils are imperfectly drained with a smooth, gently sloping topography. This soil type is composed of sandy outwash over calcareous clay till, which can be up to one metre deep. Berrien sandy loam soils are very friable and erosion prone though runoff is low (Hoffman and Richards 1953; 1955). One location in the study area contains this soil type, just east of the Fox sandy loam, from east of Islington Avenue to Pine Valley Drive.

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; 1955). All watercourses located within the study area are classified as bottom lands.

3.2 Vegetation and Vegetation Communities

3.2.1 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 (CVC) and the Toronto and Region Conservation Authority (TRCA) provided Ecological Land Classification (ELC) data. Detailed field investigations were conducted in late spring, summer and early fall of 2016, and focused on the facility footprint, including the proposed preferred Transitway alignments/station locations and adjacent lands up to 120 m (north and south) from the future infrastructure footprint (see **Figures 2a, 2b and 2c**), all located south of the 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.

3.2.2 Data Sources

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

- City of Brampton. 2015. *Official Plan Office Consolidation November 2015*;
- City of Mississauga. 2017. *Official Plan Office Consolidation March 2017*;
- City of Toronto. 2015. *Official Plan Office Consolidation June 2015*;
- City of Vaughan. 2017. *Official Plan Office Consolidation January 2017. A Plan for Transformation*. Partially Approved by the Ontario Municipal Board;
- Credit Valley Conservation. *Ecological Land Classification Mapping*;
- Credit Valley Conservation. 2016. Data provided on January 26, 2016;
- 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.;
- 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.;

- Ontario Ministry of Natural Resources and Forestry. 2015a. *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, Aurora District Office. 2016. Species at Risk data provided on February 4, 2016;
- Ontario Ministry of Natural Resources and Forestry, Aurora District Office. 2018. Species at Risk data provided on January 10, 2018;
- Region of Peel. 2016. *Official Plan Office Consolidation December 2016*;
- Region of York. 2016. *Official Plan Office Consolidation April 2016*;
- Toronto and Region Conservation Authority. *Ecological Land Classification Mapping*;
- Toronto and Region Conservation Authority. 2009. *Flora Scoring and Ranking*; and,
- Toronto and Region Conservation Authority. 2016. Data provided on January 5, 2016.

3.2.3 Findings

3.2.3.1 Designated Natural Areas

Designated natural areas include areas identified for protection by the MNRF, CVC, TRCA and upper tier and lower tier municipalities.

Environmentally Significant/Sensitive Areas

The Woodbridge Cut Environmentally Significant/Sensitive Area (ESA No. 15) is located in the City of Vaughan south of the 407 ETR right-of-way and east of Martin Grove Road adjacent to the rail corridor. The location of the ESA is presented on **Figure 2c**.

Provincially Significant Wetlands

There are no Provincially Significant Wetlands (PSWs) located within 120 m of the study area. There are several unevaluated wetlands within the study area that were classified according to the *Ecological Land Classification for Southern Ontario: First Approximation and Its Application* (Lee *et al.* 1998). These communities include shallow marshes comprised of cattails (*Typha* spp.) and/or common reed (*Phragmites australis*), meadow marsh communities that consist of a variety of grasses and forbs, and Reed-Canary Grass Mineral Meadow Marsh. These wetlands are typically narrow communities associated with riparian habitat

Areas of Natural and Scientific Interest

The Woodbridge Pleistocene Cut Earth Science Area of Natural and Scientific Interest (ANSI) is located in the City of Vaughan south of the 407 ETR right-of-way and east of Martin Grove Road adjacent to the rail corridor. The location of the ANSI is presented on **Figure 2c**.

Natural Heritage System

City of Brampton

According to the City of Brampton Official Plan (2015), the majority of the watercourses and their associated habitat 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 ‘Other Wetland’ are identified throughout 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.

According to the Region of Peel Official Plan (2016), several areas within the study area (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, Etobicoke Creek (west branch), Spring Creek, Mimico Creek (between Airport Road and Goreway Drive), and the West Humber River (see **Appendix A: Schedule A**). In addition, it is the policy of the Region to encourage the restoration and enhancement of natural heritage features and functions within the PBWP area (Policy 2.5.2.5). 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 Etobicoke Creek West Branch and the West Humber River (**Appendix A: Schedule D3**). These ‘River Valley Connections Outside the Greenbelt’ are 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 recently updated by the Ministry of Municipal Affairs in May 2017 and three watercourses located within the study area are now designated as ‘Urban River Valleys’ including two watercourses in the City of Brampton, Region of Peel (Etobicoke Creek West Branch and West Humber River). The City of Brampton and Region of Peel’s Official Plans have not yet been updated to address these changes to the Greenbelt Plan.

City of Mississauga

‘Greenlands’, ‘Public and Private Open Spaces’ and ‘Significant Natural Areas and Natural Green Spaces’ are identified in the City of Mississauga Official Plan (2017) along Fletchers Creek located adjacent to the study area (see **Appendix A: Schedule 10, Schedule 4** and **Schedule 3**). The area surrounding Fletchers Creek, in the vicinity of the study area, is also identified as a ‘Natural Hazards’ area and ‘Urban System – Green System’ (see **Appendix A: Schedule 3** and **Schedule 1a**).

According to the Region of Peel Official Plan, one area within the study area (within the City of Mississauga) is located within the ‘Core Areas of the Greenlands System in Peel’: lands associated with Fletchers Creek (see **Appendix A: Schedule A**).

City of Vaughan

According to the City of Vaughan Official Plan (2017), the valleyland associated with Albion Creek and its tributary, the Lower Humber River and its tributaries, Rainbow Creek, and Black Creek and its tributary are designated as ‘Natural Areas’ and ‘Natural Areas and Countryside’ (see **Appendix A: Schedule 1**). The lands south of 407 ETR east of Martin Grove Road, and a few small patches of parkland throughout the study limits are designated as ‘Parks’. The majority of the lands located between Highway 427 and Highway 27, north of 407 ETR, are designated as ‘Private Open Spaces’. In addition, the major valleylands associated with tributaries of the Lower Humber River and Rainbow Creek between Martin Grove Road and Islington Avenue are designated as ‘Core Features’ of the City of Vaughan Natural Heritage Network (see **Appendix A: Schedule 2**). Also identified as part of this system is Albion Creek and its tributary which cross the study area east of Highway 427, a tributary of the Lower Humber River and the associated storm water management facility, and Black Creek and its tributary east of Highway 400. These features are classified as ‘Core Features’, with the exception of the storm water management facility that is an ‘Enhancement Area’ (see **Appendix A: Schedule 2**). A number of lands adjacent to the ‘Core Features’ are identified as ‘Unapproved’ portions of the Natural Heritage Network. These lands are under consideration for Core Feature additions, deletions or classification as ‘Enhancement Area’ (see **Appendix A: Schedule 2**). A number of lands adjacent to the ‘Core Features’ are identified as ‘Unapproved’ portions of the Natural Heritage Network. These lands are under consideration for ‘Core Feature’ additions, deletions or classification as ‘Enhancement Areas’. The Lower Humber River crosses the study area between Martin Grove Road and Pine Valley Drive and the natural heritage features within this large natural area are of significance. The Lower Humber River valleylands are identified as a ‘Greenbelt Plan External Linkage’ that connects the Greenbelt Plan Natural Heritage System (and habitats further north) to other habitats further downstream, recognizing the importance of these areas as linkages.

According to the Region of York Official Plan (2016), a major watercourse/valleylands corridor (north-south) associated with the Lower Humber River and its tributaries and Rainbow Creek is located between Martin Grove Road and Pine Valley Drive both north and south of 407 ETR. This corridor is designated as part of the 'Regional Greenlands System' and as 'Woodlands' in the Official Plan. Some pockets of 'Conservation Area/Regional Forest' are also located north and south of the 407 ETR corridor generally at this location. In addition, the area between east of Kipling Avenue and east of Pine Valley Drive northerly from the York Region boundary with the City of Toronto has been identified in the Official Plan as 'Greenlands System Vision', as a linkage between other natural heritage features north and south of the study area. **Appendix A (Map 2 and Map 5)** presents the locations of these areas/features. As noted above, the Greenbelt Plan was recently updated in May 2017 and three watercourses located within the study area are now designated as 'Urban River Valleys' including one watercourse in the City of Vaughan, Region of York (Lower Humber River). The City of Vaughan and Region of York Official Plans have not yet been updated to address these changes to the Greenbelt Plan.

City of Toronto

The tributary of the Lower Humber River, which crosses Steeles Avenue between Highway 27 and Martin Grove Road within the study area, is designated as 'Green Space System' in the City of Toronto Official Plan (2015). This tributary of the Lower Humber River and Albion Creek (crossing Steeles Avenue/407 ETR west of Highway 27) are also identified as part of the City's Natural Heritage System (see **Appendix A: Map 9**).

3.2.3.2 Vegetation Communities

Vegetation communities within the study area consist of a mixture of terrestrial, wetland and cultural communities. The 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. Forest and wetland communities are 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 delineated were observed to be in a disturbed state associated with existing land use practices; this was particularly notable along community edges.

A total of 20 ecosites were identified within the study area based on field surveys undertaken by LGL staff throughout the spring, summer and fall of 2016. Field surveys were undertaken on May 18, June 17 and 27, July 25, 26, and 27, August 15, 24 and 31, and October 25, 2016. The communities identified include three combined vegetation communities including Mineral Cultural Meadow/Mineral Cultural Thicket (CUM1-1/CUT1), Mineral Cultural Thicket/Mineral Cultural Woodland (CUT1/CUW1), and Mineral Meadow Marsh/Mineral Shallow Marsh (MAM2/MAS2). 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 include several Deciduous Forest (FOD) and Mixed Forest (FOM) types, several wetland communities including Mineral Meadow Marsh (MAM2), Reed-Canary Grass Mineral Meadow Marsh (MAM2-2) and Deciduous Swamp (SWD), a Mineral Open Bluff (BLO1), and a Mineral Shrub Beach/Bar (BBS1). Cultural community types were also identified including Mineral Cultural Meadow (CUM1), Mineral Cultural Thicket (CUT1), Mineral Cultural Woodland (CUW1), and Coniferous Plantation (CUP3). Several very small wetland patches, typically less than 0.1 ha and dominated by common reed, were identified as inclusions within cultural meadow communities identified adjacent to the 407 ETR. Many of these inclusions were very dry in 2016 and likely established due to seasonal runoff from the highway.

Several areas not identified as ELC vegetation communities were observed including manicured areas and storm water ponds (SWM). Manicured areas (M) include mown lawns, gardens and planted trees. The

berms surrounding all of the storm water ponds observed, were planted with a low density of shrubs and trees, and ground flora within these areas were comprised of disturbance tolerant species typically found within the surrounding landscape. Common reed, and to a lesser extent cattails, were noted to have established and are dominant along the water's edge, within most storm water ponds.

The ELC vegetation communities identified during field surveys undertaken by LGL staff are described in **Table 1** and presented in **Figures 2a, 2b and 2c**. The ELC Field Sheets are presented in **Appendix B**. A photographic record of the vegetation communities is presented in **Appendix C**.

The following discussion provides a more detailed summary of existing conditions and vegetation communities identified within smaller sections (Segments A to H) across the study area. For details regarding plant communities discussed below, please refer to **Table 1** and **Figures 2a to 2c**. The impact assessment, presented in **Section 4.2**, is similarly summarized.

Segment A: West of Hurontario Street to East of Kennedy Road

Across Segment A, there are several large agricultural fields and a large manicured field used as a driving range, which dominate this segment. Within the narrow strips of habitat between these features and areas adjacent to the 407 ETR right-of-way, cultural meadow is dominant. The cultural meadow habitat identified within Segment A is dominated by disturbance tolerant plant species. A warmwater watercourse that flows intermittently bisects several of the agricultural fields east of Hurontario Street. Along this watercourse, meadow marsh/shallow marsh and submerged shallow aquatic communities are present. The meadow marsh/shallow marsh community includes reed canary grass (*Phalaris arundinacea*) and cattails (*Typha* spp.) which are abundant, and coontail (*Ceratophyllum demersum*) was observed as occasional within the submerged shallow aquatic. Overall, vegetation communities within Segment A are heavily influenced by local land use practices including industrial and residential development, and agriculture.

Segment B: East of Kennedy Road to West of Tomken Road

Across Segment B, agricultural fields and cultural meadow habitat are dominant and disturbance tolerant plant species are abundant to dominant within the cultural meadows. Across the western portion of Segment B, a warmwater watercourse flows intermittently just east of Kennedy Road, and this watercourse is associated with cultural meadow habitat where reed canary grass was observed as occasional. Across the eastern portion of Segment B, the Etobicoke Creek West Branch, which is a permanently flowing warmwater watercourse, bisects the study area. Habitat adjacent to this watercourse includes a cattail mineral shallow marsh, meadow marsh, cultural meadow, cultural thicket/cultural woodland, and cultural meadow/cultural thicket. As previously noted, combined communities were identified where these are small and/or community boundaries were difficult to distinguish. Plant species within the meadow marsh habitats, one east and a second west of Etobicoke Creek West Branch, includes cattails, common reed, and reed canary grass; these species were observed as abundant to dominant. The Reed-canary Grass Mineral Meadow Marsh west of the watercourse was observed to be significantly disturbed by vehicles that traversed the community creating large, fairly deep ruts across the wetland. Overall, vegetation communities within Segment B are influenced by local land use practices including industrial and residential development, and agriculture.

Segment C: West of Tomken Road to East of Torbram Road

Across Segment C, agricultural fields and cultural meadow habitat are dominant and disturbance tolerant plant species are abundant to dominant within the cultural meadows. Also identified within this segment is a large manicured area with several sports fields, located immediately east of Dixie Road. Several watercourses bisect this portion of the study area including the Etobicoke Creek West Branch, Spring Creek, and tributaries of Mimico Creek towards the eastern edge of the segment. Habitat adjacent to these watercourses include meadow marsh, meadow marsh/shallow marsh, cultural meadow, cultural

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
TERRESTRIAL – NATURAL/SEMI-NATURAL			
FOD	Deciduous Forest		
FOD4	Dry-Fresh Deciduous Forest	<p>Canopy: includes black locust (<i>Robinia pseudoacacia</i>), riverbank grape, black maple (<i>Acer nigrum</i>), and Manitoba maple (<i>Acer negundo</i>).</p> <p>Understory: includes black locust, Manitoba maple, common buckthorn, riverbank grape and tartarian honeysuckle (<i>Lonicera tatarica</i>).</p> <p>Ground Cover: includes Kentucky bluegrass (<i>Poa pratensis</i> ssp. <i>Pratensis</i>), Robert geranium (<i>Geranium robertianum</i>), Canada goldenrod (<i>Solidago canadensis</i>), blue-stemmed goldenrod (<i>Solidago caesia</i>) and dames rocket (<i>Hesperis matronalis</i>).</p>	<ul style="list-style-type: none"> • Tree cover > 60% (FO). • Deciduous trees > 75% of canopy cover (D). • Moderately dry to fresh moisture regime (4).
FOD6-5 (a-b)	Fresh-Moist Sugar Maple-Hardwood Deciduous Forest	<p>Canopy: includes sugar maple (<i>Acer saccharum</i> ssp. <i>saccharum</i>), white ash (<i>Fraxinus americana</i>), basswood (<i>Tilia americana</i>), bitternut hickory, black locust, Manitoba maple, eastern white cedar (<i>Thuja occidentalis</i>), Eastern hemlock (<i>Tsuga canadensis</i>), white pine (<i>Pinus strobus</i>), and black cherry (<i>Prunus serotina</i>).</p> <p>Understory: includes Manitoba maple, common buckthorn, sugar maple, chokecherry, tartarian honeysuckle, Eastern white cedar, downy thorn (<i>Crataegus mollis</i>), English hawthorn (<i>Crataegus monogyna</i>), and alternate-leaved dogwood (<i>Cornus alternifolia</i>).</p> <p>Ground Cover: includes riverbank grape, Pennsylvania sedge (<i>Carex pensylvanica</i>), red raspberry (<i>Rubus idaeus</i>), white avens, tartarian honeysuckle, and yellowish enchanter's nightshade (<i>Circaea lutetiana</i>).</p>	<ul style="list-style-type: none"> • Tree cover > 60% (FO). • Deciduous trees > 75% of canopy cover (D). • Moderately moist to fresh moisture regime, sugar maple dominant (6). • Hardwood associates (-5).
FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	<p>Canopy: includes white willow (<i>Salix alba</i>), and Manitoba maple.</p> <p>Understory: includes Manitoba maple, guelder rose, and riverbank grape.</p> <p>Ground cover: includes creeping Charlie (<i>Glechoma hederacea</i>), cow parsnip (<i>Heracleum maximum</i>), and ostrich fern (<i>Matteuccia struthipoteris</i> var. <i>pensylvanica</i>).</p>	<ul style="list-style-type: none"> • Tree cover > 60% (FO). • Deciduous trees > 75% of canopy cover (D). • Moist to fresh moisture regime. Middle to lower slopes, seepage areas and bottomlands topographic positions (7). • Culturally influenced, associated with riparian zone (-3).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
FOM	Mixed Forest		
FOM3-2	Dry-Fresh Sugar Maple-Hemlock Mixed Forest	<p>Canopy: includes sugar maple, white ash, ironwood (<i>Ostrya virginiana</i>), and Eastern hemlock.</p> <p>Understory: includes sugar maple, common buckthorn (<i>Rhamnus cathartica</i>), and basswood.</p> <p>Ground Cover: includes sugar maple, common buckthorn, basswood, chokecherry (<i>Prunus virginiana</i> var. <i>virginiana</i>), riverbank grape (<i>Vitis riparia</i>) and garlic mustard (<i>Alliaria petiolata</i>).</p>	<ul style="list-style-type: none"> • Tree cover > 60% (FO). • Conifer tree species > 25% and deciduous tree species > 25% of canopy cover (M). • Moderately dry to fresh soil moisture regime. Typically found on slopes with adequate moisture (3). • Hemlock with sugar maple > 25% of canopy cover and other hardwood associates (-2).
FOM6-1	Fresh-Moist Sugar Maple-Hemlock Mixed Forest	<p>Canopy: includes sugar maple, Eastern hemlock, and bitternut hickory (<i>Carya cordiformis</i>).</p> <p>Understory: includes ironwood (<i>Ostrya virginiana</i>), chokecherry, white ash, sugar maple, and common buckthorn.</p> <p>Ground cover: includes sugar maple, ironwood, bitternut hickory, common buckthorn, white ash, white avens, sedge (<i>Carex</i> sp.) and zig-zag goldenrod (<i>Solidago flexicaulis</i>).</p>	<ul style="list-style-type: none"> • Tree cover > 60% (FO). • Conifer tree species > 25% and deciduous tree species > 25% of canopy cover (M). • Moist to very fresh soil moisture. Middle to lower slopes, seepage areas and bottomland (6). • Hemlock with sugar maple > 25% of canopy cover and other hardwood associates (-1).
FOM7	Fresh-Moist White Cedar-Hardwood Mixed Forest	<p>Canopy: includes sugar maple, common buckthorn, Eastern white cedar, white pine, beech (<i>Fagus grandifolia</i>), burr oak (<i>Quercus macrocarpa</i>), black cherry, ironwood and balsam poplar (<i>Populus balsamifera</i>).</p> <p>Understory: includes common buckthorn, Eastern white cedar, chokecherry, and guelder rose (<i>Viburnum opulus</i>).</p> <p>Ground cover: includes common buckthorn, Pennsylvania sedge, Canada thistle (<i>Cirsium arvense</i>), garlic mustard, sugar maple and dandelion (<i>Taraxacum officinale</i>).</p>	<ul style="list-style-type: none"> • Tree cover > 60% (FO). • Conifer tree species > 25% and deciduous tree species > 25% of canopy cover (M). • Moist to very fresh moisture regime. Middle to lower slopes, seepage areas and bottomlands (7).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
BLO	Open Bluff		
BLO1	Mineral Open Bluff	<p>Canopy: includes black walnut (<i>Juglans nigra</i>), white ash, red maple (<i>Acer rubrum</i>), trembling aspen (<i>Populus tremuloides</i>), and white elm (<i>Ulmus americana</i>).</p> <p>Understory: includes black walnut, trembling aspen, staghorn sumac (<i>Rhus typhina</i>), Manitoba maple, chokecherry, and tartarian honeysuckle.</p> <p>Ground cover: includes Canada goldenrod, wild carrot (<i>Daucus carota</i>), Canada thistle, black walnut, orchard grass (<i>Dactylis glomerata</i>), coltsfoot (<i>Tussilago farfara</i>), and white sweet clover (<i>Melilotus alba</i>).</p>	<ul style="list-style-type: none"> • Tree cover <25%; shrub cover <25% (BL). • Subject to ongoing erosional processes. • Substrate of sand, coarse loam, fine loam or clay (1).
BBS	Shrub Beach/Bar		
BBS1	Mineral Shrub Beach/Bar	<p>Understory: includes sandbar willow (<i>Salix exigua</i>), and Missouri willow (<i>Salix eriocephala</i>).</p>	<ul style="list-style-type: none"> • Tree cover ≤25%; and shrub cover >25%. Active processes less severe, woody species invasion is limited to shrubs (BBS). • Cover varies from patchy and barren to continuous thicket (1).
TERRESTRIAL – CULTURAL			
CUM	Cultural Meadow		
CUM1-1 (a-1)	Dry-Moist Old Field Meadow	<p>Emergent Trees/Shrubs: includes black walnut, willow (<i>Salix sp.</i>), red-osier dogwood (<i>Cornus sericea</i> ssp. <i>sericea</i>), common buckthorn, and Manitoba maple.</p> <p>Ground cover: includes curly-leaf dock (<i>Rumex crispus</i>), wild carrot, reed canary grass (<i>Phalaris arundinacea</i>), awnless brome (<i>Bromus inermis</i> ssp. <i>inermis</i>), and common mullein (<i>Verbascum thapsus</i>).</p>	<ul style="list-style-type: none"> • Cultural communities (CU). • Tree cover and shrub cover < 25% (M). • Mineral soil (1). • This community can occur on a wide range of soil moisture regimes (Dry-Moist) (-1).
CUS1	Cultural Savannah		
CUS1 (a-b)	Mineral Cultural Savannah	<p>Canopy: includes Manitoba maple, trembling aspen, white ash, and black walnut.</p> <p>Understory: includes Manitoba maple, red ash (<i>Fraxinus pennsylvanica</i>), common buckthorn, white ash, and Russian olive (<i>Elaeagnus angustifolia</i>).</p> <p>Ground cover: includes spotted touch-me-not (<i>Impatiens capensis</i>), Kentucky bluegrass, Canada goldenrod, dame’s rocket, sugar maple, orchard grass, and yellowish enchanter’s nightshade.</p>	<ul style="list-style-type: none"> • Cultural communities (CU). • Tree cover <25% shrub cover >25% (S). • Mineral soil (1).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
CUT1	Cultural Thicket		
CUT1 (a-i)	Mineral Cultural Thicket	<p>Canopy: includes common buckthorn, hawthorn (<i>Crataegus sp.</i>), sugar maple, white spruce (<i>Picea glauca</i>), white ash, black walnut, black locust, Manitoba maple, basswood and white elm.</p> <p>Understory: includes common buckthorn, riverbank grape, black walnut, burr oak, black locust, Russian olive, inserted Virginia-creeper (<i>Parthenocissus vitacea</i>) and tartarian honeysuckle.</p> <p>Ground cover: includes Canada goldenrod, Canada thistle, bird's-foot trefoil (<i>Lotus corniculatus</i>), wild teasel (<i>Dipsacus fullonum ssp. Sylvestris</i>), common buckthorn, awnless brome, Kentucky bluegrass and common milkweed (<i>Asclepias syriaca</i>).</p>	<ul style="list-style-type: none"> • Cultural community (CU). • Tree cover <25%; shrub cover >25% (T). • Mineral soil (1). • Pioneer community resulting from, or maintained by, anthropogenic-based influences.
CUW	Cultural Woodland		
CUW1 (a-g)	Mineral Cultural Woodland	<p>Canopy: includes Eastern hemlock, sugar maple, white ash, black cherry, black maple, black locust, white elm, Manitoba maple, white spruce and Eastern white cedar.</p> <p>Understory: includes common buckthorn, basswood, English hawthorn, large-fruited hawthorn (<i>Crataegus punctata</i>), Russian olive, riverbank grape and Manitoba maple.</p> <p>Ground cover: includes Virginia creeper, sugar maple, Canada goldenrod, yellow avens (<i>Geum aleppicum</i>), Pennsylvania sedge, garlic mustard, Kentucky bluegrass, and Canada thistle.</p>	<ul style="list-style-type: none"> • Cultural communities (CU). • 25% < tree cover < 35% (W). • Mineral soil (1). • Pioneer community resulting from, or maintained by, anthropogenic-based influences.
CUP	Cultural Plantation		
CUP3	Coniferous Plantation	<p>Canopy: includes white spruce (<i>Picea glauca</i>), white pine (<i>Pinus strobus</i>), and Scotch pine (<i>Pinus sylvestris</i>).</p> <p>Understory: includes white spruce, and eastern white cedar.</p> <p>Ground cover: includes reed canary grass, and zig-zag goldenrod.</p>	<ul style="list-style-type: none"> • Cultural community (CU). • Planted tree cover (Plantation) > 60% (P). • Coniferous trees > 75% of canopy cover (3).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
CUT/CUM*			
CUM1-1 /CUT1	Mineral Cultural Thicket/Dry-Moist Old Field Meadow	<p>Canopy: includes trembling aspen, large-tooth aspen (<i>Populus grandidentata</i>), Manitoba maple, silver maple (<i>Acer saccharinum</i>), and white elm.</p> <p>Understory: includes Manitoba maple, guelder rose, silver aspen (<i>Populus alba</i>), large-tooth aspen, common buckthorn, and multiflora rose (<i>Rosa multiflora</i>).</p> <p>Ground cover: includes bird's-foot trefoil, white sweet clover, wild carrot, wild teasel, tufted vetch, Canada goldenrod, red clover (<i>Trifolium pratense</i>), Canada thistle and great burdock (<i>Arctium lappa</i>).</p>	<ul style="list-style-type: none"> • Cultural communities (CU). • Tree cover and shrub cover < 25% (M) / Tree cover <25%; shrub cover >25% (T). • Shrub cover transitioning. • Mineral soil (1). • Community can occur on a wide range of soil regimes (Dry-Moist) (-1).
CUT/CUW*	Cultural Thicket/Cultural Woodland		
CUT1/CUW1 (a-b)	Mineral Cultural Thicket/Mineral Cultural Woodland	<p>Canopy: includes willow, Manitoba maple, white elm, and English hawthorn.</p> <p>Understory: includes black locust, Manitoba maple, tartarian honeysuckle, English hawthorn, common buckthorn, staghorn sumac, Russian olive, white elm and riverbank grape.</p> <p>Ground cover: includes orchard grass, wild teasel, Canada goldenrod, tufted vetch (<i>Vicia cracca</i>), purple loosestrife (<i>Lythrum salicaria</i>), Kentucky bluegrass, and wild carrot.</p>	<ul style="list-style-type: none"> • Cultural communities (CU). • Tree cover <25%; shrub cover >25% (T)/ 25% < tree cover < 35% (W). • Tree cover and shrub transitioning. • Mineral soil (1).
WETLAND			
SWD	Deciduous Swamp		
SWD4-1 (a-c)	Willow Mineral Deciduous Swamp	<p>Canopy: includes red oak (<i>Quercus rubra</i>), basswood, crack willow (<i>Salix fragilis</i>), black walnut, basswood, and Manitoba maple.</p> <p>Understory: includes crack willow, Manitoba maple, riverbank grape, common buckthorn, sugar maple, and red oak.</p> <p>Ground cover: includes white vervain (<i>Verbena urticifolia</i>), spotted touch-me-not, riverbank grape, ostrich fern, white avens, creeping Charlie, Canada goldenrod, wild carrot, awnless brome, bird's-foot trefoil, reed canary grass, and bull thistle (<i>Cirsium vulgare</i>).</p>	<ul style="list-style-type: none"> • Tree or shrub cover >25% and dominated by hydrophytic shrub and tree species (SW). • Deciduous tree cover >75% of canopy cover. • Less common associations of willow and associated hardwoods. Areas where flooding duration is short. Common in floodplains (4). • Willow dominant swamp (-1).
SA	Shallow Water		
SAS1	Submerged Shallow Aquatic	Submerged: includes coontail (<i>Ceratophyllum demersum</i>).	<ul style="list-style-type: none"> • Water depth up to 2 m. Standing water always present (SA). • Dominated (>25%) by submerged macrophytes (S1).

TABLE 1.
SUMMARY OF ECOLOGICAL LAND CLASSIFICATION VEGETATION COMMUNITIES

ELC Code	Vegetation Type	Species Association	Community Characteristics
MAS	Shallow Marsh		
MAS2	Mineral Shallow Marsh	Emergent Trees/Shrubs: includes willows (<i>Salix spp.</i>), Ground cover: dominated by reed canary grass.	<ul style="list-style-type: none"> • Tree and shrub cover <25%. Hydrophytic emergent macrophyte cover >25% with variable flooding regimes (water depth <2m) (MA). • Water up to 2 m deep (S). • Mineral soil (2).
MAS2-1 (a and b)	Cattail Mineral Shallow Marsh	Emergent Trees/Shrubs: includes crack willow, red ash, and common elderberry (<i>Sambucus nigra ssp. canadensis</i>). Ground cover: includes narrow-leaved cattail (<i>Typha angustifolia</i>), purple loosestrife, common reed (<i>Phragmites australis</i>), wild teasel, spotted touch-me-not, fowl meadow grass (<i>Glyceria striata</i>) and reed canary grass.	<ul style="list-style-type: none"> • Tree and shrub cover <25%. Hydrophytic emergent macrophyte cover >25% with variable flooding regimes (water depth <2m) (MA). • Water up to 2 m deep (S). • Mineral soil (2). • Cattails dominant (-1).
MAM	Meadow Marsh		
MAM2 (a-d)	Mineral Meadow Marsh	Emergent Trees/Shrubs: includes tartarian honeysuckle, common buckthorn, crack willow, and pussy willow (<i>Salix discolor</i>). Ground cover: includes reed canary grass, narrow-leaved cattail, purple loosestrife, bulrushes (<i>Scirpus spp.</i>), Canada goldenrod, Canada thistle, wild teasel, and fowl meadow grass (<i>Poa palustris</i>).	<ul style="list-style-type: none"> • Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). • Flooding seasonal. Species less tolerant of prolonged flooding (M). • Mineral soil (2).
MAM2-2 (a and b)	Reed-canary Grass Mineral Meadow Marsh	Emergent Trees/Shrubs: includes willow species. Ground cover: includes narrow-leaved cattail, blue vervain (<i>Verbena hastata</i>), reed canary grass, common reed, purple loosestrife, New England aster (<i>Symphotrichum novae-angliae</i>), and Dudley's rush (<i>Juncus dudleyi</i>).	<ul style="list-style-type: none"> • Tree and shrub cover <25% with variable flooding regimes (water depth <2m) (MA). • Flooding seasonal. Species less tolerant of prolonged flooding (M). • Mineral soil (2). • Reed-canary grass dominant (-2).
MAM/MAS*	Meadow Marsh/Shallow Marsh		
MAM2/MAS2 (a-b)	Meadow Marsh/Shallow Marsh	Emergent Trees/Shrubs: includes English hawthorn, chokecherry, tartarian honeysuckle, white elm, and guelder rose. Ground cover: includes narrow-leaved cattail, curly-leaf dock (<i>Rumex crispus</i>), common reed, purple loosestrife, reed canary grass, bitter nightshade (<i>Solanum dulcamara</i>), spotted touch-me-not, and Canada thistle.	<ul style="list-style-type: none"> • Tree and shrub cover <25% (water depth <2m). Hydrophytic emergent macrophyte cover > 25%. Variable flooding (MA). • Flooding seasonal. Species less tolerant of prolonged flooding (M). • Water up to 2 m deep (S). • Mineral soil (2).

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

ELC Code	Vegetation Type	Species Association	Community Characteristics
OAO	Open Aquatic		• No macrophyte vegetation, no tree or shrub cover (OAO).
OTHER**			
Planted	Manicured lawns for sports fields, hedgerows, etc.		
M	Manicured grasses and planted shrubs and/or trees	Areas where large expanses of grass/shrubs/trees are maintained and/or planted. Trees/shrubs: includes black walnut, white elm, red-osier dogwood, chokecherry, Manitoba maple and red ash.	
SWM	Stormwater Management Pond	Bermed areas surrounding pond typically planted with shrub / tree species. Ground flora often consists of disturbance tolerant species immigrated from the adjacent landscape. Water's edge typically surrounded by common reed and cattails.	
Ag	Agricultural fields	Large agricultural fields planted with corn (<i>Zea mays</i>), soybean (<i>Glycine max</i>), etc.	

*Combined communities typically with undefined boundaries. / **Not identified by the ELC.

thicket/cultural woodland, cultural woodland, and cultural thicket. As previously noted, combined communities were identified where these are small and/or boundaries were difficult to distinguish. Plant species within the meadow marsh communities include cattails, common reed, and reed canary grass identified variably as abundant to dominant. Other native species identified include small-fruited bulrush (*Scirpus microcarpus*) and softstem bulrush (*Schoenoplectus tabernaemontani*) which are rare within the meadow marsh habitat. Both of these species are provincially ranked as S5 with populations that are common to widespread in the province, and are respectively ranked as L5 and L4 by TRCA. Within the cultural woodland that is associated with a tributary of Spring Creek, a range of tree species were identified including English hawthorn (*Crataegus monogyna*), Manitoba maple (*Acer negundo*), black locust (*Robinia pseudo-acacia*), red and sugar maple (*Acer rubrum* and *A. saccharum*), white elm (*Ulmus americana*), white birch (*Betula papyrifera*) and white spruce (*Picea glauca*). Within the ground flora, garlic mustard (*Alliaria petiolata*) is abundant. This is a young community in transition with notable levels of disturbance including *ad hoc* paths, dumped garbage, and disturbance associated with camping. Within this woodland, narrow and intermittent strips of cattails with occasional red-osier dogwood (*Cornus sericea*) were identified as inclusions. A Mineral Shrub Beach/Bar was also identified along a tributary of Mimico Creek. This community is distinguished by sparse canopy cover (<25%) of shrubs including sandbar willow (*Salix exigua*) and Missouri willow (*S. eriocephala*). This area appears to be intermittently disturbed due to erosion and deposition. Overall, vegetation communities within Segment C are heavily influenced by local land use practices including industrial and residential development, and agriculture.

Segment D: East of Torbram Road to East of Goreway Drive

Across Segment D, agricultural fields and cultural meadow habitat are dominant, and disturbance tolerant plant species are abundant to dominant within the cultural meadow. Two warmwater tributaries of Mimico Creek cross this portion of the study area. Habitat along the tributary just east of Torbram Road includes a reed canary mineral meadow marsh. Along the tributary east of the railway tracks, habitat includes cultural thicket. Shrub species abundant to dominant within this community include common buckthorn (*Rhamnus cathartica*), tartarian honeysuckle (*Lonicera tatarica*), large-fruited hawthorn (*Crataegus punctata*), and vines like riverbank grape (*Vitis riparis*). Emergent tree species include black walnut (*Juglans nigra*), white elm and Manitoba maple. Overall, vegetation communities within this Segment D are heavily influenced by local land use practices including industrial and residential development, and agriculture.

Segment E: East of Goreway Drive to East of Highway 427

Across Segment E, agricultural fields and cultural habitat including cultural meadow, cultural savannah, and cultural thicket are dominant, with disturbance tolerant plant species abundant to dominant within the cultural habitats. Two warmwater tributaries bisect this portion of the study area. A tributary of Mimico Creek with intermittent flow is associated with cultural thicket just west of Gorewood Drive. Further east is the permanently flowing West Humber Creek and habitat associated with this watercourse includes shallow marsh habitat identified within the floodplain. Plant species abundant to dominant within the shallow marsh communities include common reed and cattails. Immediately east of the floodplain is a portion of a cultural plantation that includes white spruce (*Picea glauca*), white pine (*Pinus strobus*) and Scotch pine (*P. sylvestris*). Overall, vegetation communities within Segment E are influenced by local land use practices including industrial and residential development, and agriculture.

Segment F: East of Highway 427 to just East of Martin Grove Road

Across Segment F, agricultural fields and cultural meadow habitat are dominant, and disturbance tolerant plant species are abundant to dominant within the cultural meadow. Emergent trees within the meadow habitat include Scotch pine, sugar maple (*Acer saccharum* var. *saccharum*) and Manitoba maple. Albion Creek, a warmwater intermittent watercourse traverses the study area, bisecting the cultural meadow.

Overall, vegetation communities within Segment F are heavily influenced by local land use practices including industrial and residential development, and agriculture.

Segment G: Just East of Martin Grove Road to West of Islington Avenue

Across Segment G, cultural meadow habitat, and a large natural area which consist of a variety of vegetation community types that are associated with the Woodbridge Cut ESA and the Woodbridge Pleistocene Cut Earth Science ANSI (see **Figure 2c**), are dominant. Within the cultural meadow, disturbance tolerant plant species are abundant to dominant. Associated with the ANSI and ESA is a Calcareous Fine Mineral Open Bluff which is largely devoid of vegetation, but where established, plant species include black walnut, chokecherry (*Prunus virginiana*), staghorn sumac (*Rhus typhina*), Canada goldenrod (*Solidago canadensis*), wild carrot (*Daucus carota*), and white clover (*Trifolium repens*). The associated natural area, largely located on a ridge, is greater than 10 ha and is bisected by tributaries of the Humber River and Rainbow Creek, which are a mix of coldwater and warmwater watercourses. Vegetation communities along these watercourses, within the low-lying areas, include Cattail Mineral Shallow Marsh, meadow marsh, and Willow Mineral Deciduous Swamp communities. The Cattail Mineral Meadow Marsh is dominated by cattails (*Typha angustifolia*) and common reed, and other species include purple loosestrife (*Lythrum salicaria*), spotted touch-me-not (*Impatiens capensis*) and reed canary grass. Species within the meadow marsh include common reed. Other communities identified on the ridge, which is a result of modern and older alluvial deposits, included a Sugar Maple-Hemlock Mixed Forest, Sugar Maple-Hardwood Deciduous Forest, and cultural woodland. Many of these vegetation communities have a notable presence of native plant species which were observed as rare to abundant, and these included sugar maple, Eastern hemlock (*Tsuga canadensis*), and ironwood (*Ostrya virginiana*). Within the associated ground flora, a diverse range of species was also identified including zig-zag goldenrod (*Solidago flexicaulis*), blue-stem goldenrod (*Solidago caesia*), giant goldenrod (*Solidago gigantea*), white snakeroot (*Ageratina altissima* var. *altissima*), hog peanut (*Amphicarpaea bracteata*), and stellate sedge (*Carex rosea*). Within the northern portion of the natural area and within low-lying areas, disturbance tolerant species were notable within respective vegetation communities. These communities include a Mineral Cultural Thicket that is dominated by common buckthorn, a Cultural Woodland where Manitoba maple and common buckthorn are occasional to abundant in the sub-canopy and shrub layers, and a Willow Lowland Deciduous Forest where Manitoba maple is abundant within the sub-canopy. Ground flora species identified within this Willow Lowland Deciduous Forest includes cow-parsnip (*Heracleum maximum*), ostrich fern (*Matteuccia struthiopteris* var. *pennsylvanica*), creeping Charlie (*Glechoma hederacea*), and moneywort (*Lysimachia nummularia*); all of which are occasional to abundant.

Within Segment G, vegetation communities adjacent to the natural area are typically influenced by local land use practices. Overall, disturbance within the large natural area included *ad hoc* paths and dumped garbage, and the colonization of several invasive species including common reed and garlic mustard.

Segment H: West of Islington Avenue to immediately East of Highway 400

Across Segment H, agricultural fields and cultural meadow are dominant, with disturbance tolerant plant species abundant to dominant within the cultural habitats. One warmwater tributary of the Lower Humber River is located between Pine Valley Drive and Weston Road, along which a meadow marsh community was identified. Common reed is dominant within this plant community. Overall, vegetation communities within Segment H are heavily influenced by local land use practices including industrial and residential development, and agriculture.

3.2.3.3 Flora

A total of 230 plant species were recorded within the study area, however, 12 of these plants could only be identified to genus. Of the 218 plants identified to species, 136 are native (62%) and 82 are non-native

(38%). 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 within the surrounding area including residential, 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 non-native and/or invasive plant species.

Higher quality vegetation communities with a more diverse range of native species, particularly forest and wetland communities, were associated with Lower Humber River and Rainbow Creek. These communities were identified within the vicinity of the Woodbridge Pleistocene Cut ANSI and Woodbridge Cut ESA, and are located on a ridge that is a result of modern and older alluvial deposits.

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**.

3.2.3.4 Species at Risk

No plant species at risk (listed as ‘Threatened’, ‘Endangered’, or ‘Species of Special Concern’) were identified within the study area during field investigations undertaken in 2016.

Butternut trees (*Juglans cinerea*) were identified in the vicinity of the study area based on a review of the MNRF Natural Heritage Information Centre (NHIC 2015), data from TRCA, a letter received from the MNRF dated February 4, 2016, and an email received from the MNRF on January 10, 2018. No plant species at risk occurrence records were provided by CVC. The information received indicates that one butternut has been recorded in the study area, however, the exact location of that record is unknown (see **Table 2**). Several of these element occurrence records are north of 407 ETR and outside of the study area. Two butternut records with potential to be located within the study area are highlighted in **Table 2**.

TABLE 2.
SUMMARY OF BUTTERNUT ELEMENT OCCURRENCE RECORDS WITHIN THE STUDY AREA

Occurrence Approximate Location	Date Last Observed	Source
Northwest quadrant of 407 ETR and Highway 427	2002	NHIC
South side of 407 ETR at Kipling Avenue	2006	NHIC
North side of 407 ETR at Kipling Avenue	2012	TRCA
South side of 407 ETR at Islington Avenue	2006	NHIC
Northwest quadrant of 407 ETR and Highway 50	2012	TRCA

A search for butternut, which is regulated as ‘Endangered’ by both the Canada *Species at Risk Act* (SARA) and the Ontario *Endangered Species at Risk Act, 2007* (ESA), was undertaken within the vicinity of the south side 407 ETR and Kipling Avenue (Segment G), and within the vicinity of 407 ETR and Islington Avenue (Segment G). However, no butternut trees were identified during these field investigations, nor were any butternut trees identified during additional field investigations carried out throughout the remainder of the study area.

A total of 21 TRCA plant species of concern (L1 to L3) and species identified as rare in York and Peel Regions, were identified within several communities associated with the study area. **Table 3** presents a summary of these species with their approximate locations within the study area.

Appendix F presents correspondence with the MNRF, TRCA and CVC related to terrestrial ecosystems.

TABLE 3.
SIGNIFICANT PLANT SPECIES RECORDED WITHIN THE STUDY AREA

Plant Community	Scientific Name	Common Name	Rarity Status ¹			Study Area Segments ²								Stations ³						
			TRCA	Peel	York	A	B	C	D	E	F	G	H	1	2	3	4	5	6	7
CUS1b, SWD4-1b	<i>Equisetum pratense</i>	meadow horsetail	L3	R7	R8							x								
CUM1-1a, CUP3, CUS1a, CUT1f, CUW1a, CUW1d	<i>Picea glauca</i>	white spruce	L3	R3		x		x		x		x								
SWD4-1b	<i>Pilea fontana</i>	spring clearweed	L3	R3	U							x								
FOM3-2	<i>Carya ovata</i> var. <i>ovata</i>	shagbark hickory	L3		X-SR							x								
BLO1, CUM1-1b, CUM1-1j, CUS1a, CUS1b, CUT1d, CUT1g, CUW1d, CUW1e, CUW1f, FOM6-1, SWD4-1a, SWD4-1b	<i>Juglans nigra</i>	black walnut	L5		R		x		x	x		x								
CUM1-1c, FOD6-5b, Manicured	<i>Quercus alba</i>	white oak	L2		R6		x	x				x								
MAS2-1b	<i>Persicaria pensylvanicum</i>	Pennsylvania smartweed	L4	R3								x								
CUT1/CUW1, CUT1h, CUW1d	<i>Salix exigua</i>	sandbar willow	L5	R5			x					x								
BLO1, CUS1b, CUW1c, CUW1e, FOD6-5b, FOM6-1	<i>Fragaria virginiana</i> ssp. <i>virginiana</i>	scarlet strawberry	L5		R4								x							
CUM1-1d	<i>Physocarpus opulifolius</i>	ninebark	L3	R1				x												
CUM1-1f, CUM1-1i, CUS1a, MAS2-1b	<i>Oenothera biennis</i>	common evening-primrose	L5	U	R6			x		x	x	x								
FOD6-5a	<i>Cornus</i>	alternate-leaved	L5		R1															

TABLE 3.
SIGNIFICANT PLANT SPECIES RECORDED WITHIN THE STUDY AREA

Plant Community	Scientific Name	Common Name	Rarity Status ¹			Study Area Segments ²								Stations ³											
			TRCA	Peel	York	A	B	C	D	E	F	G	H	1	2	3	4	5	6	7					
	<i>alternifolia</i>	dogwood																							
FOM6-1	<i>Euonymus obovata</i>	running strawberry-bush	L3											x											
BLO1, CUM1-1b, CUM1-1d, CUW1a, SWD4-1a	<i>Acer rubrum</i>	red maple	L4		R5		x	x						x											
CUM1-1j, CUT1g, CUW1e, FOD4, FOD6-5a	<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	poison-ivy	L5		R3									x											
SWD4-1b	<i>Impatiens pallida</i>	pale touch-me-not	L4	R8										x											
FOD7-3	<i>Heracleum maximum</i>	cow-parsnip	L5	R4										x											
SWD4-1a	<i>Hydrocotyle americana</i>	American marsh-pennywort	L3	U										x											
SWD4-1a	<i>Teucrium canadense</i> var. <i>canadense</i>	wood germander	L3	R5										x											
BLO1, CUM1-1a, SWD4-1a	<i>Erigeron philadelphicus</i> var. <i>philadelphicus</i>	Philadelphia fleabane	L5		R10		x							x		x									
FOM7	<i>Allium tricoccum</i>	wild leek	L3											x											

¹ Refer to **Appendix E** for Acronyms and Definitions used in species lists.

² Segments delineated across the study area are outlined in Section 3.2.3.2, and presented on Figures 2a to 2c.

³ Stations are presented on Figures 2a to 2c.

3.3 Wildlife and Wildlife Habitat

3.3.1 Purpose

An investigation of the wildlife and wildlife habitat found in the study area was carried out using secondary source information, air photo interpretation and field surveys. The TRCA, CVC, MNRF, Aurora District Office, and Ontario Nature were contacted to request fauna element occurrence data. Information concerning wildlife species at risk previously recorded within the study area limits was obtained from the Natural Heritage Information Centre (NHIC), TRCA, Breeding Bird Atlas, and from the MNRF, Aurora District Office in a letter dated February 4, 2016 and an email dated January 10, 2018. Data provided by MNRF and TRCA provided element occurrence records for an array of wildlife species, including species at risk. CVC also provided element occurrence records for fauna; however, the records provided were all located outside of the study area and consequently are not included. Ontario Nature provided reptile and amphibian data in an email dated November 24, 2015. More general information relating to wildlife and wildlife habitat was obtained following a review of published and non-published sources, including avian data obtained from Bird Studies Canada.

The overall study area for the initial wildlife and wildlife habitat secondary source existing conditions investigation included all habitats within a one-kilometre-wide corridor centred along 407 ETR within the study area (see **Figure 1**). Detailed field investigations to document wildlife and wildlife habitat were conducted by LGL in late spring/early summer of 2016 and focused on the facility footprint, including the proposed preferred Transitway alignments/station locations and adjacent lands up to 120 m (north and south) from the future infrastructure footprint (see **Figures 2a, 2b and 2c**), all located south of the 407 ETR. Surveys conducted included targeted anuran (frog and toad) and breeding bird surveys following provincially-recognized protocols such as the Ontario Marsh Monitoring Program and the Ontario Breeding Bird Atlas Protocol. Incidental observations of wildlife were also recorded during all field investigations.

A summary of 2016 survey dates, tasks, weather and survey personnel is presented in **Table 4**.

TABLE 4.
SUMMARY OF DATE OF WILDLIFE INVENTORY, TASK, WEATHER AND PERSONNEL

Date of Inventory	Task	Weather	Personnel Involved
May 19, 2016	Anuran survey	Partial cloud cover, 18 ^C , calm	David Smith (LGL) Samantha Delargy (LGL)
May 30, 2016	Breeding bird survey and incidental wildlife survey	Partial cloud cover, 22 ^C , calm	David Smith (LGL)
June 3, 2016	Breeding bird survey and incidental wildlife survey	Clear, 16 ^C , calm	Judson Venier (LGL)
June 16, 2015	Anuran survey	Clear, 24 ^C , calm	Stephanie Lillie (LGL) Samantha Delargy (LGL)
June 15, 2016	Breeding bird survey and incidental wildlife survey	Overcast, 13 ^C , calm	Judson Venier (LGL)
June 23, 2016	Breeding bird survey, incidental wildlife survey and anuran survey	Clear, 15 ^C , calm	Judson Venier (LGL)
June 28, 2016	Breeding bird survey and incidental wildlife survey	Clear, 17 ^C , calm	Judson Venier (LGL)
June 29, 2016	Breeding bird survey and incidental wildlife survey	Clear, 17 ^C , calm	Judson Venier (LGL)

3.3.2 Data Sources

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

- Bird Studies Canada. *Ontario Breeding Bird Atlas*. Website available online at: <http://www.birdsontario.org/atlas/index.jsp>. Accessed November 2015;
- Bird Studies Canada. *The Marsh Monitoring Program*. Website available at <http://www.bsc-eoc.org/download/mmpqualplan.pdf>. Accessed March 2017;
- 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;
- Harding, J. H. 1997. *Amphibians and Reptiles of the Great Lakes Region*. The University of Michigan Press, Michigan. 378 pp;
- Kurta, Allen. 1995. *Mammals of the Great Lakes Region*. University of Michigan;
- Metrolinx, City of Mississauga, City of Brampton. 2014. *Hurontario- Main LRT Project - Preliminary Design/TPAP Environmental Project Report*;
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- Nagorsen, D.W. and R.M Brigham. 1993. *Bats of British Columbia; Volume 1. The Mammals of British Columbia*. Royal British Columbia Museum Handbook. UBC Press, Vancouver, B.C.;
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- Ontario Ministry of Natural Resources and Forestry. 2015b. 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 February 4, 2016;
- Ontario Ministry of Natural Resources and Forestry, Aurora District Office. 2018. Species at Risk data provided on January 10, 2018;
- Ontario Ministry of Transportation. 2015. *Environmental Guide for Wildlife Mitigation*;
- Ontario Nature. Ontario Reptile and Amphibian Atlas data provided on November 24, 2015;

- Toronto and Region Conservation Authority. 2016. Data provided on January 5, 2016; and,
- Field investigations carried out by LGL Limited on various dates in 2016.

3.3.3 Findings

3.3.3.1 Wildlife Habitat

There are many natural heritage features located within the study area between west of Hurontario Street and east of Highway 400, in particular where watercourses/valleylands are found. Valleylands associated with Etobicoke Creek West Branch (E5), West Humber River (H1), Mimico Creek (M7), Rainbow Creek (H6), and the Lower Humber River (H7) make up the highest quality natural heritage features in the study area and provide important north-south movement corridors for wildlife. These north-south naturalized linkages provide increased opportunity for wildlife utilization of habitats within and adjacent to the study area. Interspaced between these larger more contiguous natural heritage features are numerous open-country habitat types such as cultural meadows, thickets, woodlands and savannahs, agricultural lands and several aquatic habitat types (meadow marsh, shallow marsh, deciduous swamp, shallow aquatic and open aquatic).

Overall, larger and more contiguous natural areas within the study area are restricted to several areas but, where present, support a moderate diversity of wildlife species. Important habitat connectivity is achieved by a number of north-south running valleylands (Etobicoke Creek West Branch (E5), West Humber River (H1), Mimico Creek (M7), Rainbow Creek (H6), and the Lower Humber River (H7)) as described above, as well as the valleylands of the other watercourses located within the study area (including Tributary of Fletchers Creek (C1), Tributary of Spring Creek (E7), Spring Creek (E8), and Albion Creek (H2) and their tributaries). However, outside of these valleylands, the landscape is highly disturbed and supports limited 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 preliminary analysis of the woodlands was undertaken to determine the location and size of interior forest habitat within the overall study area, which is generally defined as forested cover at least 100 m from non-forested land cover. For the initial overall study area, air photo interpretation was completed and data from Land Information Ontario was analyzed to delineate forested vegetation communities. Interior forest habitat is limited to two small areas, both of which are located north of 407 ETR beyond the limits of the study area for the detailed field investigations, including forested areas associated with the West Humber River valleyland (north of 407 ETR and west of Highway 50) and the Lower Humber River valleyland (north of 407 ETR and west of Islington Avenue). No interior forest habitat was identified within the detailed field investigation study area; the lack of interior forest habitat illustrates the highly disturbed nature of the forested areas within the study area. However, a specialized assemblage of wildlife species (e.g., interior forest bird species) may be expected to use and rely on this habitat type.

A summary of wildlife habitat conditions for each Segment is provided below.

Segment A: West of Hurontario Street to East of Kennedy Road

Wildlife habitat in this segment was relatively diverse but consisted largely of anthropogenic influenced areas including agricultural lands, cultural meadows, a storm-water management pond, manicured lawns and industrial lands. Other aquatic features also included small watercourses, small marshes, and open aquatic habitats. Forested areas were very limited in distribution and were comprised of deciduous forest and cultural thicket habitats.

Segment B: East of Kennedy of Road to West of Tomken Road

Wildlife habitat in this segment consisted largely of highly anthropogenic influenced areas, primarily agricultural lands and cultural meadows. The Highway 410 interchange footprint is large and further adds to the disturbance in Segment B. Higher quality natural heritage features are found south of 407 ETR, along the Etobicoke Creek West valleylands; this feature 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. Other aquatic features also included small seasonal watercourses, small marshes, and open aquatic habitats. Forested areas were very limited in distribution and were comprised of cultural woodland and cultural thicket habitats, primarily situated along the Etobicoke Creek West valley.

Segment C: West of Tomken Road to East of Torbram Road

Wildlife habitat in this segment consisted largely of anthropogenic influenced areas, primarily agricultural lands, parkland, commercial/industrial lands, and cultural meadows. Higher quality natural heritage features are found south of 407 ETR, along the Etobicoke Creek West valleylands and natural features associated with Spring Creek; these features are expected to function as a locally significant wildlife movement corridor because of the linear natural areas associated with the features in an otherwise highly disturbed landscape. Other aquatic features also included small seasonal watercourses, small marshes, and open aquatic habitats. Forested areas were very limited in distribution and were comprised of cultural thicket and cultural woodland habitats, primarily situated along the Etobicoke Creek West and Spring Creek valleylands.

Segment D: East of Torbram Road to East of Goreway Drive

Wildlife habitat in this segment consisted largely of highly anthropogenic influenced areas, primarily agricultural lands, commercial/industrial lands, cultural meadows and manicured grass. Higher quality natural heritage features were restricted largely to the Mimico Creek valleylands; this feature 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. Other aquatic features also included small seasonal watercourses, small marshes, and a storm-water management pond. Forested areas were very limited in distribution and were comprised of deciduous forest habitat entirely situated along the Mimico Creek valleyland.

Segment E: East of Goreway Drive to East of Highway 427

Wildlife habitat in this segment consisted largely of anthropogenic influenced areas, primarily agricultural lands, commercial/industrial lands, and cultural meadows. Higher quality natural heritage features are situated along the West Humber River valleylands; this feature 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. Other aquatic features also included small seasonal watercourses, small marshes, and meadow marsh habitats. Forested areas were limited in distribution and were comprised of cultural plantation, cultural thicket and cultural woodland, primarily situated along the West Humber River valleylands.

Segment F: East of Highway 427 to just East of Martin Grove Road

Wildlife habitat in this segment consisted largely of highly anthropogenic influenced areas, primarily agricultural lands, commercial/industrial lands, and cultural meadows. Higher quality natural heritage features are generally absent in this highly disturbed landscape. Aquatic features are restricted to Albion Creek and small seasonal watercourses. Forested areas are absent from Segment F.

Segment G: Just East of Martin Grove Road to West of Islington Avenue

Wildlife habitat in this segment contained both anthropogenic influenced areas and extensive natural area. Disturbed lands consisted largely of agricultural lands, commercial/industrial/residential lands, parkland and cultural meadows. Higher quality natural heritage features are situated along the Lower Humber River and Rainbow Creek valleylands; this feature 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. The Woodbridge Pleistocene Cut ESA and ANSI (Woodbridge Cut) is found along a tributary of Rainbow Creek, south of 407 ETR (see **Figure 2c**). Other aquatic features also included small seasonal watercourses, small marshes and deciduous swamp. Forested areas were relatively abundant in this Segment and were comprised of deciduous forest, mixed forest and cultural thicket communities, primarily situated along the Lower Humber River and Rainbow Creek valleylands. Segment G contains the largest intact natural area and is likely to be the highest quality wildlife habitat identified within the overall study area.

Segment H: West of Islington Avenue to Immediately East of Highway 400

Wildlife habitat in this segment consisted largely of highly anthropogenic influenced areas, primarily agricultural lands, commercial/industrial lands, and cultural meadows. Higher quality natural heritage features are generally absent in this highly disturbed landscape. Several small inclusions of marshland and cultural meadow have the potential to function as wildlife habitat. Aquatic features are restricted to small seasonal watercourses (tributary of the Lower Humber River), small marshes and open aquatic habitat. Forested habitat types are absent from Segment H.

3.3.3.2 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 5**. A total of 91 wildlife species have been recorded from secondary source data and during LGL's field observations including ten herpetofauna, 67 birds and 14 mammals. Based on LGL's field observations (conducted along the proposed 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)), 60 of the 91 wildlife species could be verified including two herpetofauna, 48 birds and 10 mammals. The majority of these recordings came from identification (through calls and sightings) of bird species with more modest numbers of herpetofauna and mammal species identified. Detailed records of wildlife species which have been documented within, or in the vicinity of, the study area, have been identified through several secondary data sources and are discussed below.

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. Twelve 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 (see anuran call monitoring stations in **Figures 2a to 2c**). Anuran surveys were conducted on two separate nights during the spring and summer of 2016. The surveys began at one half hour after sunset and ended prior to midnight and were conducted during appropriate weather conditions (see **Table 4**). Surveys were completed during periods of peak anuran breeding activity and vocalization. Anuran breeding evidence was documented for two species during the 2016 surveys. Vocalizing male American Toad (*Anaxyrus americanus*) and Green Frog (*Lithobates clamitans*) 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 6**. Overall, amphibian breeding evidence observed during 2016 was limited to only two aquatic habitats including the Tributary of Etobicoke Creek

**TABLE 5.
 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 ¹	Secondary Source ²
Herpetofauna	<i>Anaxyrus americanus</i>	American Toad				L4	*	*
	<i>Pseudacris triseriata</i>	Western Chorus Frog	THR	-		L2		*
	<i>Lithobates sylvatica</i>	Wood Frog				L2		*
	<i>Lithobates pipiens</i>	Northern Leopard Frog				L3		*
	<i>Lithobates clamitans</i>	Green Frog				L4	*	*
	<i>Plethodon cinereus</i>	Red-backed Salamander			FWCA(P)	L3		*
	<i>Storeria dekayi</i>	Brownsnake				L4		*
	<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake				L4		*
	<i>Emydoidea blandingii</i>	Blanding's Turtle	THR	THR	FWCA(P)	L2		*
	<i>Chelydra serpentina</i>	Snapping Turtle	SC	SC	FWCA(P)	L2		*
Birds	<i>Aix sponsa</i>	Wood Duck			MBCA	L3		*
	<i>Anas platyrhynchos</i>	Mallard			MBCA	L5	*	
	<i>Meleagris gallopavo</i>	Wild Turkey			FWCA(P)	L2		*
	<i>Accipiter cooperii</i>	Cooper's Hawk			FWCA(P)	L4	*	*
	<i>Buteo jamaicensis</i>	Red-tailed Hawk			FWCA(P)	L5	*	
	<i>Falco sparverius</i>	American Kestrel				L4		*
	<i>Charadrius vociferus</i>	Killdeer			MBCA	L5	*	*
	<i>Actitis macularius</i>	Spotted Sandpiper			MBCA	L4	*	*
	<i>Scolopax minor</i>	American Woodcock				L3	*	*
	<i>Otus asio</i>	Eastern Screech-owl			FWCA(P)	L4		*
	<i>Chaetura pelagica</i>	Chimney Swift	THR	THR	MBCA	L5		*
	<i>Columba livia</i>	Rock Dove				L5	*	
	<i>Zenaidura macroura</i>	Mourning Dove			MBCA	L5	*	
	<i>Picoides pubescens</i>	Downy Woodpecker			MBCA	L5	*	
	<i>Picoides villosus</i>	Hairy Woodpecker			MBCA	L4		*
	<i>Colaptes auratus</i>	Northern Flicker			MBCA	L4	*	*
<i>Tyrannus tyrannus</i>	Eastern Kingbird			MBCA	L5	*	*	

**TABLE 5.
 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 ¹	Secondary Source ²
	<i>Myiarchus crinitus</i>	Great-crested Flycatcher			MBCA	L4	*	*
	<i>Contopus virens</i>	Eastern Wood Pewee	-	SC	MBCA	L4	*	*
	<i>Empidonax traillii</i>	Willow Flycatcher			MBCA	L4	*	*
	<i>Vireo gilvus</i>	Warbling Vireo			MBCA	L5	*	
	<i>Vireo olivaceus</i>	Red-eyed Vireo			MBCA	INT/L4		*
	<i>Cyanocitta cristata</i>	Blue Jay			FWCA(P)	L5	*	
	<i>Ceryle alcyon</i>	Belted Kingfisher			MBCA	L4		*
	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo			MBCA	L3		*
	<i>Poliophtila caerulea</i>	Blue-grey Gnatcatcher			MBCA	L4		*
	<i>Empidonax minimus</i>	Least Flycatcher			MBCA	L3		*
	<i>Sayornis phoebe</i>	Eastern Phoebe			MBCA	L4	*	*
	<i>Cyanocitta cristata</i>	Blue Jay			FWCA (P)	L5	*	
	<i>Corvus brachyrhynchos</i>	American Crow			MBCA	L5	*	
	<i>Eremophila alpestris</i>	Horned Lark			MBCA	L3	*	*
	<i>Stelgidoptery x serripennis</i>	Northern Rough-winged Swallow			MBCA	L4	*	*
	<i>Hirundo rustica</i>	Barn Swallow		THR	MBCA	L3	*	*
	<i>Tachycineta bicolor</i>	Tree Swallow			MBCA	L4	*	*
	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow			MBCA	L4	*	
	<i>Poecile atricapillus</i>	Black-capped Chickadee			MBCA	L5	*	*
	<i>Sitta carolinensis</i>	White-breasted Nuthatch			MBCA	SWH/L4		*
	<i>Hylocichla mustelina</i>	Wood Thrush	-	SC	MBCA	L4		*
	<i>Turdus migratorius</i>	American Robin			MBCA	L5	*	
	<i>Dumetella carolinensis</i>	Gray Catbird			MBCA	L4	*	*
	<i>Mimus polyglottos</i>	Northern Mockingbird			MBCA	L4	*	*
	<i>Sturnus vulgaris</i>	European Starling				L5	*	
	<i>Bombycilla garrulus</i>	Cedar Waxwing			MBCA	L5	*	

**TABLE 5.
 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 ¹	Secondary Source ²
	<i>Dendroica petechia</i>	Yellow Warbler			MBCA	L5	*	
	<i>Geothlypis philadelphia</i>	Mourning Warbler			MBCA	L4	*	*
	<i>Seiurus aurocapilla</i>	Ovenbird			MBCA	SWH/INT/L3		*
	<i>Setophaga ruticilla</i>	American Redstart			MBCA	SWH/L3	*	*
	<i>Geothlypis trichas</i>	Common Yellowthroat			MBCA	L4	*	
	<i>Wilsonia citrina</i>	Hooded Warbler	THR	-	MBCA	L2		*
	<i>Spizella passerina</i>	Chipping Sparrow			MBCA	L5	*	
	<i>Spizella pusilla</i>	Field Sparrow			MBCA	L3		*
	<i>Passerculus sanwicensis</i>	Savannah Sparrow			MBCA	SWH/L4	*	*
	<i>Melospiza georgiana</i>	Swamp Sparrow			MBCA	L4	*	*
	<i>Melospica melodia</i>	Song Sparrow			MBCA	L5	*	
	<i>Cardinalis cardinalis</i>	Northern Cardinal			MBCA	L5	*	
	<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak			MBCA	L4		*
	<i>Passerina cyanea</i>	Indigo Bunting			MBCA	L4	*	*
	<i>Dolichonyx oryzivorus</i>	Bobolink	THR	THR	MBCA	L3		*
	<i>Agelaius phoeniceus</i>	Red-winged Blackbird				L5	*	
	<i>Sturnella magna</i>	Eastern Meadowlark	THR	THR	MBCA	L4		*
	<i>Quiscalus quiscula</i>	Common Grackle				L5	*	
	<i>Molothrus ater</i>	Brown-headed Cowbird				L5	*	
	<i>Icterus spurius</i>	Orchard Oriole			MBCA	L5	*	*
	<i>Icterus galbula</i>	Baltimore Oriole			MBCA	L5	*	
	<i>Carpodacus mexicanus</i>	House Finch			MBCA	L5	*	
	<i>Carduelis tristis</i>	American Goldfinch			MBCA	L5	*	
	<i>Passer domesticus</i>	House Sparrow				L5	*	
Mammals	<i>Blarina brevicauda</i>	N. Short-tailed Shrew			FWCA(P)	-	*	
	<i>Tamias striatus</i>	Eastern Chipmunk			FWCA(P)	L4	*	*

**TABLE 5.
 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 ¹	Secondary Source ²
	<i>Sylvilagus floridanus</i>	Eastern Cottontail			FWCA(G)	L4	*	*
	<i>Marmota monax</i>	Groundhog				L4		*
	<i>Sciurus carolinensis</i>	Eastern Gray Squirrel			FWCA(G)	L4	*	
	<i>Tamiasciurus hudsonicus</i>	Red Squirrel			FWCA(F)	L4	*	
	<i>Castor canadensis</i>	Beaver			FWCA(F)	L3		*
	<i>Microtus pennsylvanicus</i>	Meadow Vole				L4	*	
	<i>Neovison vison</i>	American Mink			FWCA(F)	L3		*
	<i>Procyon lotor</i>	Northern Raccoon			FWCA(F)	L5	*	
	<i>Canis latrans</i>	Coyote			FWCA(F)	L4	*	
	<i>Ondatra zibethica</i>	Muskrat			FWCA(F)	L4		*
	<i>Mephitis mephitis</i>	Striped Skunk			FWCA(F)	L5	*	
	<i>Odocoileus virginianus</i>	White-tailed Deer			FWCA(G)	L4	*	*

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:

¹Species recorded within the study area during field investigations (LGL 2016).

²Species identified by secondary source data, including Ontario Reptile and Amphibian Atlas and TRCA.

Other:

Significant Wildlife Habitat Technical Guide:

- SWH – Area Sensitive Species
- INT - Interior Species
- TRCA – Toronto and Region Conservation Authority L Rank (1-5) – Sensitive Species include those ranked as L1 to L3.

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

TABLE 6.
AMPHIBIAN SURVEY OF STUDY AREA AND ADJACENT LANDS BY LGL LIMITED

Station	Scientific Name	Common Name	SARA	ESA	Local	Legal Status	Call Level Code
1*	-	-	-	-	-	-	-
2*	-	-	-	-	-	-	-
3*	-	-	-	-	-	-	-
4*	-	-	-	-	-	-	-
5*	-	-	-	-	-	-	-
6	<i>Anaxyrus americanus</i>	American Toad	-	-	L4	-	2
	<i>Lithobates clamitans</i>	Green Frog	-	-	L4	-	2
7*	-	-	-	-	-	-	-
8*	-	-	-	-	-	-	-
9*	-	-	-	-	-	-	-
10*	-	-	-	-	-	-	-
11*	-	-	-	-	-	-	-
12	<i>Anaxyrus americanus</i>	American Toad	-	-	L4	-	2
	<i>Lithobates clamitans</i>	Green Frog	-	-	L4	-	2

* 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**.

West Branch (south of 407 ETR, east of Tomken Road) and Mimico Creek (south of 407 ETR, west of Goreway Drive).

Element occurrence records for nine of the herpetofauna species previously recorded in the vicinity of the study area were obtained from the Ontario Reptile and Amphibian Atlas and the TRCA. Data from the Ontario Reptile and Amphibian Atlas indicated records for three species including Eastern Gartersnake (*Thamnophis sirtalis sirtalis*), American Toad (*Anaxyrus americanus*) and Green Frog (*Lithobates clamitans*) (Ontario Nature 2015). Data from the TRCA included records for nine species including American Toad, Green Frog, and Eastern Gartersnake (the three species listed above), as well as Northern Leopard Frog (*Lithobates pipiens*), Western Chorus Frog (*Pseudacris triseriata*), Wood Frog (*Lithobates sylvaticus*), Red-backed Salamander (*Plethodon cinereus*), Snapping Turtle (*Chelydra serpentina*), and Brownsnake (*Storeria dekayi*).

As noted above, two of the total of ten herpetofauna species (American Toad and Green Frog) were identified by LGL during the 2016 field investigations. No other/additional herpetofauna species were identified during the 2016 field investigations. Other reptile and amphibian species are expected to be found within the study area; though, an assemblage that is generally considered tolerant of anthropogenic influences is expected to be present within the lands examined.

Three species at risk herpetofauna (Western Chorus Frog, Blanding’s Turtle (*Emydoidea blandingii*) and Snapping Turtle) were identified by secondary source element occurrence records as occurring within the

vicinity of the study area, although none of these species were confirmed during LGL's 2016 surveys (see **Section 3.3.3.3** for further details on species at risk). Three herpetofauna species (Red-backed Salamander, Snapping Turtle and Blanding's Turtle) identified by secondary source element occurrence records as occurring within the vicinity of the study area are protected under the *Fish and Wildlife Conservation Act* (FWCA) (see **Table 5**), although none of these species was confirmed during LGL's 2016 surveys. Six species considered sensitive species (as defined by TRCA L Rank: 1-3) were recorded in the study area through secondary source data (see **Table 5**).

Birds

Breeding bird surveys were conducted by LGL on a number of dates during the 2016 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 (see **Table 4**). Breeding bird survey methodology and breeding bird behaviours used as evidence of breeding success were categorized according to the Breeding Bird Atlas published by Bird Studies Canada (Cadman et al., 2007). Locations of the seven breeding bird point count stations are shown on **Figures 2a to 2c**. 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 5**.

Forty-two bird species were identified as previously recorded in the immediate vicinity of the study area based on data provided by the TRCA (see **Appendix G and Table 5**). A total of 112 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 H**). 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 TRCA data is considered more representative of the habitat types found within the study area (and these species have been included in **Table 5**). Furthermore, LGL's 2016 survey results provided additional data on the bird assemblage found within the study area (see below and **Table 5**).

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 34 species of birds (see **Appendix H**). An additional 14 bird species were recorded by LGL within the study area; however due to a lack of breeding evidence, these additional observations are treated as incidental (see **Table 5**). Breeding evidence was confirmed in four species and suspected/probable in 21 species. An additional nine species were identified as having the potential to breed within the study area. Confirmed breeding by bird species was generally documented based on adults returning to nests, typically under bridge structures associated with 407 ETR. Species confirmed to be breeding include Cliff Swallow (*Petrochelidon pyrrhonota*), European Starling (*Sturnus vulgaris*), Barn Swallow (*Hirundo rustica*) and Rock Dove (*Columba livia*). A number of species (21 total) were identified as suspected/probable breeders based on 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*), Tree Swallow (*Tachycineta bicolor*), Eastern Kingbird (*Tyrannus tyrannus*) 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.

Seven species at risk birds were identified by secondary source data and two of these species (Barn Swallow and Eastern Wood Pewee) were confirmed during LGL's 2016 surveys (see **Section 3.3.3.3** for

further details on species at risk). There are also multiple species that are considered area-sensitive and/or interior species according to the Significant Wildlife Habitat Technical Guide (MNR 2000) (see **Table 5**). A number of bird species identified within the study area are protected under the *Migratory Birds Convention Act* (MBCA) and/or the FWCA (see **Table 5**). Twelve bird species which are considered sensitive species (as defined by TRCA L Rank: 1-3) were recorded in the study area (see **Table 5**).

Mammals

Ten mammal species were identified during LGL's 2016 field investigations in the study area (see **Table 5**). Northern racoon (*Procyon lotor*), white-tailed deer (*Odocoileus virginianus*) and coyote (*Canis latrans*) tracks were commonly identified along the roadside and watercourse banks, while eastern chipmunk (*Tamias striatus*), eastern gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamiasciurus hudsonicus*) and eastern cottontail (*Sylvilagus floridanus*) were observed across a variety of habitats found within the study area. Several road-killed striped skunk (*Mephitis mephitis*) and northern racoon were identified during field investigations. Northern short-tailed shrew (*Blarina brevicauda*) and meadow vole (*Microtus pennsylvanicus*) were identified in meadow communities within the study area. The mammal species documented by LGL represent an assemblage that readily utilizes human influenced landscapes.

Seven mammal species (including four not identified during LGL's 2016 field investigations: Groundhog (*Marmota monax*); North American beaver (*Castor Canadensis*); American mink (*Neovison vison*); and, muskrat (*Ondatra zibethicus*)) have been identified within the study area based on records received from TRCA. Species recorded by TRCA include these four species as well as eastern chipmunk, eastern cottontail, and white-tailed deer. Based on the habitat types present, additional mammal species which prefer open-county/agricultural, thicket, deciduous forest, coniferous forest, mixed forest, wetland, aquatic and anthropogenic habitats have the potential to be found within the study area. Generally, the mammal species expected within the study area represent an assemblage that readily utilizes human influenced landscapes.

None of the mammal species identified in the study area (by LGL's field investigations and by TRCA element occurrence data) are designated as species at risk. All of the mammal species identified within the study area (by LGL's field investigations and by TRCA element occurrence data) are protected under the FWCA with the exception of groundhog and meadow vole. Two mammal species which are considered sensitive species (as defined by TRCA L Rank: 1-3) were recorded in the study area (see **Table 5**).

3.3.3.3 Wildlife Species at Risk

A total of 14 wildlife species at risk have been recorded within the vicinity of the study area based on secondary source data and an additional two wildlife species at risk have been identified as having the potential to be found within the study area (little brown myotis and northern myotis). These secondary source records have been attributed to several data sources as described below. Two species at risk (Barn Swallow and Eastern Wood Pewee) were confirmed within the study area during LGL's 2016 field investigations.

A review of the NHIC database (MNR 2015) for rare species records indicated four species at risk (including Northern Bobwhite (*Colinus virginianus*), Eastern Meadowlark (*Sturnella magna*), Bobolink (*Dolichonyx oryzivorus*) and Snapping Turtle (*Chelydra serpentina*)) which have been previously identified in the vicinity of the study area (see **Table 7** and **Table 8**).

Wildlife occurrence record data received from the TRCA (2016) included records for 10 species at risk (three of which were identified in the NHIC data), including eight bird species (Chimney Swift (*Chaetura*

pelagica), Eastern Wood Pewee (*Contopus virens*), Bank Swallow (*Riparia riparia*), Barn Swallow (*Hirundo rustica*), Hooded Warbler (*Wilsonia citrina*), Wood Thrush (*Hylocichla mustelina*), Bobolink and Eastern Meadowlark) and two herpetofauna species (Western Chorus Frog (*Pseudacris triseriata*) and Snapping Turtle) (see **Table 8**).

Species at risk data was also received from the MNR, Aurora District Office on February 4, 2016. MNR data describes seven wildlife species at risk which have been previously recorded within the vicinity of the study area (including Barn Swallow, Eastern Meadowlark, Eastern Wood Pewee, Bobolink, Wood Thrush, Snapping Turtle and Monarch (*Danaus plexippus*)) and three additional wildlife species at risk that have the potential to be present within the study area including Bank Swallow (already mentioned above), little brown myotis (*Myotis lucifugus*), and northern myotis (*Myotis septentrionalis*) (see **Table 8**). Additional species at risk data was received from MNR, Aurora District Office on January 10, 2018. MNR noted that one additional wildlife species at risk (Blanding’s Turtle) has been recorded within the vicinity of the study area.

Breeding Bird Atlas data collected in the vicinity of the study area revealed records of several species at risk birds (Cadman *et al.* 2007). 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 or were not identified within the actual limits of the study area. A total of nine bird species at risk were recorded based on records from the Breeding Bird Atlas, including Common Nighthawk (*Chordeiles minor*) and eight others already identified above (Chimney Swift, Eastern Wood Pewee, Bank Swallow, Barn Swallow, Hooded Warbler, Wood Thrush, Bobolink and Eastern Meadowlark) (see **Table 8**).

As noted above, two species at risk (Barn Swallow and Eastern Wood Pewee) were identified at several locations across the study area by LGL during the 2016 field investigation. Based on the timing of the observations (i.e. during the breeding bird season), it is assumed that these two species are breeding within or near the study area. In fact, two Barn Swallow nesting colonies were identified near the study area (see below).

Each of the 16 species identified above, their respective legal status, biological requirements, habitat suitability of the study area, likelihood of presence within the study area and survey results (if completed) are discussed below and summarized in **Table 8**.

TABLE 7.
SUMMARY OF WILDLIFE SPECIES AT RISK ELEMENT OCCURRENCE RECORDS
BASED ON THE NHIC DATABASE

1 Km Square	Scientific Name	Common Name	1 Km Square Approximate Location	Date Last Observed
17PJ0638	<i>Colinus virginianus</i>	Northern Bobwhite	Quadrant south of 407 ETR at Bramalea Road	1905
17PJ0637	<i>Colinus virginianus</i>	Northern Bobwhite	Quadrant south of 407 ETR at Dixie Road	1905
17PJ0639	<i>Colinus virginianus</i>	Northern Bobwhite	Quadrant around intersection of 407 ETR and Bramalea Road	1905
17PJ0640	<i>Colinus virginianus</i>	Northern Bobwhite	Quadrant around intersection of 407 ETR and Torbram Road	1905

**TABLE 7.
 SUMMARY OF WILDLIFE SPECIES AT RISK ELEMENT OCCURRENCE RECORDS
 BASED ON THE NHIC DATABASE**

1 Km Square	Scientific Name	Common Name	1 Km Square Approximate Location	Date Last Observed
17PJ0740	<i>Colinus virginianus</i>	Northern Bobwhite	Quadrant south of 407 ETR at Torbram Road	1905
17PJ0741	<i>Colinus virginianus</i>	Northern Bobwhite	Quadrant south of 407 ETR at Airport Road	1905
17PJ0641	<i>Colinus virginianus</i>	Northern Bobwhite	Quadrant around intersection of 407 ETR and Torbram Road	1905
17PJ0842	<i>Colinus virginianus</i>	Northern Bobwhite	Quadrant south of 407 ETR at Goreway Drive	1905
17PJ0744	<i>Sturnella magna</i>	Eastern Meadowlark	Quadrant north of 407 ETR at Goreway Drive	6/16/2002
17PJ0943	<i>Colinus virginianus</i>	Northern Bobwhite	Quadrant south of 407 ETR at Finch Avenue West	1905
17PJ0845	<i>Chelydra serpentina</i>	Snapping Turtle	Quadrant north of 407 ETR at Claireville Conservation Road	6/4/2007
17PJ0845	<i>Sturnella magna</i>	Eastern Meadowlark	Quadrant north of 407 ETR at Claireville Conservation Road	7/21/2004
17PJ0845	<i>Sturnella magna</i>	Eastern Meadowlark	Quadrant north of 407 ETR at Claireville Conservation Road	4/24/2011
17PJ1346	<i>Dolichonyx oryzivorus</i>	Bobolink	Quadrant around intersection of 407 ETR and Kipling Avenue	7/5/2004
17PJ1346	<i>Sturnella magna</i>	Eastern Meadowlark	Quadrant around intersection of 407 ETR at Kipling Avenue	7/5/2004
17PJ1648	<i>Sturnella magna</i>	Eastern Meadowlark	Quadrant around intersection of 407 ETR and Weston Road	6/19/2010
17PJ1649	<i>Sturnella magna</i>	Eastern Meadowlark	Quadrant north of 407 ETR at Weston Road	6/19/2010
17PJ1749	<i>Sturnella magna</i>	Eastern Meadowlark	Quadrant north of 407 ETR at Highway 400	6/19/2010
17PJ1748	<i>Sturnella magna</i>	Eastern Meadowlark	Quadrant around intersection of 407 ETR and Highway 400	6/19/2010

**TABLE 8.
 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	TRCA records at a number of locations.	-	THR	2014	Generally associated with marshes, meadows, swales and other open habitats.	Marshes, meadows, swales and potentially other open aquatic habitat types.
<i>Emydoidea blandingii</i>	Blanding's Turtle	Unknown – in the vicinity of the study area.	THR	THR	Unknown	Aquatic habitats consisting of shallow water, usually in large wetlands and shallow lakes with lots of water plants.	No suitable habitat for this species identified.
<i>Chelydra serpentina</i>	Snapping Turtle	NHIC record in vicinity of study area (quadrant north of 407 ETR at Claireville Conservation Road); TRCA record north of 407 ETR between Martin Grove Road and Islington Avenue; MNRF record location unknown.	SC	SC	2011	Aquatic habitats.	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.

**TABLE 8.
 WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat	Potential Habitat in Study Area
<i>Colinus virginianus</i>	Northern Bobwhite	NHIC records across much of the study area.	END	END	1905	Agricultural fields, grasslands and open country communities. Species only known from a few scattered locations in extreme south-western Ontario.	No suitable habitat for this species identified.
<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.
<i>Setophaga citrina</i>	Hooded Warbler	TRCA single record at Woodbridge Pleistocene Cut Area of Natural and Scientific Interest; Breeding Bird Atlas data – precise location unknown	-	THR	2007	Breeds in the undergrowth of forest interiors of mixed hardwoods.	Forest communities are generally too small to support this species. No suitable habitat identified.
<i>Chaetura pelagica</i>	Chimney Swift	Breeding Bird Atlas data – precise location unknown; TRCA record north of 407 ETR between Hurontario Street and Kennedy Road.	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/open habitats associated with the study area have the potential to function as suitable habitat for the species.

**TABLE 8.
 WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat	Potential Habitat in Study Area
<i>Contopus virens</i>	Eastern Wood Pewee	Breeding Bird Atlas data – precise location unknown; TRCA records at a number of locations; MNRF record location unknown; and, several individuals recorded in wooded areas associated with Rainbow Creek crossing (LGL 2016).	SC	-	2016	Forest species, typically associated with forest openings, clearing or edges.	Forest and forest edges were identified as habitat for the species. Field investigations undertaken by LGL in 2016 identified several Eastern Wood Pewee which were restricted to wooded areas in the vicinity of the Rainbow Creek crossing.
<i>Riparia riparia</i>	Bank Swallow	Breeding Bird Atlas data – precise location unknown; TRCA record north of 407 ETR and west of Highway 50 in the vicinity of the Humber River; MNRF identified species as potentially present in vicinity of study area.	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.

**TABLE 8.
 WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat	Potential Habitat in Study Area
<i>Hirundo rustica</i>	Barn Swallow	Breeding Bird Atlas data – precise location unknown; TRCA record north of 407 ETR and immediately west of Islington Avenue and north of 407 ETR immediately west of Kennedy Road South; MNRF record location unknown; and, foraging individuals recorded across much of the study area (LGL 2016).	THR		2016	Open country and agricultural.	Open country and agricultural habitat types at the locations identified provide habitat suitable to support foraging Barn Swallow. 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. Field investigations undertaken by LGL in late spring/early summer of 2016 identified foraging Barn Swallow at a number of sites across the study area. Two Barn Swallow nesting colonies were also identified within the study area.
<i>Hylocichla mustelina</i>	Wood Thrush	Breeding Bird Atlas data – precise location unknown; TRCA records at a number of locations; MNRF record location unknown.	SC	-	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.

**TABLE 8.
 WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat	Potential Habitat in Study Area
<i>Dolichonyx oryzivorus</i>	Bobolink	NHIC record in the vicinity of the study area (quadrant around intersection of 407 ETR and Kipling Avenue); Breeding Bird Atlas data – precise location unknown; TRCA record south of 407 ETR between Tomken Road and Dixie Road; MNRF record location unknown.	THR	-	2001-2005	Open country/ grasslands and agricultural.	Open country, meadow and agricultural habitat types at the locations identified provide habitat suitable to support Bobolink, although the open-country habitats identified during LGL’s 2016 surveys typically did not consist of grass dominated vegetation as preferred by this species.
<i>Sturnella magna</i>	Eastern Meadowlark	NHIC records across much of the study area; Breeding Bird Atlas data – precise location unknown; TRCA records at a number of locations; MNRF record location unknown.	THR	-	2015	Open country, meadows and agricultural.	Open country, meadow and agricultural habitat types at the locations identified provide habitat suitable to support Eastern Meadowlark, although open-country habitats identified during LGL’s 2016 surveys typically did not consist of grass dominated vegetation as preferred by this species.
<i>Myotis lucifugus</i>	little brown myotis	MNRF identified this species as potentially present in the vicinity of the study area.	END	END	N/A	Trees and buildings. Often select attics, abandoned buildings and barns for summer colonies where they raise their offspring.	Open country, agricultural and forested habitat types have the potential to function as suitable habitat for the species.

**TABLE 8.
 WILDLIFE SPECIES AT RISK SUMMARY**

Scientific Name	Common Name	Location (s)	ESA	SARA	Last Observed Date	Preferred Habitat	Potential Habitat in Study Area
<i>Myotis septentrionalis</i>	northern myotis	MNRF identified this species as potentially present in the vicinity of the study area.	END	END	N/A	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.
<i>Danaus plexippus</i>	Monarch	MNRF record location unknown.	SC	SC	Unknown	Open country/grasslands and agricultural.	Open country, meadow (including roadside vegetation) and agricultural habitat have the potential to provide habitat suitable to support Monarch.

Western Chorus Frog

Natural heritage data provided by TRCA contained five records of Western Chorus Frog from several locations across the study area, with occurrence dates ranging from 1997 to 2014. The Western Chorus Frog (Great Lakes/St. Lawrence Population) is regulated as ‘Threatened’ under the SARA, but the species is not regulated under the ESA. The Western Chorus Frog is generally associated with marshes, meadows, swales and other open habitats (Harding 1997). 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 (with the exception of the CNR/CPR lands), a criterion that would trigger a federal permit if the species was identified within the study area. Western Chorus Frog were not identified during LGL’s 2016 amphibian surveys; however, given the timing of amphibian surveys (May and June), Western Chorus Frog were likely to have already finished breeding and consequently were unlikely to be detected. Field investigations in spring/early summer of 2016 identified potentially suitable habitat for this species associated with open aquatic habitat types across the study area including marshes, meadows (and other open-country environments) and swales.

Blanding’s Turtle

Rare species records provided by the MNRF, Aurora District Office (2018) identified Blanding’s Turtle as a species that has previously been recorded within the vicinity of the study area; however, no details as to the location(s) or date(s) of the record(s) were provided. Blanding’s Turtle is regulated as ‘Threatened’ under the ESA and the SARA. Blanding’s Turtles live in shallow water, usually in large wetlands and shallow lakes with lots of aquatic vegetation. Blanding’s Turtles are also known to make long overland movements to seek egg laying sites or to access new aquatic habitats. No habitat considered suitable to support this species was identified within the study area. No incidental observations of Blanding’s Turtle were recorded during LGL’s 2016 field investigations; although no targeted surveys for this species were conducted.

Snapping Turtle

The NHIC database contained a single record of Snapping Turtle (from 2007) which was located north of the intersection of 407 ETR and Clarendon Conservation Road. TRCA data contained a record from 2011 which was located north of 407 ETR between Martin Grove Road and Islington Avenue. MNRF confirmed that Snapping Turtle have been recorded in the 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 the ESA. Snapping Turtle is generally associated with aquatic settings such as lakes, ponds, bays and inlets. This is a highly aquatic species but 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 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 in spring/early summer of 2016 identified potentially suitable habitat for this species, including a variety of aquatic habitats identified across the study area. However, no Snapping Turtles were identified during LGL’s 2016 field investigations.

Northern Bobwhite

The Northern Bobwhite is regulated as ‘Endangered’ under the ESA and SARA. A total of nine NHIC element occurrence records were identified from across the study area for Northern Bobwhite (all dated from 1905). Northern Bobwhite is typically found in agricultural fields, grasslands and open country communities. The occurrence records for this species are dated from 1905 and are consequently

considered historic in nature. Formerly widespread across the southern portion of the province, the Northern Bobwhite is now only known from a few scattered sites in extreme southwestern Ontario, namely Walpole Island (MNR 2015). Northern Bobwhite is not expected to live in or near the study area. No Northern Bobwhite were identified during LGL's 2016 field investigations.

Common Nighthawk

Records for this species were present in Breeding Bird Atlas data (dated between 2001-2005) although record locations are unknown (see **Appendix H**). 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 a wide range of open, vegetation-free 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 (e.g. parking lots, parkland and rooftops) which have the potential to support Common Nighthawk, were identified across much of the study area. However, no Common Nighthawks were observed during LGL's 2016 field investigations.

Hooded Warbler

Natural heritage data provided by TRCA contained a single record of Hooded Warbler in the immediate vicinity of the Woodbridge Pleistocene Cut Area of Natural and Scientific Interest, south of 407 ETR, between Martin Grove Road and Islington Avenue, with occurrence dated 2007. Records for this species were also present in Breeding Bird Atlas data (dated between 2001-2005) although record locations are unknown (see **Appendix H**). Hooded Warbler is regulated as 'Threatened' under the SARA but has no designation under the ESA. The Hooded Warbler breeds in the undergrowth of forest interiors of mixed hardwoods. Field investigations in spring/early summer of 2016 identified marginally suitable habitat for this species, including several wooded areas identified across the study area; however, these wooded areas are likely to small and disturbed to support this species. No Hooded Warbler were identified during LGL's 2016 field investigations.

Chimney Swift

Natural heritage data provided by TRCA contained a single record of Chimney Swift from north of 407 ETR, between Hurontario Street and Kennedy Road, with occurrence dated 2010. Records for this species were also present in Breeding Bird Atlas data (dated between 2001-2005) although record locations are unknown (see **Appendix H**). 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). Field investigations in spring/early summer of 2016 identified marginally suitable habitat for this species, including anthropogenic areas and open habitats that were identified across the study area. However, no Chimney Swifts were identified during LGL's 2016 field investigations.

Eastern Wood Pewee

Natural heritage data provided by TRCA contained eight records of Eastern Wood Pewee from several locations across the study area, with occurrence dates ranging from 2003 to 2014. Records for this species were also present in Breeding Bird Atlas data (dated between 2001-2005) although record locations are unknown (see **Appendix H**). MNR confirmed that Eastern Wood Pewee have been recorded in the study area, although the record location is unknown. 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' by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), but has no status under the SARA. The Eastern Wood Pewee 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 and

mixed forest habitat communities and forest edges were identified within the study area. Field investigations undertaken by LGL in 2016 identified several Eastern Wood Pewee which were restricted to wooded areas in the vicinity of the Rainbow Creek crossing.

Bank Swallow

Natural heritage data provided by TRCA contained a single record of Bank Swallow from north of 407 ETR and west of Highway 50, in the vicinity of the Humber River, with occurrence dated from 2014. Breeding Bird Atlas data for areas in the vicinity of the study area also contained records (dated between 2001-2005) for Bank Swallow (see **Appendix H**) although record locations are unknown. MNRF noted that Bank Swallow have the potential to be located in the vicinity of the study area. Bank Swallow is regulated as 'Threatened' under the ESA but is not regulated under the SARA. The Bank Swallow 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. Field investigations undertaken by LGL in spring/early summer of 2016 identified marginally suitable nesting habitat for this species, including eroded watercourse banks that were identified across the study area. However, no Bank Swallows were identified during LGL's 2016 field investigations.

Barn Swallow

Natural heritage data provided by TRCA contained two records of Barn Swallow from north of 407 ETR and immediately west of Islington Avenue and north of 407 ETR immediately west of Kennedy Road South, with occurrence dates from 2003 and 2015, respectively. Breeding Bird Atlas data for areas in the vicinity of the study area also contained records (dated between 2001-2005) for Barn Swallow (see **Appendix H**) although record locations are unknown. MNRF confirmed that Barn Swallow have been recorded in the study area, although the record location is unknown. Barn Swallow is regulated as 'Threatened' under the ESA. Barn Swallow is not a regulated species under 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. Field investigations undertaken by LGL in late spring/early summer of 2016 identified foraging Barn Swallow at a number of sites across the study area (see **Appendix H**). Two Barn Swallow nesting colonies were also identified within the study area, including nests on a structure in parkland east of Dixie Road and south of 407 ETR and an additional nesting colony under the 407 ETR bridge structure at the Lower Humber River (H7).

Wood Thrush

Natural heritage data provided by TRCA contained five records of Wood Thrush from several locations across the study area, with occurrence dates ranging from 2002 to 2011. Breeding Bird Atlas data for areas in the vicinity of the study area also contained records (dated between 2001-2005) for Wood Thrush (see **Appendix H**) although record locations are unknown. MNRF confirmed that Wood Thrush have been recorded in the study area, although the record location is unknown. Wood Thrush is listed as 'Special Concern' under the ESA; however, this species is not a regulated species ('Endangered' or 'Threatened') under the ESA. Wood Thrush is not a regulated species 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 study area. However, no Wood Thrush were identified during LGL's 2016 field investigations.

Bobolink

Natural heritage data provided by TRCA contained a single record of Bobolink from south of 407 ETR between Tomken Road and Dixie Road, with occurrence dated from 2003. Review of the NHIC database

contained a single record of Bobolink which was located around the intersection of 407 ETR and Kipling Avenue. The NHIC record for Bobolink was dated from 2004. Breeding Bird Atlas data for areas in the vicinity of the study area also contained records (dated between 2001-2005) for Bobolink (see **Appendix H**) although record locations are unknown. MNRF confirmed that Bobolink have been recorded in the study area, although the record location is unknown. The Bobolink, a species with a broad distribution across southern Ontario, is regulated 'Threatened' under the ESA. Bobolink is not a regulated species 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. However, the open-country habitats identified during LGL's 2016 surveys typically did not consist of grass dominated vegetation as preferred by this species. No Bobolinks were identified during LGL's 2016 field investigations.

Eastern Meadowlark

Natural heritage data provided by TRCA contained seven records of Eastern Meadowlark from several locations across the study area, with occurrence dates ranging from 2003 to 2011. Review of the NHIC database indicated records of Eastern Meadowlark across much of the study area. The NHIC database had eight relatively recent (2002, 2004, 2010 and 2011) records for 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 (see **Appendix H**) although record locations are unknown. MNRF confirmed that Eastern Meadowlark have been recorded in the study area, although the record location is unknown. The Eastern Meadowlark, a species with a broad distribution across southern Ontario, is regulated 'Threatened' under the ESA. Eastern Meadowlark is not a regulated species 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. However, open-country habitats identified during LGL's 2016 surveys typically did not consist of grass dominated vegetation as preferred by this species. No Eastern Meadowlark were identified during LGL's 2016 field investigations.

Little Brown Myotis

Rare species records provided by MNRF, Aurora District Office identified little brown myotis as a species that has the potential to be found within the vicinity of the study area. Little brown myotis is regulated as 'Endangered' under the ESA and the SARA. The little brown myotis is a cavity-roosting species and stays wherever it is warm. It roosts in natural cavities under loose bark and in crevices, and in buildings where it can be found in attics, behind shutters or siding, or under shingles (Kurta 1995). Little brown myotis emerge from roosts for their nightly hunt around dusk, and forage over water and semi-open areas such as rocky hillsides, lawns, fields and forest edges (Nagorsen and Brigham 1993). Habitat for this species has the potential to be found across much of the study area. However, no incidental observations of little brown myotis were recorded during LGL's 2016 field investigations; although no targeted surveys for this species were conducted.

Northern Myotis

Rare species records provided by MNRF, Aurora District Office identified northern myotis as a species that has the potential to be found within the vicinity of the study area. Northern myotis is regulated as 'Endangered' under the ESA and the SARA. The northern myotis is found throughout forested areas in southern Ontario, choosing to roost under loose bark and in the cavities of trees. Habitat for this species has the potential to be found where forested/treed habitat exists across the study area. However, no

incidental observations of northern myotis were recorded during LGL's 2016 field investigations; although no targeted surveys for this species were conducted.

Monarch

Rare species records provided by MNR, Aurora District Office identified Monarch as a species that has been previously recorded within the study area, although the record location is unknown. The Monarch is listed as 'Special Concern' under the ESA and SARA; however, this species is not a regulated species ('Endangered' or 'Threatened') under the ESA. The Monarch can be found in a wide variety of open country/grassland habitats such as meadows and open fields. Open-country, meadow (including roadside vegetation) and agricultural habitat types found across the study area have the potential to provide habitat suitable to support this species. However, no incidental observations of Monarch were recorded during LGL's 2016 field investigations; although no targeted surveys for this species were conducted.

4.0 IMPACT ASSESSMENT AND MITIGATION

4.1 *Physiography and Soils*

Generally, the soils within the study area have imperfect or poor drainage (with the exception of Fox sandy loam soils, which are 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 surface water quality and fish habitat. 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 surface water quality and fish habitat.

4.2 Vegetation and Vegetation Communities

Implementation of the 407 Transitway between west of Hurontario Street and east of Highway 400 has the potential to result in impacts to vegetation and vegetation communities. Effects on vegetation related to the construction of the 407 Transitway between west of Hurontario Street and east of Highway 400 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. Overall, there will be a loss of 102.47 ha of vegetation communities, which includes a loss of 52.44 ha due to the runningway, and a loss of 50.03 ha due to the stations. 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 runningway and each of the seven stations.

4.2.1 Runningway Impacts

Table 9 provides a summary of the vegetation removals required per segment of the runningway of the 407 Transitway between west of Hurontario Street and east of Highway 400. A discussion of the impacts to each segment is provided below.

TABLE 9.
SUMMARY OF VEGETATION REMOVALS WITHIN THE TRANSITWAY RUNNINGWAY

Transitway Segment	Total Area to Be Impacted (Ha)
<i>Segment A: West of Hurontario Street to East of Kennedy Road</i>	
Cultural Communities (CUM1-1a)	1.16
Wetland Communities (MAM2/MAS2a)	0.02
Anthropogenically Influenced Lands (Agricultural and Manicured)	2.98
Subtotal West of Hurontario Street to East of Kennedy Road	4.16 ha
<i>Segment B: East of Kennedy Road to West of Tomken Road</i>	
Cultural Communities (CUM1-1a to c, CUM1-1/CUT1, CUT1/CUW1a)	2.86
Wetland Communities (MAM2-2a and MAM2a)	0.33
Anthropogenically Influenced Lands (Agricultural)	3.15
Subtotal East of Kennedy Road to West of Tomken Road	6.34 ha
<i>Segment C: West of Tomken Road to East of Torbram Road</i>	
Cultural Communities (CUM1-1c, e and f, CUT1b and CUW1a)	5.49
Wetland Communities (MAM2b)	0.04
Anthropogenically Influenced Lands (Agricultural and Manicured)	3.87
Subtotal West of Tomken Road to East of Torbram Road	9.40 ha
<i>Segment D: East of Torbram Road to East of Goreway Drive</i>	
Cultural Communities (CUM1-1g, CUT1d)	5.85
Wetland Communities (MAM2-2b)	0.04
Anthropogenically Influenced Lands (Agricultural, Manicured and SWM Pond)	0.79

TABLE 9.
SUMMARY OF VEGETATION REMOVALS WITHIN THE TRANSITWAY RUNNINGWAY

Transitway Segment	Total Area to Be Impacted (Ha)
<i>Subtotal East of Torbram Road to East of Goreway Drive</i>	<i>6.68 ha</i>
<i>Segment E: East of Goreway Drive to East of Highway 427</i>	
Cultural Communities (CUM1-1h, CUS1a, CUT1e and CUW1g)	4.81
Wetland Communities (MAS2)	0.05
Anthropogenically Influenced Lands (Agricultural and Manicured)	2.89
<i>Subtotal East of Goreway Drive to East of Highway 427</i>	<i>7.75 ha</i>
<i>Segment F: East of Highway 427 to just East of Martin Grove Road</i>	
Cultural Communities (CUM1-1h and i)	2.95
Anthropogenically Influenced Lands (Agricultural and Manicured)	0.84
<i>Subtotal East of Highway 427 to just East of Martin Grove Road</i>	<i>3.79 ha</i>
<i>Segment G: Just East of Martin Grove Road to West of Islington Avenue</i>	
Cultural Communities (CUM1-1i to k, CUT1g, CUW1c and e)	5.22
Wetland Communities (MAM2c, SWD4-1 a and c)	0.16
Forest Communities (FOD6-5b, FOD7-3, FOM7)	0.12
<i>Subtotal Just East of Martin Grove Road to West of Islington Avenue</i>	<i>5.50 ha</i>
<i>Segment H: West of Islington Avenue to Immediately East of Highway 400</i>	
Cultural Communities (CUM1-1k and l)	5.78
Wetland Communities (MAM2d)	0.24
Anthropogenically Influenced Lands (Agricultural and Manicured)	2.80
<i>Subtotal West of Islington Avenue to Immediately East of Highway 400</i>	<i>8.82 ha</i>
<i>Total Impacted Area (ha) for the Transitway Runningway</i>	<i>52.44 ha</i>

4.2.1.1 Segment A - West of Hurontario Street to East of Kennedy Road

A total of 4.16 ha of predominately naturalized and/or planted area will be removed as a result of the proposed 407 Transitway runningway from west of Hurontario Street to East of Kennedy Road. The largest impact will be to cultural meadow communities (CUM1-1a). Overall, impacts resulting in the loss of vegetation within these cultural meadow communities is considered to be minor. Cultural meadows are widespread and common throughout Ontario. It is expected that 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.

Minor impacts will occur at the northern edge of one wetland (MAM2/MAS2a) community. This edge of the wetland is very narrow, and reed canary grass is dominant. Impacts related to the removal of this portion of the meadow marsh/shallow marsh community, communities that are widespread and common throughout Ontario, is considered to be minor.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands and manicured areas. The impact to these lands is considered to be minor.

4.2.1.2 Segment B - East of Kennedy Road to West of Tomken Road

Five ELC community types will be impacted due to the proposed Transitway runningway from east of Kennedy Road to west of Tomken Road. These communities include cultural meadow (CUM1-1a to c), cultural meadow/cultural thicket (CUM1-1/CUT1), cultural thicket/cultural woodland (CUT1/CUW1a), and meadow marsh (MAM2-2a and MAM2a), resulting in 6.34 ha of land to be impacted.

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. As a result, impacts to the cultural communities noted above are considered to be minor. Cultural vegetation communities are widespread and common throughout Ontario.

Impacts to the reed-canary grass meadow marsh (MAM2-2a) and the meadow marsh (MAM2a) will result in the removal of a small portion of these communities. The northern edge of the reed-canary grass meadow marsh will be impacted and efforts should be made to retain the remaining portion of this community, to the extent possible. Though only a smaller portion of the meadow marsh community will remain, it would persist between 407 ETR and the runningway. Runoff from these features will likely provide adequate conditions for the persistence of the remaining portion of this community. It is expected that runoff currently provides support to this meadow marsh due to its proximity to the 407 ETR. The loss of a small portion of the reed-canary grass meadow marsh, adjacent to the preferred runningway is not expected to have any negative impacts to the remaining portions of this community. Both meadow marsh communities are considered to be widespread and common in Ontario.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands. The impact to these lands is considered to be minor.

4.2.1.3 Segment C - West of Tomken Road to East of Torbram Road

Impacts to vegetation communities from west of Tomken Road to east of Torbram Road will result in the removal of approximately 9.40 ha of vegetation communities including the removal of a portion of cultural meadow (CUM1-1c, e and f), cultural thicket (CUT1b), cultural woodland (CUW1a), meadow marsh (MAM2b), agricultural lands, and manicured areas.

Impacts to the cultural meadow, the cultural thicket, and the cultural woodland are considered to be minor. 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.

Impacts to the meadow marsh (MAM2b) will result in the removal of a very small portion of the southern edge of this community. This community has established along a tributary of Etobicoke Creek West Branch which bisects a large cultural meadow. The meadow marsh community is considered to be widespread and common in Ontario.

Impacts to anthropogenically influenced lands will include the removal of agricultural lands, and a portion of manicured lands. The impact to these lands is considered to be minor.

4.2.1.4 Segment D - East of Torbram Road to East of Goreway Drive

Impacts to vegetation communities from east of Torbram Road to east of Goreway Drive will result in the removal of 6.68 ha of vegetation communities. This includes the removal of a portion of cultural meadow (CUM1-1g) and cultural thicket (CUT1d), and a portion of a reed-canary grass meadow marsh (MAM2-2b) that has developed along a tributary of Mimico Creek.

Impacts to the cultural meadow and cultural thicket communities are considered to be minor. 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.

Impacts to the reed-canary meadow marsh (MAM2-2b) will result in the removal of a very small portion of the northern edge of this community. Efforts should be made to retain the remaining portion of this community, to the extent possible. However, the loss of a small portion of the reed-canary grass meadow marsh, adjacent to the runningway, is not expected to have any negative impacts to the remaining portions of this community. The reed-canary grass meadow marsh is considered to be widespread and common in Ontario.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands, manicured areas and a SWM Pond. The impact to these lands is considered to be minor.

4.2.1.5 Segment E - East of Goreway Drive to East of Highway 427

Impacts to vegetation communities from east of Goreway Drive to east of Highway 427 will result in the removal of approximately 7.75 ha of vegetation communities including cultural meadow (CUM1-1h), cultural savannah (CUS1a), cultural thicket (CUT1e), cultural woodland (CUW1g), and shallow marsh (MAS2).

Impacts to cultural meadow, cultural savannah, cultural thicket and cultural woodland communities are considered to be minor. Cultural 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.

The shallow marsh, and open aquatic areas are associated with West Humber River. The portion of the shallow marsh community that would be impacted exists between 407 ETR and Steeles Avenue. Impacts due to the runningway may result in the temporary disturbance of these areas likely related to works associated with a bridge structure to span the creek. Such impacts are expected to be temporary, minor and are not expected to have any negative impacts to the remaining portion of these areas. The shallow marsh community is considered to be widespread and common in Ontario.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands and manicured areas. The impact to these lands is considered to be minor.

4.2.1.6 Segment F - East of Highway 427 to just East of Martin Grove Road

Impacts to vegetation communities from east of Highway 427 to just east of Martin Grove Road will result in the removal of approximately 3.79 ha of vegetation communities consisting primarily of cultural meadow (CUM1-1h and i).

Impacts to the cultural meadows (CUM1-1h and i) 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 the cultural communities.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands and manicured areas. The impact to these lands is considered to be minor.

4.2.1.7 Segment G - Just East of Martin Grove Road to West of Islington Avenue

Impacts to vegetation communities between just east of Martin Grove Road to west of Islington Avenue will result in the removal of approximately 5.50 ha of vegetation communities. These communities include the removal of a portion of a cultural meadow (CUM1-1i to k), cultural thicket (CUT1g), cultural woodland (CUW1 c and e), meadow marsh (MAM2c), Willow Mineral Deciduous Swamp (SWD4-1a and c), Fresh-Moist Sugar Maple-Hardwood Deciduous Forest (FOD6-5b), Fresh-Moist Willow Lowland Deciduous Forest (FOD7-3), and Fresh-Moist White Cedar-Hardwood Mixed Forest (FOM7).

Impacts to cultural meadow, cultural thicket and cultural woodland communities are considered to be minor. Cultural vegetation communities are widespread and common throughout Ontario. Cultural 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.

Construction of the runningway will result in the removal of the northern edges of the meadow marsh, the Willow Mineral Deciduous Swamp, the Sugar Maple-Hardwood Deciduous Forest, the Willow Lowland Deciduous Forest, and the White Cedar-Hardwood Mixed Forest. Though removal of the northern portion of these communities can have a negative impact, the total removals of the wetland and forest communities are approximately 0.16 ha and 0.12 ha, respectively. Only the very edges of these communities will be impacted, immediately adjacent to the highway, where edges are already in a somewhat disturbed state. The remaining wetland and forest communities are expected to persist post-construction. Forest edge management should be implemented to enhance edges. Overall, impacts to these wetland and forest community edges are considered to be minor.

4.2.1.8 Segment H - West of Islington Avenue to Immediately East of Highway 400

Impacts to vegetation communities from west of Islington Avenue to immediately east of Highway 400 will result in the removal of approximately 8.82 ha of vegetation communities including cultural meadow (CUM1-1k and l), and meadow marsh (MAM2d).

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 the cultural communities.

The meadow marsh is associated with a tributary of Lower Humber River which is a permanently flowing warmwater creek. This tributary appears to originate from 407 ETR surface drainage and a storm water pond to the north, via a concrete pipe. Flow from the creek drains towards the southwest, characterized as diffuse flow through the wetland, flowing towards an industrial development to the south, where it again appears to be piped. This wetland lies within lands between the 407 ETR, industrial development, a hydro corridor, and an area of disturbance that appears to be used inadvertently by off road vehicles. The meadow marsh consists of a high proportion of common reed, which is a highly invasive plant species. Only the western portion of the meadow marsh community is expected to be impacted due to the construction of the runningway. The remaining portion of the wetland, given the nature of the drainage, is expected to persist post-construction. Overall, impacts to this wetland are considered to be minor. The meadow marsh community is considered to be widespread and common in Ontario.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands and manicured areas. The impact to these lands is considered to be minor.

4.2.2 Station Impacts

Table 10 provides a summary of the vegetation removals required per station for the preferred station locations for the Highway 407 Transitway west of Hurontario Street to east of Highway 400. The proposed stormwater management ponds within the footprints of the respective stations have been included in the calculations below. A discussion of the impacts to vegetation and vegetation communities per station is provided below.

TABLE 10.
SUMMARY OF VEGETATION REMOVALS WITHIN THE TRANSITWAY STATIONS

Transitway Segment	Total Area to Be Impacted (Ha)
<i>Hurontario Street Station</i>	
Cultural Communities (CUM1-1a)	2.93
Anthropogenically Influenced Lands (Agricultural)	3.43
<i>Subtotal Hurontario Street Station</i>	<i>6.36 ha</i>
<i>Dixie Road Station</i>	
Cultural Communities (CUM1-1c)	0.73
Wetland Communities (MAM2b)	0.06
Anthropogenically Influenced Lands (Agricultural and Manicured)	6.68
<i>Subtotal Dixie Road Station</i>	<i>7.47 ha</i>
<i>Airport Road Station</i>	
Cultural Communities (CUM1-1g and CUT1c)	5.98
Anthropogenically Influenced Lands (Manicured)	0.49
<i>Subtotal Airport Road Station</i>	<i>6.47 ha</i>
<i>Goreway Drive Station</i>	
Cultural Communities (CUM1-1g)	0.07
Anthropogenically Influenced Lands (Agricultural and Manicured)	6.45
<i>Subtotal Goreway Drive Station</i>	<i>6.52 ha</i>
<i>Highway 50 Station</i>	
Cultural Communities (CUM1-1h)	6.51
Anthropogenically Influenced Lands (Manicured)	0.09
<i>Subtotal Highway 50 Station</i>	<i>6.60 ha</i>
<i>Highway 27 Station</i>	
Cultural Communities (CUM1-1h)	4.64
Anthropogenically Influenced Lands (Agricultural and Manicured)	2.92
<i>Subtotal Highway 27 Station</i>	<i>7.56 ha</i>
<i>Pine Valley Drive Station</i>	
Cultural Communities (CUM1-1k)	9.05
<i>Subtotal Pine Valley Drive Station</i>	<i>9.05 ha</i>
<i>Total Impacted Area (ha) for the Transitway Stations</i>	<i>50.03 ha</i>

4.2.2.1 Hurontario Street Station

Impacts to vegetation communities associated with the construction of the Hurontario Street Station will result in the removal of approximately 6.36 ha of cultural meadow (CUM1-1a), and agricultural lands. 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.

The impact to anthropogenically influenced lands, including the removal of a portion of agricultural lands, is considered to be minor.

4.2.2.2 Dixie Road Station

Impacts to vegetation communities associated with the construction of the Dixie Road Station will result in the removal of approximately 7.47 ha of vegetation communities, and agricultural and manicured lands. These communities include the removal of a portion of cultural meadow (CUM1-1c) and meadow marsh (MAM2b). 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 to the meadow marsh will result in the removal of a very small portion of the southern edge of this community, approximately 0.06 ha. This community has established along a tributary of Etobicoke Creek West Branch which bisects a large cultural meadow. The meadow marsh community is considered to be widespread and common in Ontario.

Impacts to anthropogenically influenced lands will include the removal of a portion of agricultural lands and manicured areas. The impact to these lands is considered to be minor.

4.2.2.3 Airport Road Station

Impacts to vegetation communities associated with the construction of the Airport Road Station will result in the removal of approximately 6.47 ha of vegetation communities, and manicured lands. These communities include the removal of a portion of cultural meadow (CUM1-1g) and a small cultural thicket (CUT1c) that has established within the meadow community, west of Airport Road. Cultural communities typically persist in areas that are subject to regular disturbance. Consequently, impacts to the cultural communities are considered to be minor. Cultural vegetation communities are widespread and common throughout Ontario.

The impact to anthropogenically influenced lands, including the removal of a portion of manicured areas, is considered to be minor.

4.2.2.4 Goreway Drive Station

Impacts to vegetation communities associated with the construction of the Goreway Drive Station will result in the removal of approximately 6.52 ha of cultural meadow (CUM1-1g), agricultural lands 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.

The impact to anthropogenically influenced lands, including the removal of a portion of agricultural lands and manicured areas, is considered to be minor.

4.2.2.5 Highway 50 Station

Impacts to vegetation communities associated with the construction of the Highway 50 Station will result in the removal of approximately 6.60 ha of cultural meadow (CUM1-1 ha) 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.

The impact to anthropogenically influenced lands, including the removal of a portion of manicured areas, is considered to be minor.

4.2.2.6 Highway 27 Station

Impacts to vegetation communities associated with the construction of the Highway 27 Station will result in the removal of approximately 7.56 ha of cultural meadow (CUM1-1h), agricultural lands 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.

The impact to anthropogenically influenced lands, including the removal of a portion of agricultural lands and manicured areas, is considered to be minor.

4.2.2.7 Pine Valley Drive Station

Impacts to vegetation communities associated with the construction of the Pine Valley Drive Station will result in the removal of approximately 9.05 ha of cultural meadow (CUM1-1k). 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.

4.2.3 Displacement of Rare, Threatened or Endangered Vegetation and Vegetation Communities

All of the vegetation communities identified within the study area are considered to be widespread and common in Ontario and secure globally. As noted in **Section 3.2.3.4**, historic records of butternut have been identified within the study area; however, neither butternut nor any other plant species at risk were identified during the plant surveys undertaken throughout the study area in 2016.

As noted in **Section 3.2.3.4** a total of 21 TRCA plant species of concern (L1 to L3) and species identified as rare in York and Peel Regions, were identified 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

No Provincially Significant Wetlands (PSW) were identified within the study area. Two designated natural areas are present within Segment G, including the Woodbridge Cut ESA and the Woodbridge Pleistocene Cut Earth Science ANSI. These two natural areas are located over 100 m to the south of the runningway, consequently, no impacts to these natural areas are expected.

Three watercourses located in the study area, including the Etobicoke Creek West Branch, West Humber River and Lower Humber River, are designated as 'Urban River Valleys' under the Greenbelt Plan (2017). The environmental protection/mitigation measures outlined in **Sections 4.2** and **4.3** will help maintain/enhance the 'Urban River Valleys' and ensure that the policies of the Greenbelt Plan will be adhered to at these three 'Urban River Valleys' in order to support connections between the Natural Heritage System and the local, regional and broader natural heritage systems of southern Ontario.

4.2.3.1 Vegetation Community Offsets

The removal of wetland and forest communities should be offset through restoration, as well as through the enhancement of nearby vegetation communities, to the extent possible. A number of sites along the

407 Transitway facility will be protected for offsets/future environmental compensation. These sites are presented on **Figures 2a, 2b** and **2c**.

Restoration of suitable forest and/or wetland habitat should be undertaken in these protected sites, at a compensation ratio to be determined through further discussion with regulatory agencies (e.g., MNR, TRCA), 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 to very small portions of primarily meadow marsh habitat. These wetlands are typically located along several watercourses that bisect 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 as a result 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 considered. Such 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 communities within the study area are only expected to be impacted along existing forest edges, which are already in a disturbed state. However, forest edge management should be implemented to enhance edges, and to try to mitigate the establishment of invasive species along the disturbed edges.

Where restoration on identified protected sites is undertaken 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.

4.2.3.2 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.

4.2.3.3 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 the forest communities, including deciduous and mixed forests and the deciduous swamp located within Segment G (see **Table 9** and **Section 4.2.1.7**). Where new forest edges are exposed, forest management techniques will be implemented to mitigate the associated impacts to the 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. Decompaction efforts and methodology shall be site specific. Where decompaction 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 considered.
- The contractor will be required to provide a warranty on planted 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.

4.2.3.4 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, common reed or garlic mustard, Russian or Autumn olive (*Elaeagnus angustifolia* and *E. umbellata*) the appropriate removal and control of these species by a qualified specialist should be undertaken. Swallow-wort is particularly invasive. This species establishes dense stands in meadow habitat but can also invade into forested sites displacing numerous native species. Common reed is also particularly invasive, and as with swallow-wort, 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.).

4.2.3.5 Planting Plans

A detailed planting plan 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 and ratio of plantings or abundances; 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 years following the initial planting stage. In particular, management will need to be undertaken for those invasive / aggressive plant species.

4.2.3.6 Construction Best Management Practices

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

- 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).

4.3 Wildlife and Wildlife Habitat

Implementation of the 407 Transitway between west of Hurontario Street and east of Highway 400 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.

4.3.1 Runningway Impacts

A discussion of the impacts along the runningway segments is provided below. These segments correspond to those discussed in **Section 4.2.1**.

4.3.1.1 Segment A: West of Hurontario Street to East of Kennedy Road

Much of the habitat within this segment consists of cultural meadow or active agricultural lands. A small inclusion of meadow marsh/shallow marsh and several small seasonal watercourses are also present as well as a SWM pond. The natural heritage features potentially impacted by the 407 Transitway runningway consist entirely of disturbed wildlife habitat with low habitat capability. 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. There is also a fairly large buffer of similar habitats located between the proposed runningway and urban development.

4.3.1.2 Segment B: East of Kennedy Road to West of Tomken Road

The runningway in this segment will largely affect cultural meadow/thicket and agricultural habitat types. Industrial development and the Highway 410 interchange footprint further add to the disturbance in this segment. However, valleylands associated with Tributary of Etobicoke Creek West Branch (E3) provide higher quality natural heritage features and opportunity for wildlife movement across the local landscape. As such, the wildlife and wildlife habitat associated with Tributary of Etobicoke Creek West Branch (E3) valleylands may be more sensitive to disturbance than the communities in other portions of this segment. 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 in the Tributary of Etobicoke Creek West Branch (E3) valleyland and to maintain opportunity for wildlife movement through this feature.

4.3.1.3 Segment C: West of Tomken Road to East of Torbram Road

The majority of the lands within this segment consist of cultural meadow and agricultural habitat types. Etobicoke Creek West Branch (E5) valleylands and natural features associated with Spring Creek (E8) provide higher quality natural heritage features and opportunity for wildlife movement across the local landscape. Other aquatic features include small seasonal watercourses, small marshes, and open aquatic habitats. A Barn Swallow nest colony was identified on a structure within the parkland located approximately 150 m north of the alignment east of Dixie Road. Barn Swallow is a regulated species which is afforded protection under the Ontario *Endangered Species Act, 2007* (see **Section 3.3.3.3**). No impacts to this structure will occur based on the current design. However, further surveys for species at risk, specifically Barn Swallow, should be conducted prior to construction to ensure that no species at risk are affected by the alignment in this segment. As with the previous sections, the wildlife assemblage encountered during field visits to this area is considered tolerant of human disturbance/anthropogenic influences. As such, limited negative effects are anticipated.

4.3.1.4 Segment D: East of Torbram Road to East of Goreway Drive

The relatively long section of runningway between these two stations consists mainly of cultural vegetation communities bordering agricultural lands. Two SWM ponds and a cultural thicket community associated with Mimico Creek (M7) are the most natural features within this segment. 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 Mimico Creek (M7) valleyland and to maintain opportunity for wildlife movement through this feature.

4.3.1.5 Segment E: East of Goreway Drive to East of Highway 427

The majority of the habitat in this segment consists largely of agricultural lands and cultural communities. The West Humber River (H1) valleyland contains a relatively diverse assemblage of wildlife. This feature 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. With the exception of the valleyland described above, 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 West Humber River (H1) valleyland, several habitat types will be impacted, but these removals will be along edges previously disturbed by the creation of the 407 ETR corridor to the north and Steeles Avenue to the south. As such, limited negative effects are anticipated; however, efforts should be made to minimize

impacts to habitats in the West Humber River (H1) valleyland and to maintain opportunity for wildlife movement through this natural heritage feature.

4.3.1.6 Segment F: East of Highway 427 to Just East of Martin Grove Road

Wildlife habitat in this segment consists almost entirely of cultural meadows, agricultural lands and manicured grass. This segment contains a very 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

4.3.1.7 Segment G: Just East of Martin Grove Road to West of Islington Avenue

Much of the land within this segment is comprised of natural area; in fact, this segment contains the largest intact natural area and is likely to be the highest quality wildlife habitat identified within the overall study area. Natural heritage features associated with the Lower Humber River (H7) and Rainbow Creek (H6) valleylands comprise a diverse assemblage of habitats for wildlife. These valleyland (H6 and H7) features are 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. A small area designated as an Area of Natural and Scientific Interest (Woodbridge Pleistocene Cut)/ Environmentally Significant Area (Woodbridge Cut) is found along the tributary of Rainbow Creek, south of 407 ETR (see **Figure 2c**) but will not be impacted by the runningway. Eastern Wood Pewee, a species listed 'Special Concern' under the Species at Risk in Ontario List, was identified in the vicinity of these designated natural areas during 2016 field investigations. Efforts should be made to avoid and/or minimize impacts to the natural areas described above. 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.

4.3.1.8 Segment H: West of Islington Avenue to Immediately East of Highway 400

The majority of the habitat in this segment consists of agricultural/manicured lands, commercial/industrial lands, and cultural meadows. Aquatic features are restricted to small seasonal watercourses (tributary of the Lower Humber River), small marshes and open aquatic habitat, which are all generally highly disturbed and fragmented in nature. With the exception of the aquatic features, no significant effects on wildlife and wildlife habitat are expected. As such, limited negative effects are anticipated.

4.3.2 Station Impacts

A discussion of the impacts at the stations is provided below. These stations correspond to those discussed in **Section 4.2.2**.

4.3.2.1 Hurontario Street Station

Construction of the Hurontario Street Station will result in the removal of a portion of an agricultural field and two cultural meadow communities. This station will also abut a SWM pond at its western limit. The 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.

4.3.2.2 Dixie Road Station

Construction of the Dixie Road Station will result in the removal of a portion of an agricultural field, manicured grass (i.e. parkland), cultural meadow and a marsh community. The marsh community that will be impacted is small and highly disturbed. The 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. As noted above, a Barn Swallow nest colony was identified on a structure within the parkland east of the station location. Barn Swallow is a

regulated species which is afforded protection under the Ontario *Endangered Species Act, 2007* (see **Section 3.3.3.3**). No impacts to this structure will occur based on the current design. However, further surveys for species at risk should be conducted in the eastern portion of this station prior to construction to ensure that no species at risk are affected by the construction of this station.

4.3.2.3 Airport Road Station

Impacts associated with the construction of the Airport Road Station will occur to cultural meadow, cultural thicket, and manicured communities. 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.

4.3.2.4 Goreway Drive Station

The construction of the Goreway Drive Station will result in the removal of cultural meadow, agricultural lands and manicured (i.e. landscaped boulevard) areas. 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.

4.3.2.5 Highway 50 Station

The construction of the Highway 50 Station will result in the removal of cultural meadow and manicured lands. This station is situated immediately east of the West Humber River valleyland which provides important habitat for wildlife. However, the Highway 50 Station is largely fragmented from the West Humber River (H1) valleyland feature and the habitats present within the station location do not contribute to the natural heritage features found within the valleyland. 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.

4.3.2.6 Highway 27 Station

Impacts associated with the construction of the Highway 27 Station will occur to cultural meadow communities and agricultural and manicured land. 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.

4.3.2.7 Pine Valley Drive Station

Impacts associated with the construction of the Pine Valley Drive Station will occur to cultural meadow communities. 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.

4.3.3 Displacement of Rare, Threatened or Endangered Wildlife or Significant Wildlife Habitat

A total of 14 wildlife species at risk have been recorded within the vicinity of the study area based on secondary source data and an additional two wildlife species at risk have been identified as having the potential to be found within the study area (see **Section 3.3.3.3**). Two species at risk were confirmed in the study area by LGL during 2016 field investigations including Barn Swallow and Eastern Wood Pewee. The following sections provide a brief review of each species' status, the results of field surveys

carried out, and the potential impacts to the species at risk and their populations as a result of the 407 Transitway project.

4.3.3.1 Western Chorus Frog

The 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. As previously noted (see **Section 3.3.3.3**) field investigations have concluded that Western Chorus Frog have the potential to be present within open aquatic habitat types across the study area including marshes, meadows (and other open-country environments) and swales. No Western Chorus Frogs were identified during field investigations; however, given the timing of amphibian surveys (May and June), Western Chorus Frog were likely to have already finished breeding and consequently were unlikely to be detected. As such, further field investigations in marshes, meadows (and other open-country environments) and swales, undertaken during the appropriate season, should be conducted prior to construction to establish their presence or absence and identification of potential breeding habitat, and, thus, the appropriate steps for protection. No permitting is anticipated as this species is not regulated under the ESA.

4.3.3.2 Blanding’s Turtle

The Blanding’s Turtle is regulated as ‘Threatened’ under the ESA and the SARA. As previously noted (see **Section 3.3.3.3**), no Blanding’s Turtles were identified during LGL’s 2016 field investigations, and no habitat considered suitable to support this species was identified within the study area. As such, no further field investigations are required and no permitting is expected to be required to address Blanding’s Turtle.

4.3.3.3 Snapping Turtle

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 the ESA. As previously noted (see **Section 3.3.3.3**), field investigations have concluded that Snapping Turtle have the potential to be present in a variety of aquatic habitats identified across the study area. No permitting is anticipated as this species is not regulated under the ESA.

4.3.3.4 Northern Bobwhite

Northern Bobwhite is listed and is regulated as ‘Endangered’ under the ESA and SARA. As previously noted (see **Section 3.3.3.3**), the Northern Bobwhite is now only known from a few scattered sites in extreme southwestern Ontario, namely Walpole Island (MNR 2015) and is not expected to live in or near the study area. No Northern Bobwhite were identified during LGL’s 2016 field investigations. As such, no further field investigations are required and no permitting is expected to be required to address Northern Bobwhite.

4.3.3.5 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 (see **Section 3.3.3.3**), 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. No Common Nighthawk were identified during LGL’s 2016 field investigations. No permitting is anticipated as this species is not regulated under the ESA.

4.3.3.6 Hooded Warbler

Hooded Warbler is regulated as ‘Threatened’ under the SARA but has no designation under the ESA. The Hooded Warbler breeds in the undergrowth of forest interiors of mixed hardwoods. As previously

noted in **Section 3.3.3.3**, field investigations in spring/early summer of 2016 identified marginally suitable habitat for this species, including several wooded areas identified across the study area; however, these wooded areas are likely too small and disturbed to support this species. No Hooded Warbler were identified during LGL's 2016 field investigations. No permitting is anticipated as this species is not regulated under the ESA.

4.3.3.7 Chimney Swift

Chimney Swift is listed and is regulated as 'Threatened' under the ESA and SARA. As previously noted (see **Section 3.3.3.3**), field investigations have concluded that the study area provides marginally suitable habitat to support Chimney Swift, including anthropogenic areas and open habitats. However, the only suitable nesting habitat for this species would be associated with buildings (i.e. chimneys). No Chimney Swift were identified during field investigations. As such, further field investigations in anthropogenic habitat types (i.e. targeting potential chimney nesting habitat), undertaken during the appropriate season and using appropriate species-specific protocols for surveying for this species, should be conducted prior to construction to establish their presence or absence, and, thus, the appropriate steps for protection and permitting.

4.3.3.8 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. As previously noted (see **Section 3.3.3.3**), field investigations identified several Eastern Wood Pewee individuals which were restricted to wooded areas in the vicinity of the Rainbow Creek (H6) crossing. Encroachment into these areas as a result of the 407 Transitway and station construction may occur. However, it is likely that the individual birds observed are not dependent upon these specific foraging areas as many similar habitats exist in surrounding areas. As such, impacts to this species are expected to be minimal. No permitting is anticipated as this species is not regulated under the ESA.

4.3.3.9 Bank Swallow

Bank Swallow is listed and is regulated as 'Threatened' under the ESA. As previously noted (see **Section 3.3.3.3**), field investigations have concluded that marginally suitable Bank Swallow nesting habitat was identified, including eroded watercourse banks that were identified across the study area. No Bank Swallow were identified during field investigations. As such, further field investigations along eroded watercourse banks should be conducted prior to construction to establish their presence or absence, and, thus, the appropriate steps for protection and permitting.

4.3.3.10 Barn Swallow

Barn Swallow is listed and is regulated as 'Threatened' under the ESA. As previously noted (see **Section 3.3.3.3**), field investigations undertaken by LGL in late spring/early summer of 2016 identified foraging Barn Swallow at a number of sites across the study area. It is likely that the individual birds observed are not dependent upon these specific foraging areas as many similar habitats exist in surrounding areas. Two Barn Swallow nesting colonies were also identified within the study area, including nests on a structure in parkland east of Dixie Road and south of 407 ETR and an additional nesting colony under the 407 ETR bridge structure at the Lower Humber River (H7) crossing. The 407 Transitway runningway and stations do not currently encroach on either nesting structure. Further field investigations should be conducted prior to construction to confirm the breeding status of Barn Swallow, and, thus, the appropriate steps for protection and permitting.

4.3.3.11 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. As previously noted (see **Section 3.3.3.3**), field

investigations have concluded that Wood Thrush has the potential to be present within mature deciduous and mixed forest habitat communities identified within the study area. No Wood Thrush were identified during LGL's 2016 field investigations. No permitting is anticipated as this species is not regulated under the ESA.

4.3.3.12 Eastern Meadowlark and Bobolink

Eastern Meadowlark and Bobolink are listed and are regulated as 'Threatened' under the ESA. As previously noted (see **Section 3.3.3.3**), field investigations have concluded that Eastern Meadowlark and Bobolink have the potential to be present within open-country, meadow and agricultural habitat types found across the study area. However, the aforementioned habitats identified during LGL's 2016 surveys typically did not consist of grass dominated vegetation as preferred by this species. No Eastern Meadowlark or Bobolink were identified during LGL's 2016 field investigations. As such, further field investigations in grass-dominated open-country habitat types, undertaken during the appropriate season using MNRFP protocols for surveying for these species, should be conducted prior to construction to establish their presence or absence, and, thus, the appropriate steps for protection and permitting.

4.3.3.13 Little Brown Myotis

Little brown myotis is listed and is regulated as 'Endangered' under the ESA and SARA. As previously noted (see **Section 3.3.3.3**), field investigations have concluded that little brown myotis has the potential to be found across much of the study area, particularly around buildings and forest communities. However, no incidental observations of little brown myotis were recorded during LGL's 2016 field investigations; although no targeted surveys for this species were conducted. As such, further field investigations near buildings and forest communities, undertaken during the appropriate season using MNRFP protocols for surveying for this species, should be conducted prior to construction to establish their presence or absence, and, thus, the appropriate steps for protection and permitting.

4.3.3.14 Northern Myotis

Northern myotis is listed and is regulated as 'Endangered' under the ESA and SARA. As previously noted (see **Section 3.3.3.3**), field investigations have concluded that northern myotis has the potential to be found within forest communities. However, no incidental observations of northern myotis were recorded during LGL's 2016 field investigations; although no targeted surveys for this species were conducted. As such, further field investigations in forest communities, undertaken during the appropriate season using MNRFP protocols for surveying for this species, should be conducted prior to construction to establish their presence or absence, and, thus, the appropriate steps for protection and permitting.

4.3.3.15 Monarch

Monarch is listed as 'Special Concern' under the ESA and SARA; however, this species is not a regulated species ('Endangered' or 'Threatened') under either act. As previously noted (see **Section 3.3.3.3**), field investigations have concluded that Monarch has the potential to be present within open-country, meadow (including roadside vegetation) and agricultural habitat types identified across the study area. No incidental observations of Monarch were recorded during LGL's 2016 field investigations; although no targeted surveys for this species were conducted. No permitting is anticipated as this species is not regulated under the ESA.

4.3.4 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): Etobicoke Creek West Branch (E5), Mimico Creek (M7), West Humber River (H1), Rainbow Creek (H6), and the Lower Humber River (H7). 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: Fletchers Creek (C1), Etobicoke Creek (West Branch), Tributary of Spring Creek (E7), Spring Creek (E8), and Mimico Creek Albion Creek (H2). Lands in the vicinity of these structures comprise some of the highest quality natural heritage features within the vicinity of the study area and provide important north-south 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 animals 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.

4.3.5 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.

4.3.6 Wildlife Passage Considerations for Enhanced Functionality

4.3.6.1 Vegetation Planting at Wildlife Crossing Structures

Low stature vegetation is considered an important component of wildlife crossing use 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.

4.3.6.2 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 identified in **Section 4.3.4**. 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.

4.3.6.3 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).

4.3.6.4 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 crossings structures identified in **Section 4.3.4**, 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 identified in **Section 4.3.4**.

4.3.7 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.

4.3.8 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.

5.0 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:

- design, implement, maintain and remove erosion and sedimentation control measures in accordance with OPSS 805 (Construction Specification for Temporary Erosion and Sediment Control Measures) and the Environmental Guide for Erosion and Sedimentation Control During Construction of Highway Projects (MTO 2007);
- manage 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;
- the extent and duration that soils are exposed to the elements will be limited to the minimum area and time necessary to perform the work;
- old field seed mix, mulch, tackifier or an erosion control blanket will be placed in areas of soil disturbance to provide adequate slope protection and long-term slope stabilization;
- erosion and sedimentation control measures will be monitored during construction to ensure their effectiveness;
- 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;
- identify vegetation community offsets for the removal of wetland and forest communities;
- 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, TRCA) as part of project implementation);
- 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;
- 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);
- 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;
- further correspondence shall take place with MNRF to discuss the wildlife species at risk that have been identified or have the potential to be located in the vicinity of the study area, in particular Barn Swallow and Eastern Wood Pewee, any potential impacts of the proposed work on these species, and any requirements for permitting under the Ontario ESA; and,
- further field investigations should be undertaken during the appropriate season using MNRF protocols as required (i.e. for Barn Swallow). Surveying for these species should be conducted to establish their presence or absence, and, thus, the appropriate steps for protection and permitting.

6.0 REFERENCES

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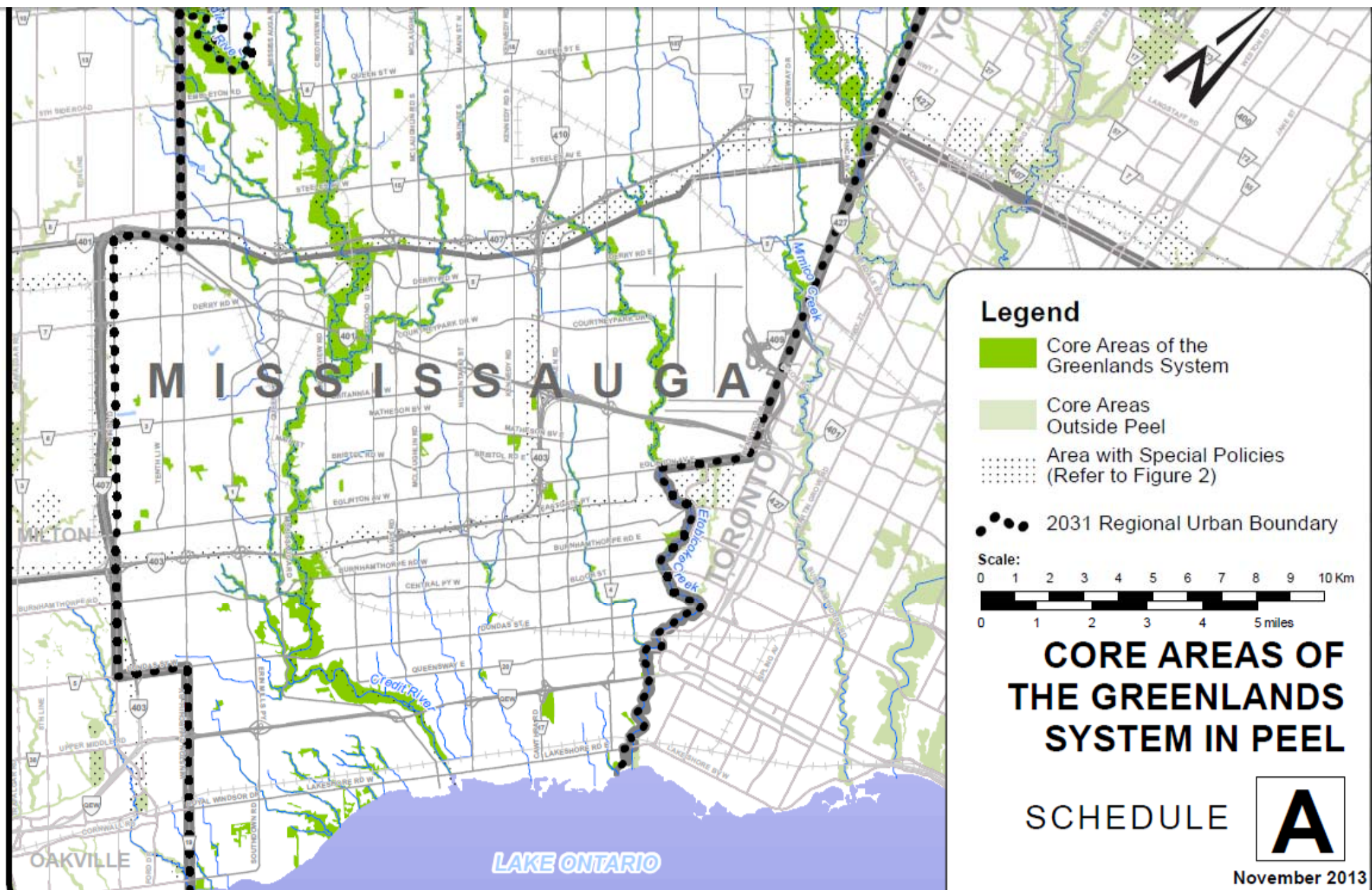
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APPENDICES

APPENDIX A.
MUNICIPAL OFFICIAL PLAN
NATURAL HERITAGE SCHEDULES/MAPS

**REGION OF PEEL
OFFICIAL PLAN NATURAL HERITAGE
SCHEDULES/MAPPING**



Legend

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



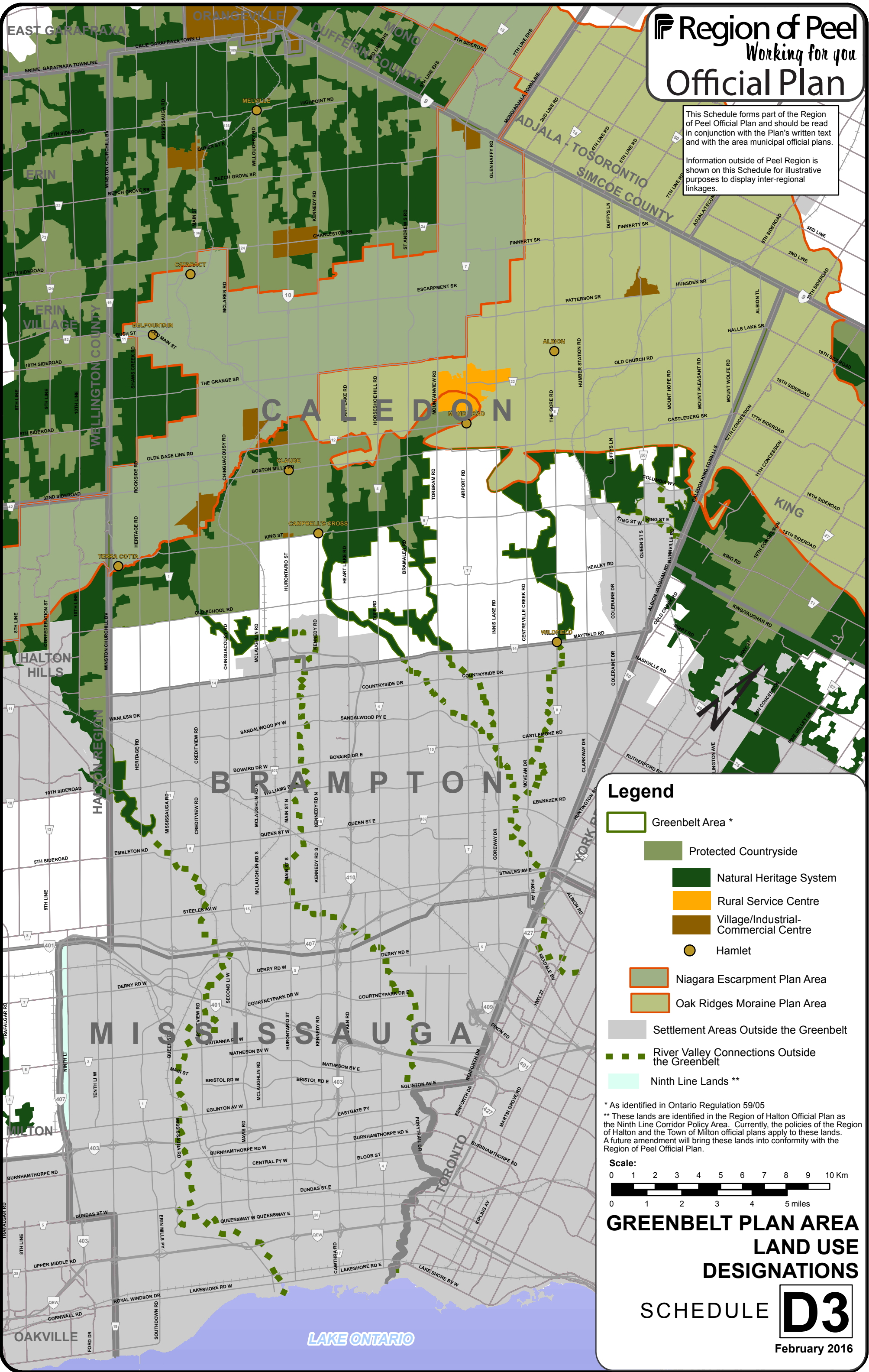
CORE AREAS OF THE GREENLANDS SYSTEM IN PEEL

SCHEDULE **A**

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.

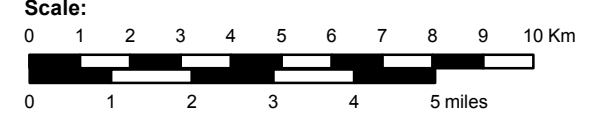
Information outside of Peel Region is shown on this Schedule for illustrative purposes to display inter-regional linkages.



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 **

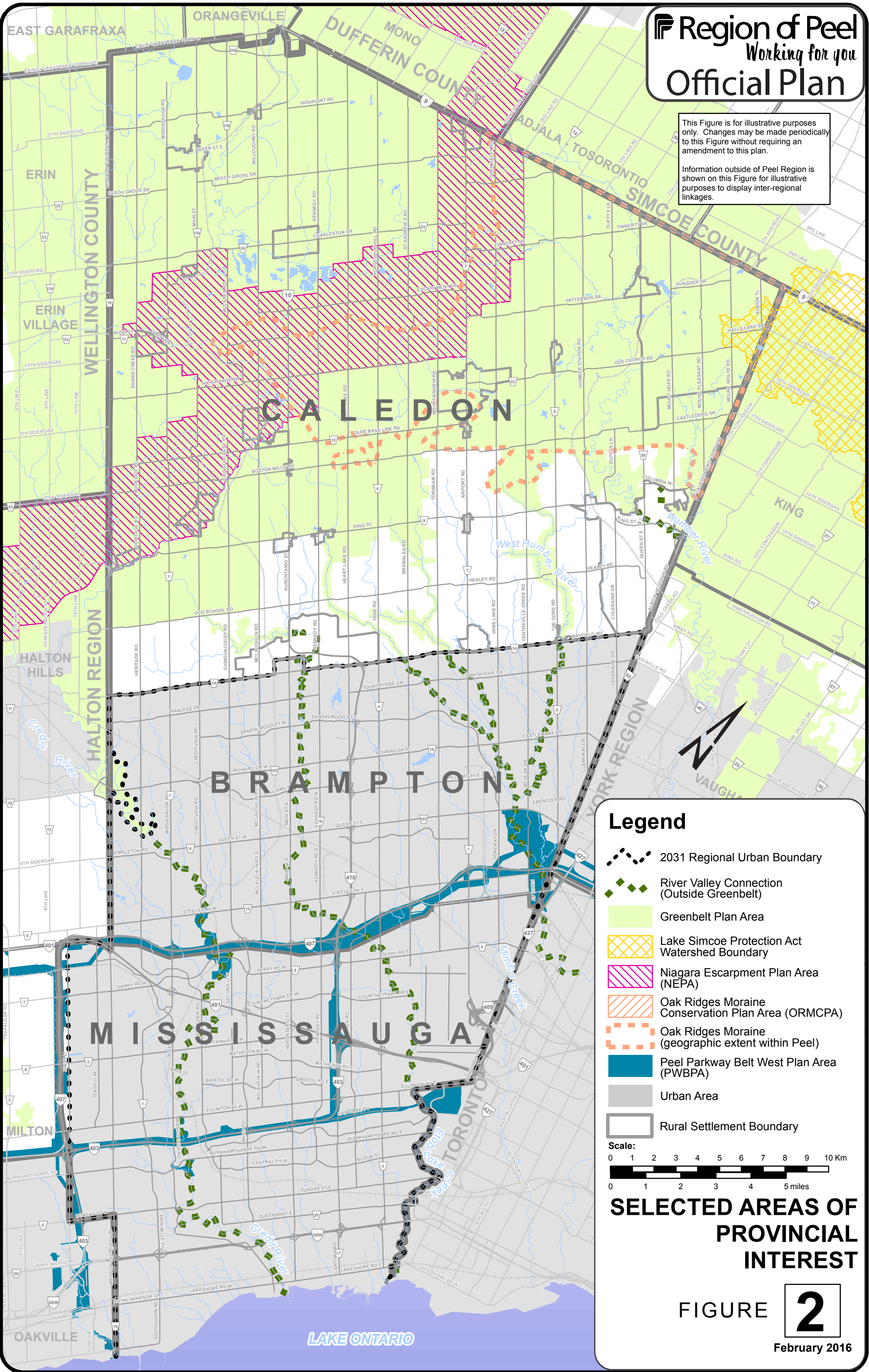
* As identified in Ontario Regulation 59/05
 ** These lands are identified in the Region of Halton Official Plan as the Ninth Line Corridor Policy Area. Currently, the policies of the Region of Halton and the Town of Milton official plans apply to these lands. A future amendment will bring these lands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



**GREENBELT PLAN AREA
LAND USE
DESIGNATIONS**

This Figure is for illustrative purposes only. Changes may be made periodically to this Figure without requiring an amendment to this plan.

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



Legend

- 2031 Regional Urban Boundary
- River Valley Connection (Outside Greenbelt)
- Greenbelt Plan Area
- Lake Simcoe Protection Act Watershed Boundary
- Niagara Escarpment Plan Area (NEPA)
- Oak Ridges Moraine Conservation Plan Area (ORMCPA)
- Oak Ridges Moraine (geographic extent within Peel)
- Peel Parkway Belt West Plan Area (PWBPA)
- Urban Area
- Rural Settlement Boundary

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

SELECTED AREAS OF PROVINCIAL INTEREST

FIGURE **2**

**REGION OF YORK
OFFICIAL PLAN NATURAL HERITAGE
SCHEDULES/MAPPING**

MAP 1

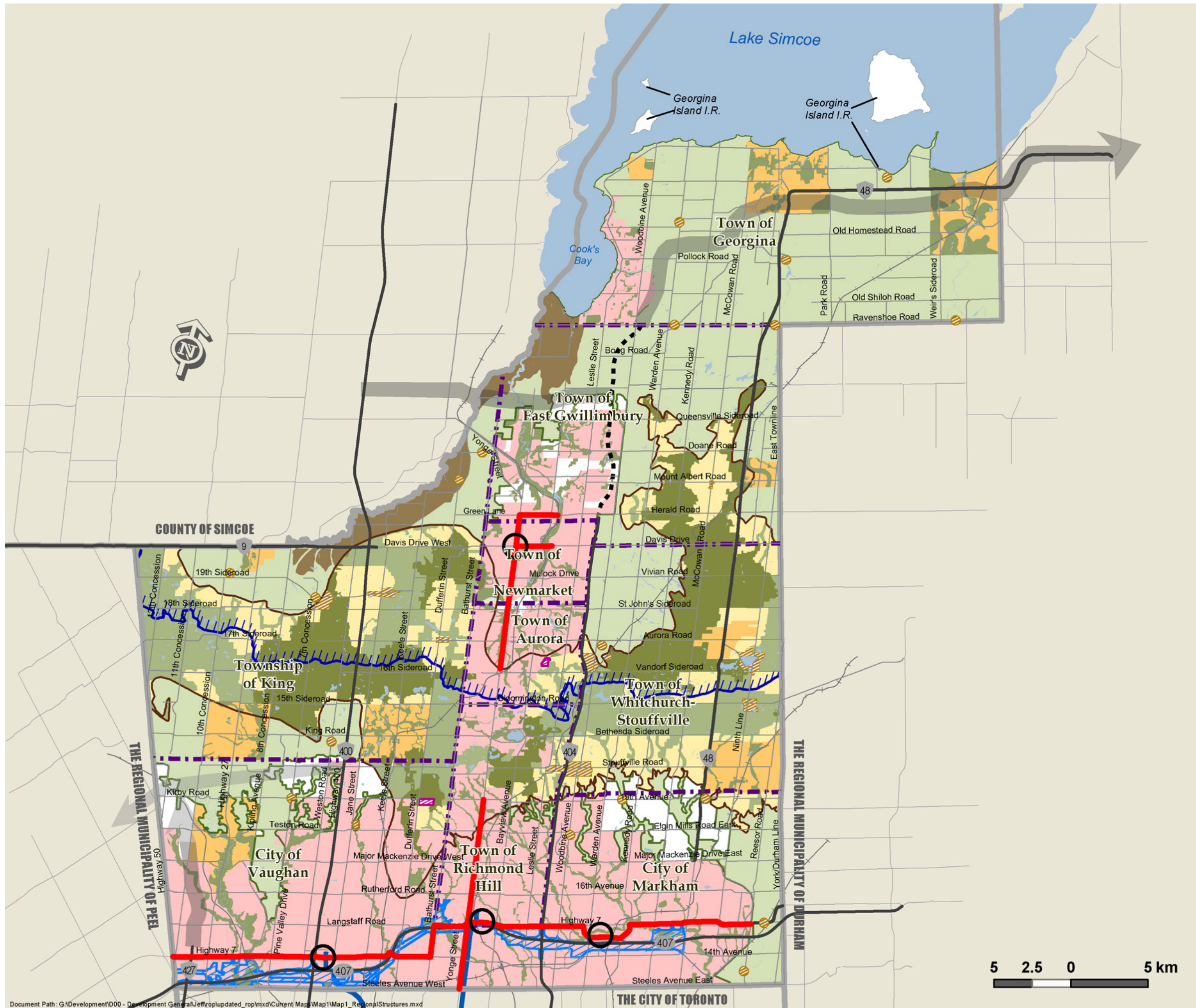
REGIONAL STRUCTURE

-  Regional Centre
-  Regional Corridor
-  Subway Extension
-  Urban Area
-  Towns and Villages
-  Regional Greenlands System (Schematic, See Map 2 for details)
- Oak Ridges Moraine Conservation Plan**
 -  Oak Ridges Moraine Boundary
 -  Natural Core Area Designation
 -  Natural Linkage Area Designation
 -  Countryside Area Designation/Hamlet
- Greenbelt Plan**
 -  Greenbelt Plan Area Boundary
 -  Greenbelt Protected Countryside/Hamlet
 -  Holland Marsh Specialty Crop Area
 -  Area Subject to the Lake Simcoe Protection Plan
 -  Parkway Belt West Plan
 -  Ministers Decision on ORMCP Designation Deferred
- Provincial Highways**
 -  Existing
- Controlled Access Highway**
 -  Under Construction
- Planned Corridors - Transportation**
 -  Proposed - EA approved
 -  Conceptual - Alignment Not Defined
 -  Municipal Boundary
 -  Regional Boundary

Note: For detailed land use designations outside of the Urban Area, Towns & Villages and Natural Core and Natural Linkage Areas of the Oak Ridges Moraine Conservation Plan see Map 8 - Agricultural and Rural Area and policy 5.1.12
















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MAP 2

REGIONAL GREENLANDS SYSTEM



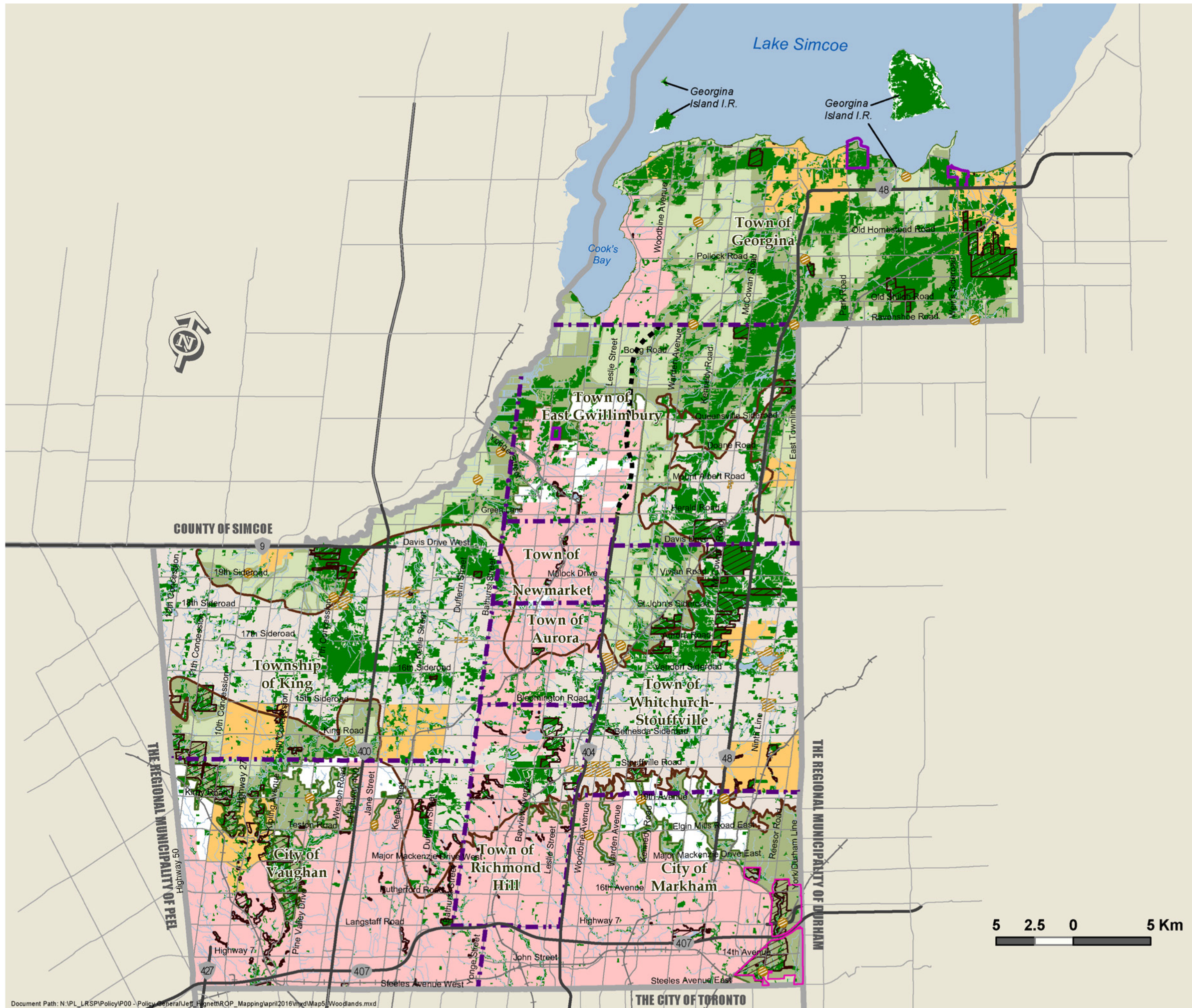
-  Regional Greenlands System
-  Greenlands System Vision
-  Urban Area
-  Towns and Villages
-  Hamlet
- Oak Ridges Moraine Conservation Plan**
 -  Oak Ridges Moraine Boundary
 -  Oak Ridges Moraine Plan Area
- Greenbelt Plan**
 -  Greenbelt Plan Area Boundary
 -  Greenbelt Protected Countryside/Hamlet
 -  Area Subject to the Lake Simcoe Protection Plan
- Provincial Highways**
 -  Existing
 -  Under Construction
-  Municipal Boundary
-  Regional Boundary

















*The Greenlands System Vision identified on Map 2 of this Plan is intended to conceptually identify, with broad arrows, the general location of corridors within and beyond the Region that will perform major linkage functions on a Regional scale and will be further assessed as part of ongoing planning initiatives



MAP 5

WOODLANDS



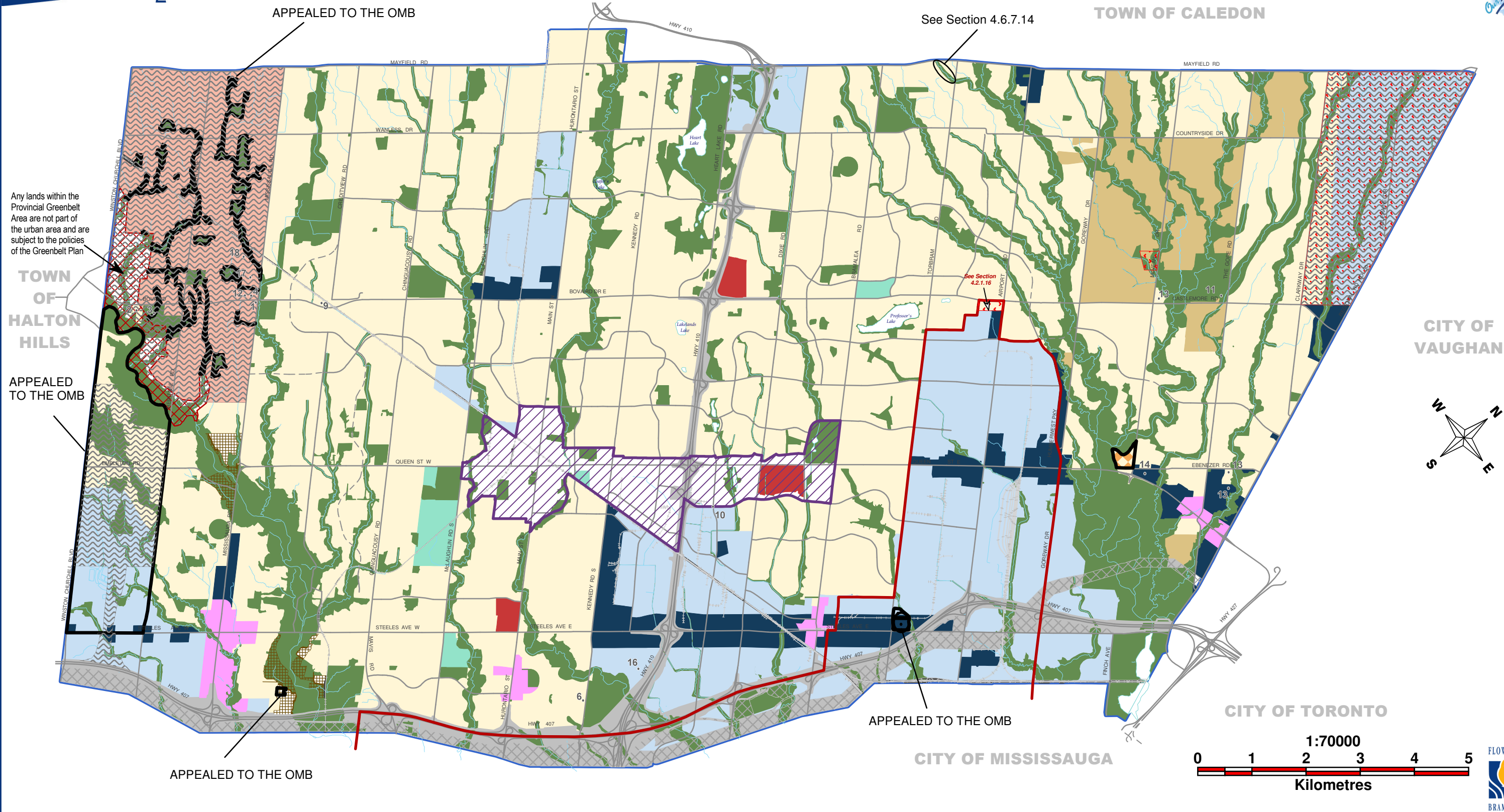
-  Woodlands
-  Conservation Area/Regional Forest
-  Provincial Park/Nature Reserve
-  Rouge Park
- Oak Ridges Moraine Conservation Plan**
 -  Oak Ridges Moraine Boundary
 -  Oak Ridges Moraine Plan Area
- Greenbelt Plan**
 -  Greenbelt Plan Area Boundary
 -  Greenbelt Protected Countryside/Hamlet
 -  Natural Heritage System
-  Urban Area
-  Towns and Villages
-  Hamlet
- Provincial Highways**
 -  Existing
 -  Under Construction
-  Municipal Boundary
-  Regional Boundary



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© Queen's Printer for Ontario 2003-2013. Includes Greenbelt and Oak Ridges Moraine Boundaries and Water Features

**CITY OF BRAMPTON
OFFICIAL PLAN NATURAL HERITAGE
SCHEDULES/MAPPING**



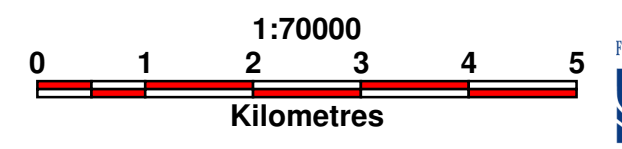
LEGEND			
	RESIDENTIAL		BUSINESS CORRIDOR
	ESTATE RESIDENTIAL		INDUSTRIAL
	VILLAGE RESIDENTIAL		MAJOR INSTITUTIONAL
	REGIONAL RETAIL		OPEN SPACE
	OFFICE		PROVINCIAL GREENBELT AREA/PROTECTED COUNTRYSIDE
	CENTRAL AREA		SPECIAL LAND USE POLICY AREA See Section 4.14.3
	N-W BRAMPTON URBAN DEVELOPMENT AREA		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.

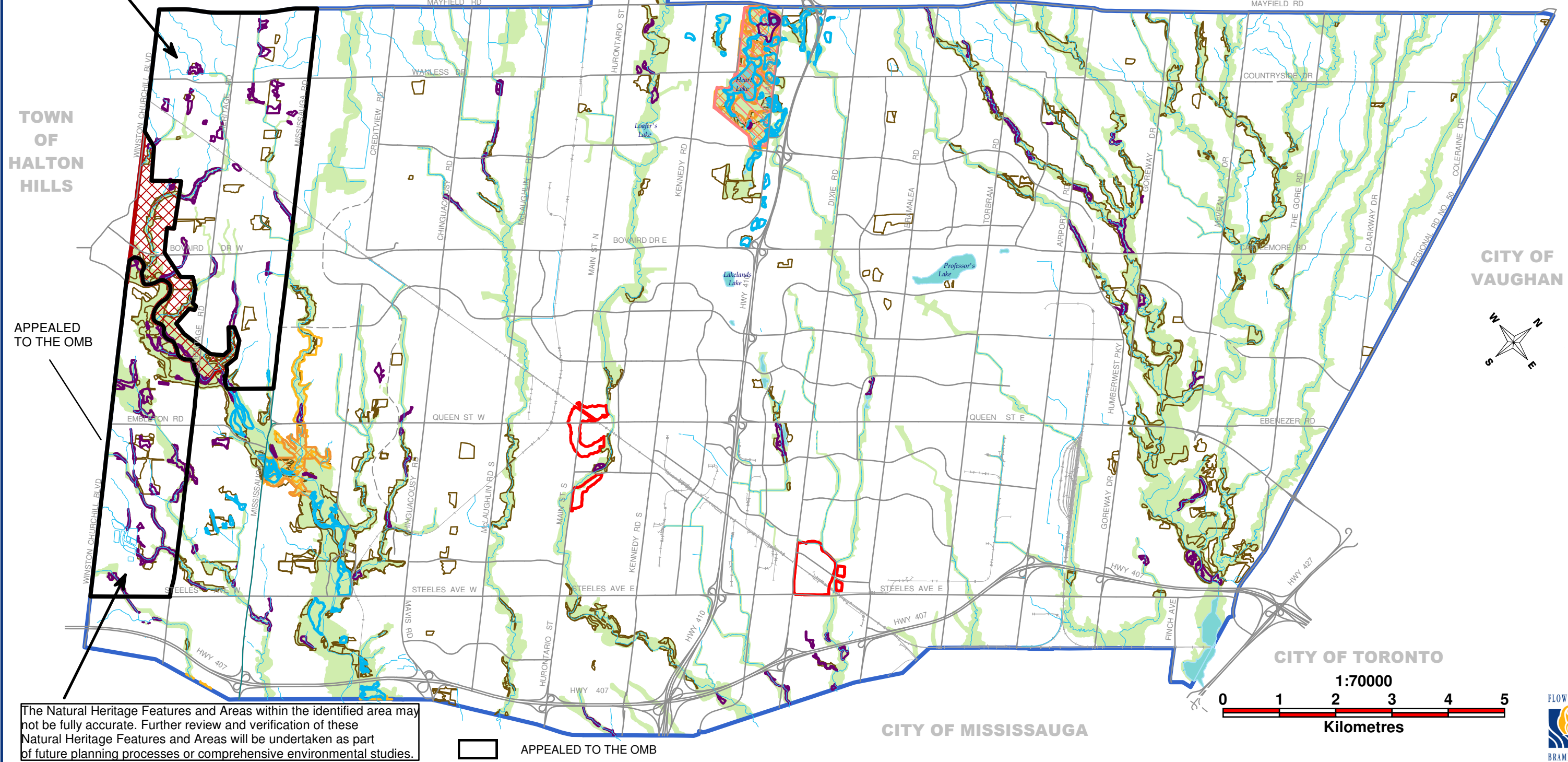
City of Brampton 2006 Official Plan September 2015 Office Consolidation.



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.

APPEALED 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

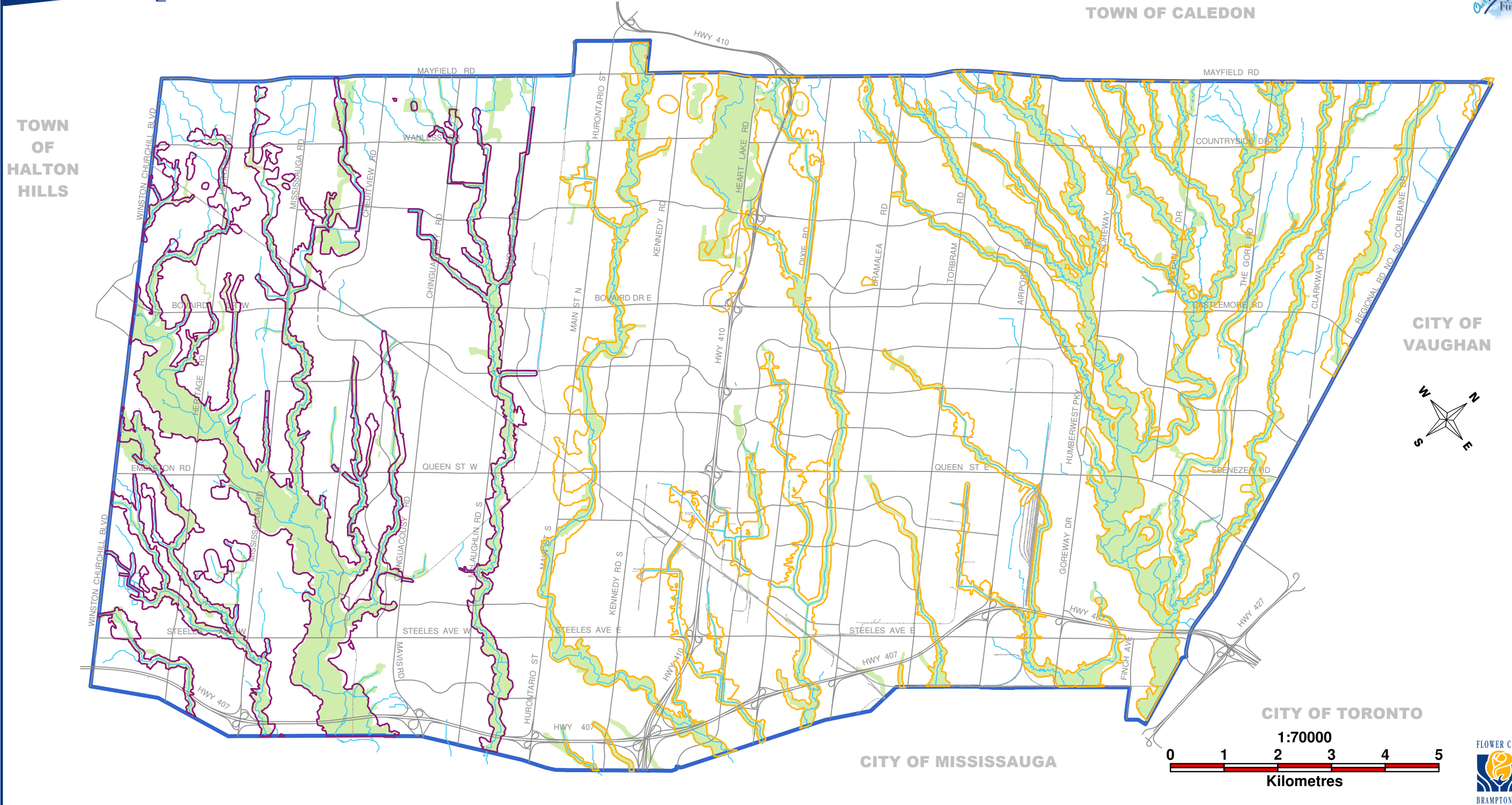
Last Amended Date
Aug 10th, 2015

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



Legend

Toronto and Region Conservation Authority (TRCA) Regulation (Ontario Regulation 166/06) Area

This represents the area subject to Ontario Regulation 166/06: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. Note that the text of the Regulation takes precedence over the Regulation Limit mapping and that some regulated features may not appear on the Regulation Limit mapping, as therefore, the extent of the areas and features to be regulated will be confirmed through site visits and/or appropriate environmental studies. The Regulation Limit is a compilation of various information sources. Engineered floodplain mapping and estimated floodplain mapping were prepared by engineering consultants and assigned an allowance of up to 15 metres. Erosion Hazards were determined by TRCA and assigned an allowance of up to 15 metres. Shoreline Hazards were determined by TRCA and assigned an allowance of up to 15 metres. Provincially Significant Wetland (PSW), Locally Significant Wetland (LSW) and the Oak Ridges Moraine (ORM) wetland delineations were provided by the Ministry of Natural Resources. All other wetlands delineations were determined by using TRCA Ecological Land Classification (ELC) System mapping. PSW and ORM wetlands greater than 0.5 hectares in size were assigned an allowance of 120 metres in order to identify lands where development could interfere with the function of a wetland. LSW and ELC wetlands greater than 0.5 hectares in size were assigned an allowance of 30 metres. Please refer to Reference Manual for Determination of Regulation Limits (TRCA, 2005) or for more information, contact TRCA (416 - 661-6600).

Credit Valley Conservation Authority (CVC) Regulation (Ontario Regulation 160/06) Area

This represents the area subject to Ontario Regulation 160/06: Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. Note that the text of the Regulation takes precedence over the Regulation Limit mapping and that some regulated features may not appear on the Regulation Limit mapping, as therefore, the extent of the areas and features to be regulated will be confirmed through site visits and/or appropriate environmental studies. The Regulation Limit mapping is a compilation of various information sources. Engineered and estimated floodplains, meander belt and estimated slope hazards, and Lake Ontario shorelines hazards mapping were prepared by engineering consultants and assigned an allowance of up to 15 metres. Provincially Significant Wetland (PSW) and Locally Significant Wetland (LSW) wetland delineations were provided by the Ministry of Natural Resources. All other wetlands delineations were determined by using CVC's Ecological Land Classification (ELC) System mapping. PSW and Oak Ridges Moraine (ORM) wetlands greater than 0.5 hectares in size were assigned an allowance of 120 metres in order to identify lands where development could interfere with the function of a wetland. LSW and ELC wetlands greater than 0.5 hectares in size were assigned an allowance of 30 metres. Please refer to Credit Valley Conservation Reference Manual for the Determination of Regulation Limits (September 2005) or for more information, contact CVC (905-670-1615).

Last Amended Date
Nov 1st, 2013

NOTES:

VALLEYLAND/WATERCOURSE CORRIDOR WATERCOURSES AND TRIBUTARIES

Are shown for context purposes. The boundaries and alignments of these features are approximate and are not to be scaled.

This figure does not form part of the Official Plan of the City of Brampton.

City of Brampton 2006 Official Plan September 2015 Office Consolidation.

CITY OF TORONTO

1:70000

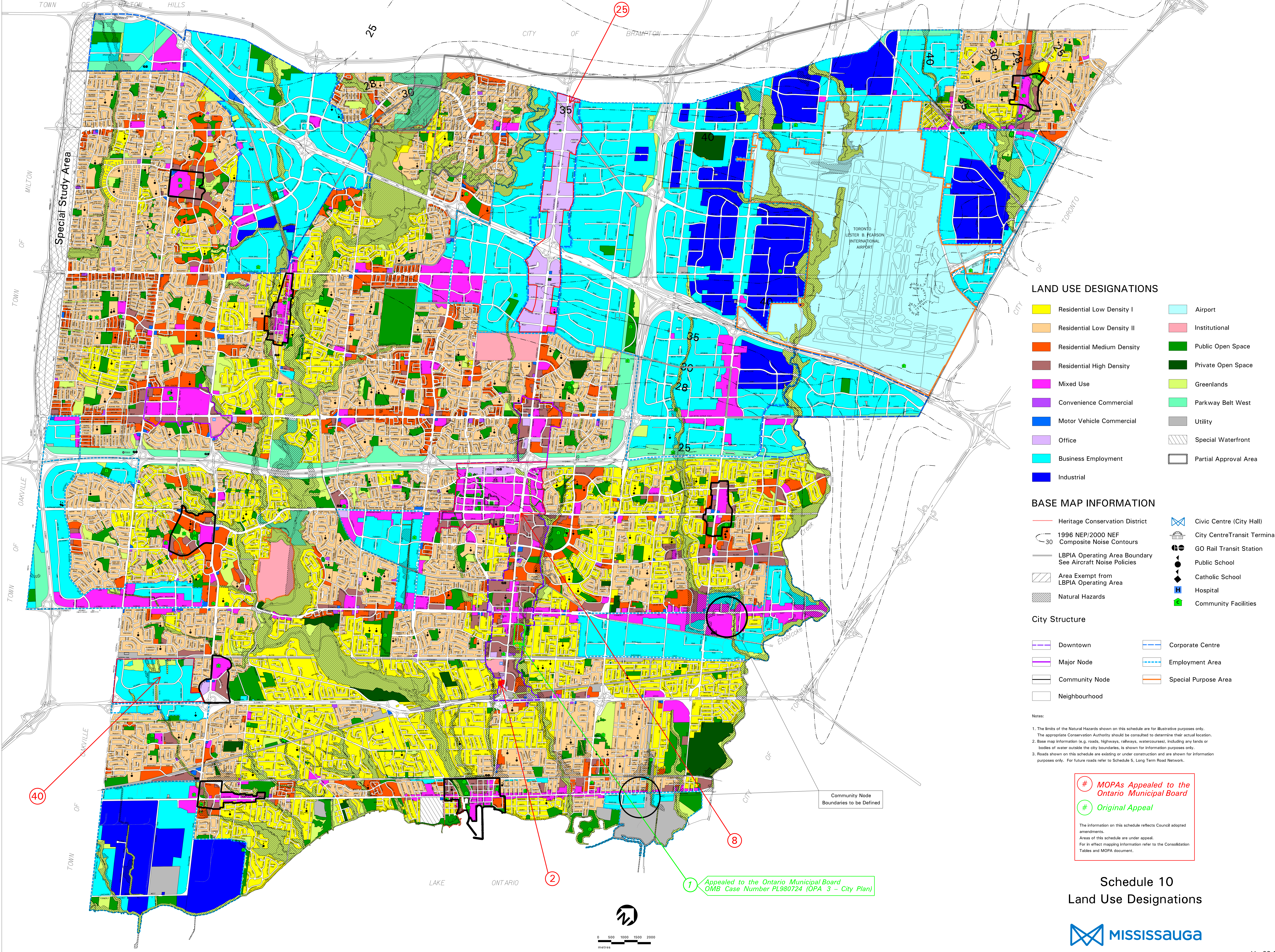
0 1 2 3 4 5

Kilometres

Appendix C

Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation Mapping

**CITY OF MISSISSAUGA
OFFICIAL PLAN NATURAL HERITAGE
SCHEDULES/MAPPING**



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 Exempt from LBPIA Operating Area | | Public School |
| | Natural Hazards | | 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.

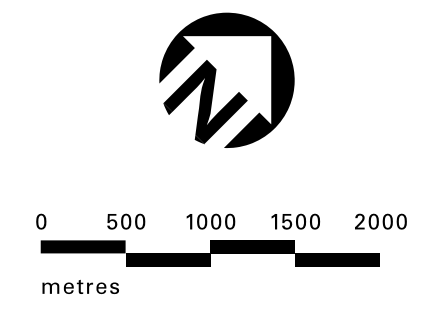
MOPAs Appealed to the Ontario Municipal Board

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.

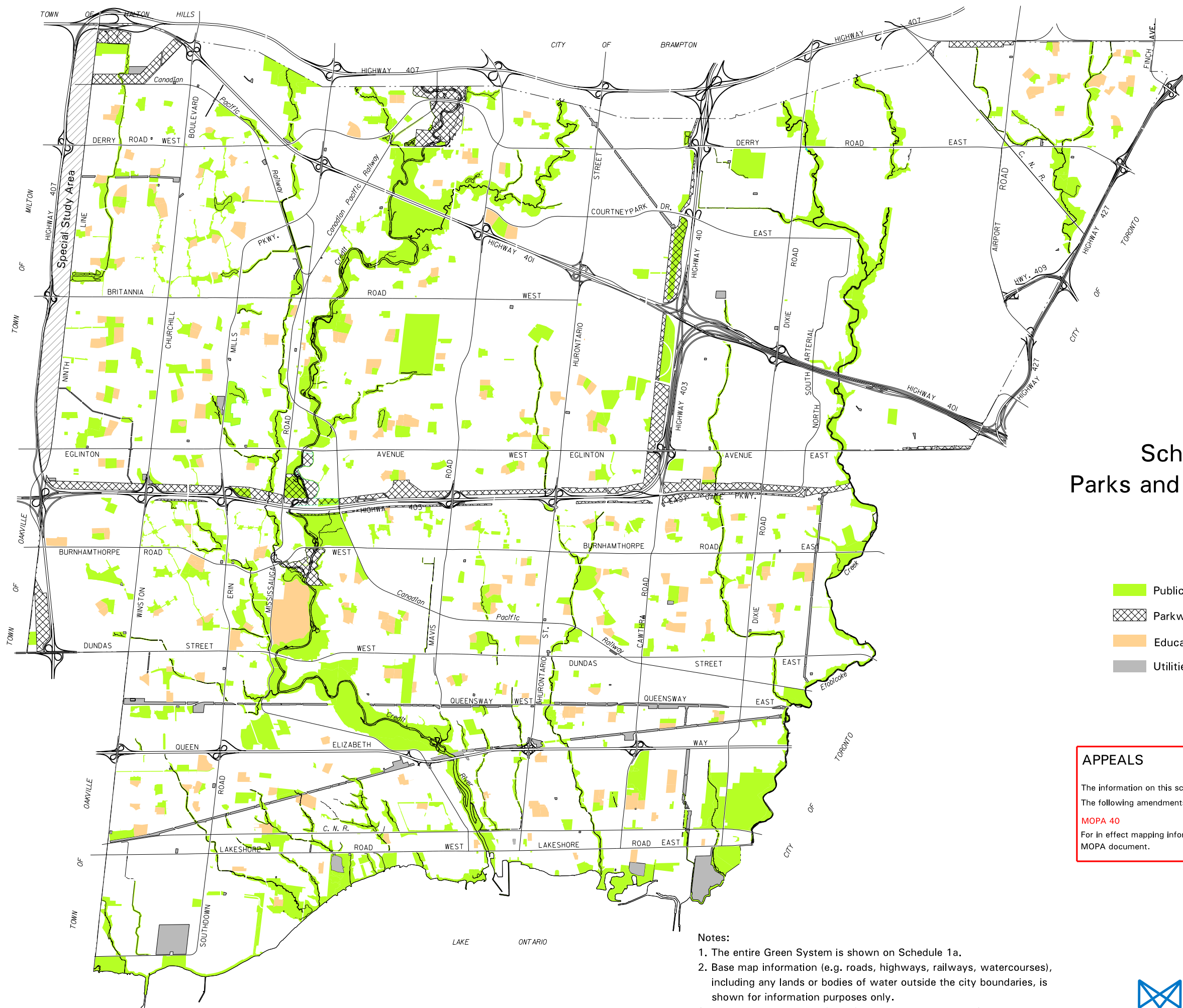
1 *Appealed to the Ontario Municipal Board OMB Case Number PL980724 (OPA 3 - City Plan)*

Community Node Boundaries to be Defined



**Schedule 10
Land Use Designations**





Schedule 4 Parks and Open Spaces

- Public and Private Open Spaces
- Parkway Belt West
- Educational Facilities
- Utilities

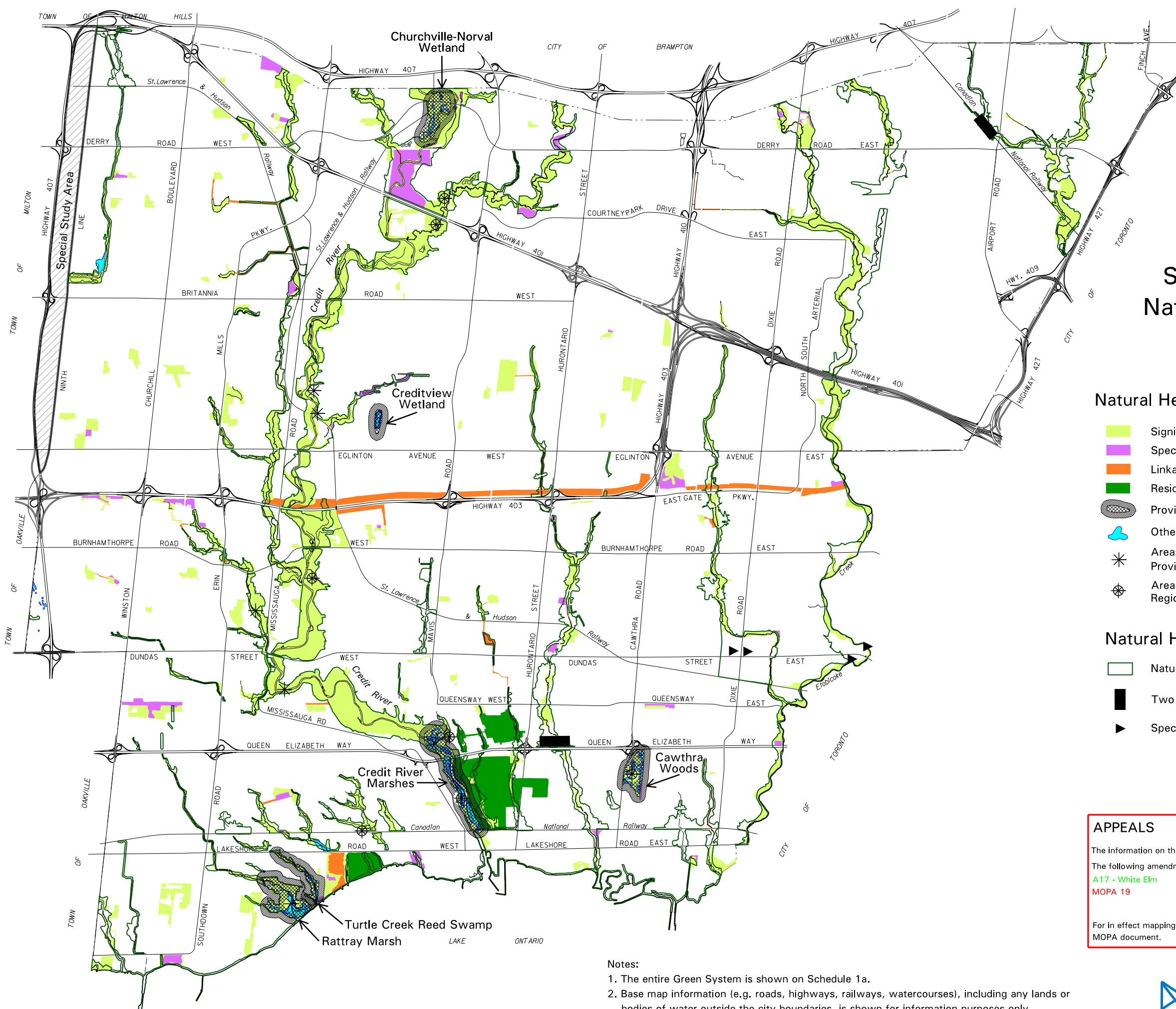
APPEALS

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

MOPA 40

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 Public and Private Open Spaces identified on this Schedule include lands designated Public Open Space, Private Open Space and Greenlands as shown on Schedule 10.



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:

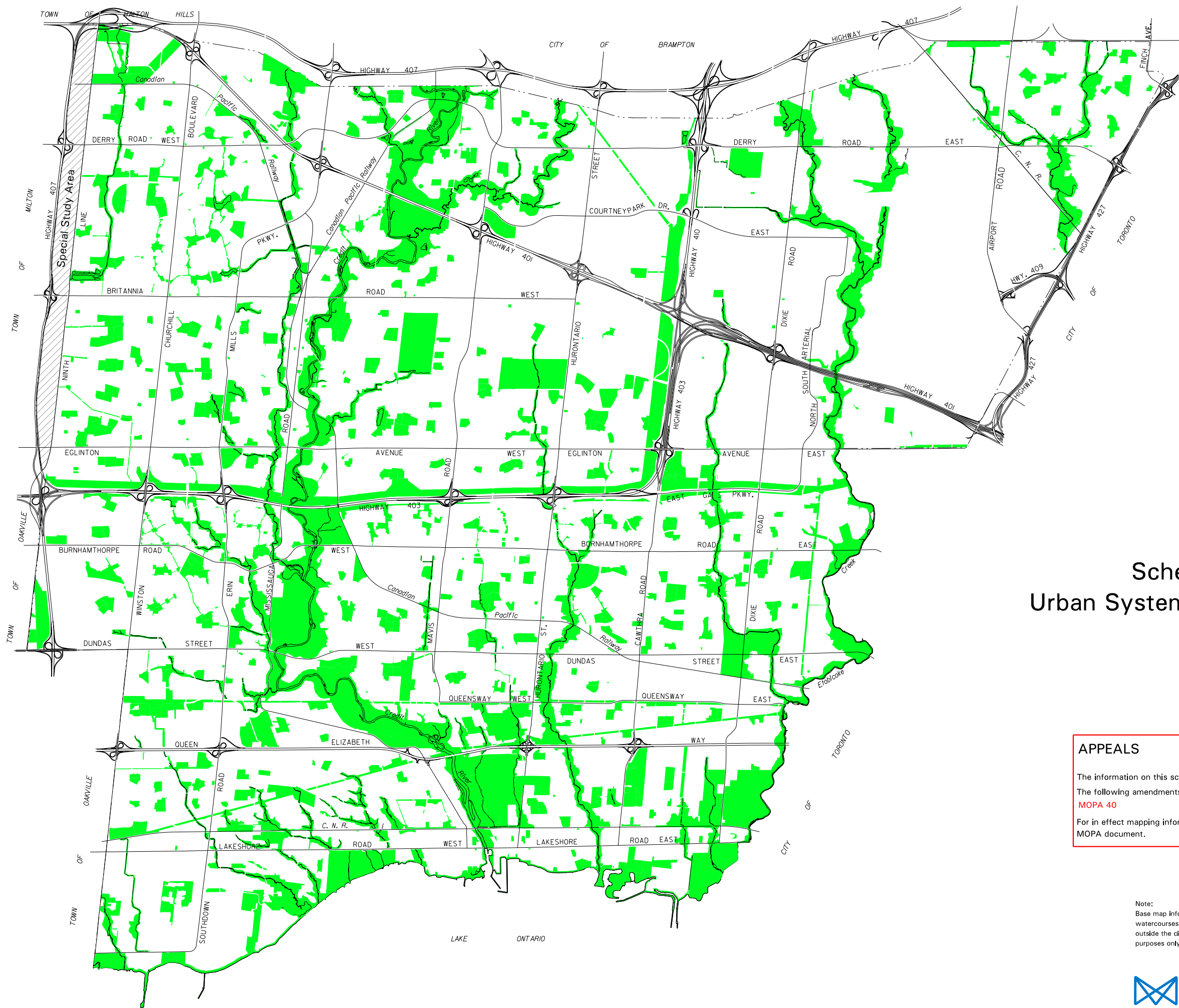
- A17 - White Elm
- MOPA 19

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.





Schedule 1a Urban System - Green System

APPEALS

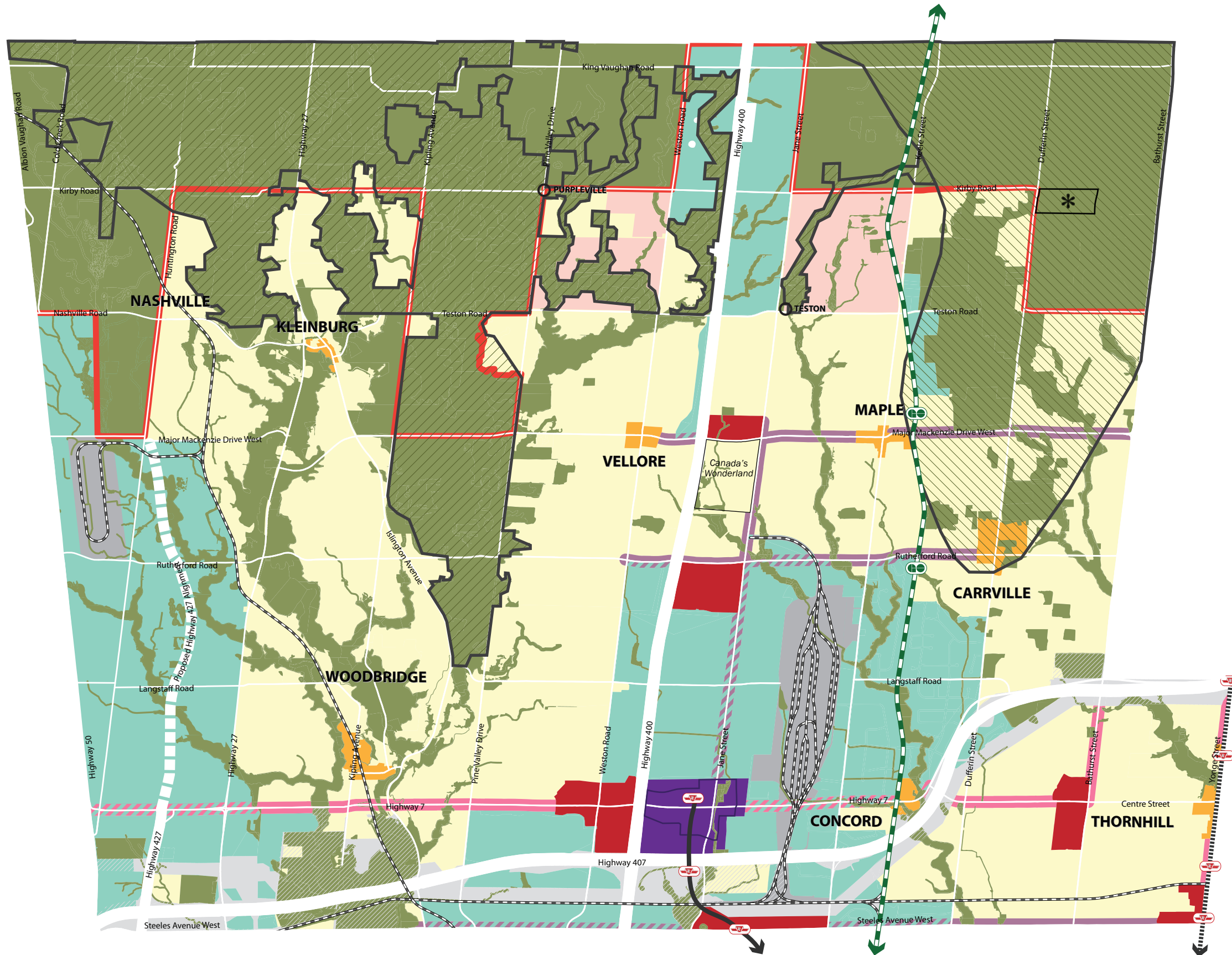
The information on this schedule reflects Council adopted amendments.
 The following amendments are under appeal and affect this schedule:
MOPA 40
 For in effect mapping information refer to the Consolidation Tables and MOPA document.

Note:
 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.



**CITY OF VAUGHAN
OFFICIAL PLAN NATURAL HERITAGE
SCHEDULES/MAPPING**

SCHEDULE 1
Urban Structure

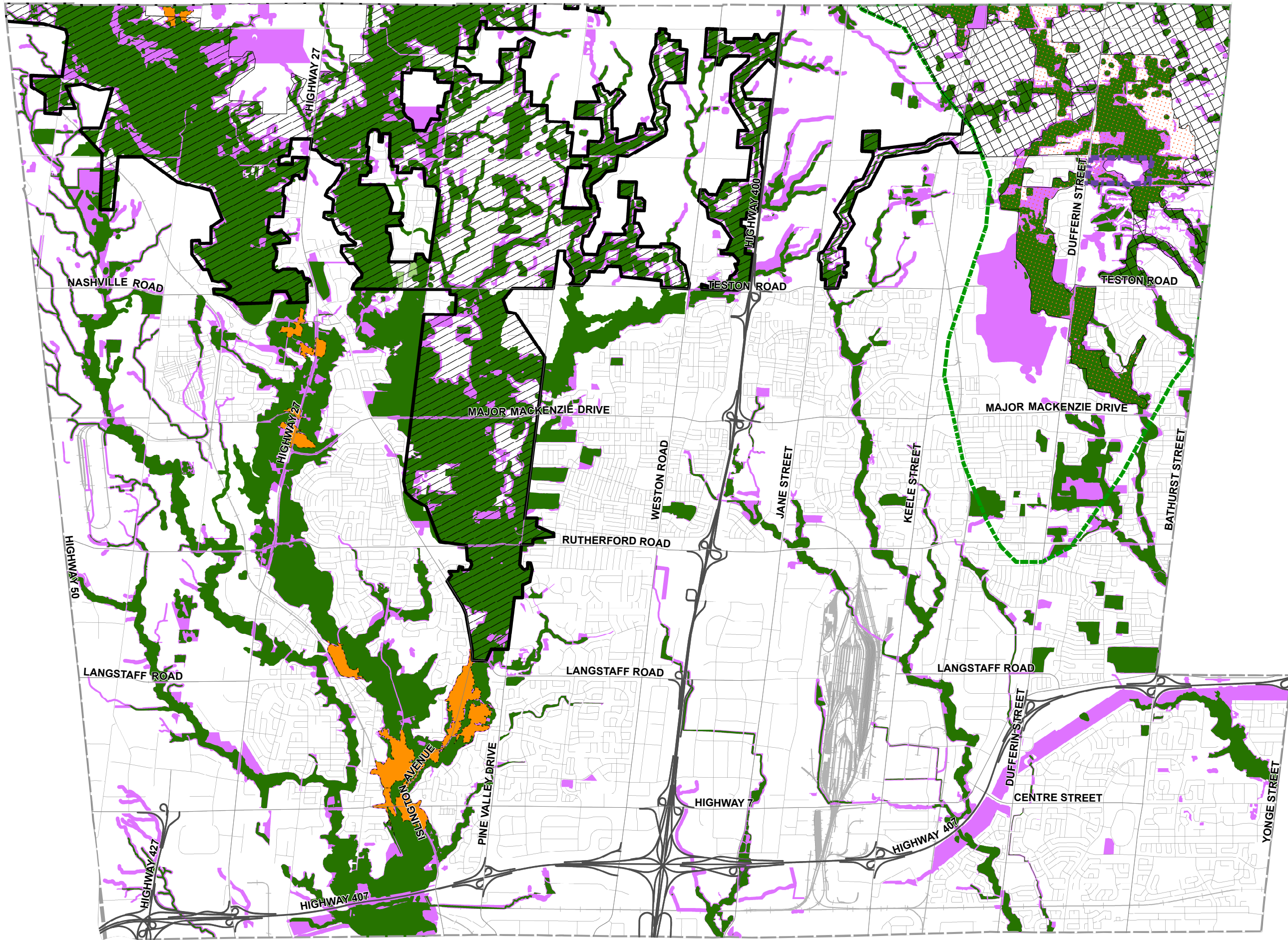


- Urban Boundary
 - Urban Growth Centre Boundary
- Stable Areas**
- Natural Areas and Countryside
 - Community Areas
 - New Community Areas
 - Employment Areas
 - Rail Facilities
- Intensification Areas**
- Vaughan Metropolitan Centre (Regional Centre)
 - Primary Centres
 - Local Centres
 - Regional Intensification Corridors
 - Regional Intensification Corridors within Employment Areas
 - Primary Intensification Corridors
 - Primary Intensification Corridors within Employment Areas
- Parkway Belt West Lands
 - Railway
 - Subway Extension
 - Proposed Subway Extension
 - GO Transit Network
 - Greenbelt Plan Area¹
 - Oak Ridges Moraine Conservation Plan Area¹
 - Urban Growth Centre Boundary
 - Hamlet
 - * See Minister's Decision on ORMCP Designation
 - Municipal Boundary

¹ See Schedule 4 for limits and land use information of the Greenbelt Plan Area and Oak Ridges Moraine Conservation Plan Area



Natural Heritage Network



- Core Features
- Enhancement Areas
- Built-Up Valley Lands¹
- Unapproved³

Greenbelt

- Greenbelt Plan Area Boundary²
- Greenbelt Natural Heritage System

ORM Conservation Plan

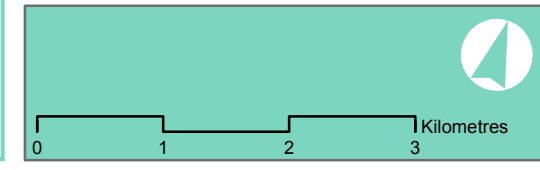
- Oak Ridges Moraine (ORM) Conservation Plan Boundary²
- Natural Core Area
- Natural Linkage Area
- Area Subject to ORMCA Minister's Zoning Order
- City of Vaughan Boundary

The policy text in Chapter 3 prevails over the mapping shown on Schedule 2 in determining the Natural Heritage Network. Core features shall be precisely delineated on a site-by-site basis through the approval of *Planning Act* Applications supported by appropriate technical studies. Refinements to the NHN may occur through Secondary Plan or development approval processes and shall be reflected on this schedule without the need for an Official Plan Amendment. Where the schedule does not accurately reflect an existing development approval, the schedule may be updated without the need for an Official Plan Amendment.

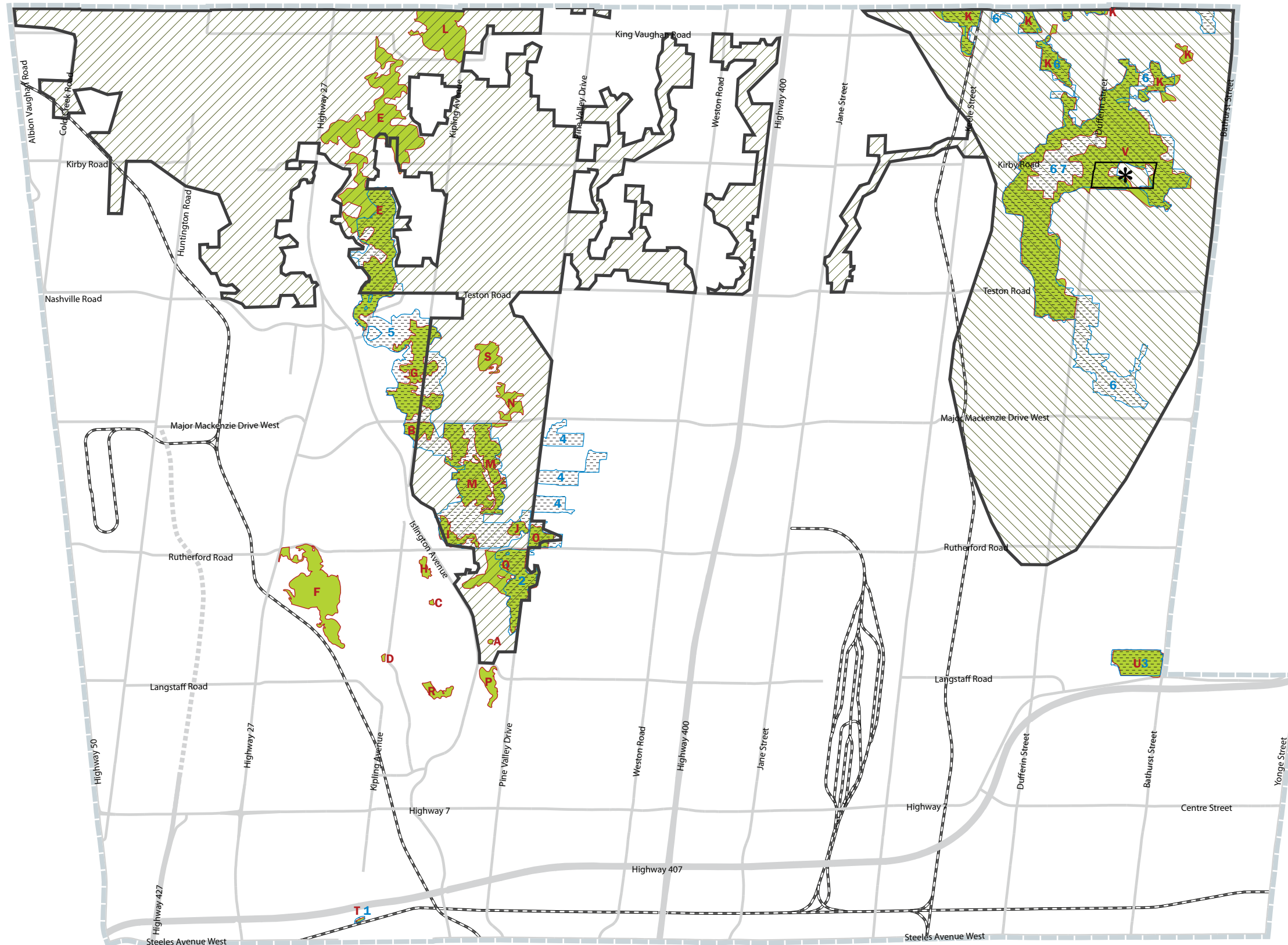
For watercourses and waterbodies outside of well-defined valleys, the vegetation protection zone is to be established according to the policies in Chapter 3.

Enhancement areas are identified conceptually on Schedule 2 and the text shall be consulted to determine the final location and design.

- (1) Data provided by Urban Strategies.
- (2) See Schedule 4 for limits and the land use information of the Greenbelt Plan Area and the Oak Ridges Moraine Conservation Plan Area.
- (3) Sites under consideration for Core Feature additions, Core Feature deletions, or classification as an Enhancement Area



SCHEDULE 3
ESAs & ANSIs



- Environmentally Significant Areas
- Areas of Natural and Scientific Interest
- Greenbelt Plan Area¹
- Oak Ridges Moraine Conservation Plan Area¹
- * See Minister's Decision on ORMCP Designation
- Municipal Boundary

¹ See Schedule 4 for limits and land use information of the Greenbelt Plan Area and Oak Ridges Moraine Conservation Plan Area

Index of Environmentally Significant Areas

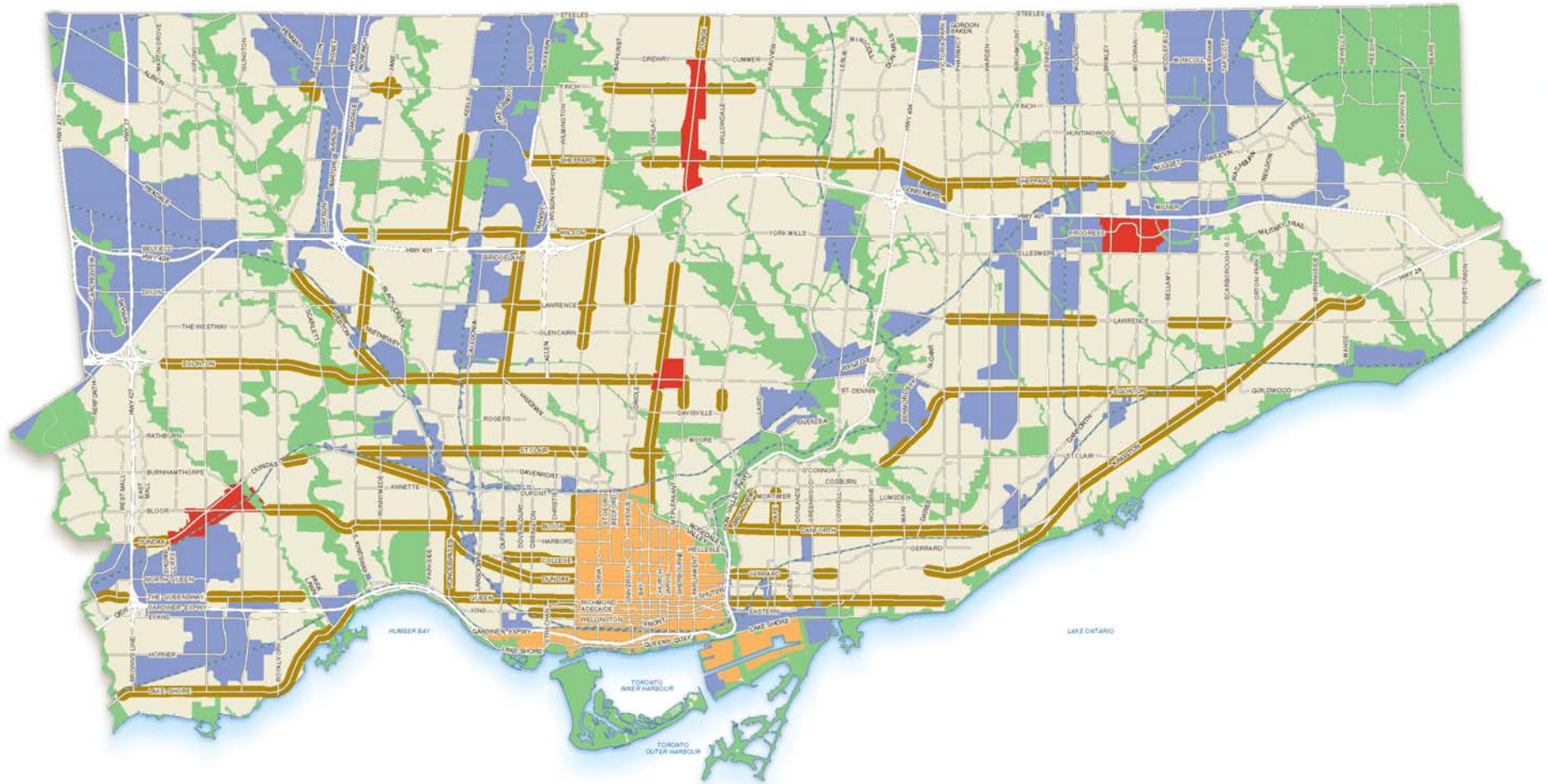
Area Name	ESA #	Watershed
A Boyd's Rock Cress	20	Humber River
B Boyd Forest	29	Humber River
C Carex Peckii Area No. 2	23	Humber River
D Clarence Street Forest	16	Humber River
E East Humber River	127	Humber River
F Elder Mills Forest	17	Humber River
G Glassgo	32	Humber River
H Graham's Forest	24	Humber River
I Graham's Forest Complex	25	Humber River
J Graham's Woods	27	Humber River
K King-Vaughan Complex	137	Humber River
L King Creek Forest	56	Humber River
M Kortright Area	28	Humber River
N McFayden Forest	30	Humber River
O McLeans's Forest	26	Humber River
P Pine Grove Forest	19	Humber River
Q Pine Valley Forest	21	Humber River
R Smith's Beech Forest	18	Humber River
S Sprengel's Forest	31	Humber River
T Woodbridge Cut	15	Humber River
U Baker's Wood's	128	Don River
V McGill Area	73	Don River

Index of Areas Natural and Scientific Interest

Area Name	Significance
1 Woodbridge Cut	Provincially Significant
2 Boyd Conservation Area & Adjacent Lands	Provincially Significant
3 Bakers Woods	Provincially Significant
4 Kleinburg Woodlots	Regionally Significant
5 Humber River	Regionally Significant
6 Maple Uplands and Kettle Wetlands	Regionally Significant
7 Oak Ridges Moraine Maple Spur	Regionally Significant



**CITY OF TORONTO
OFFICIAL PLAN NATURAL HERITAGE
SCHEDULES/MAPPING**





Note: For information purposes only
Boundaries are schematic

APPENDIX B.
ECOLOGICAL LAND CLASSIFICATION FIELD SHEETS

- Trees are planted street trees.

PLANT SPECIES LIST	SITE: HWY 407 TRANSIT WAY WEST
	POLYGON: MANICURED
	DATE: June 27, 2016
	SURVEYOR(S): SLO

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			
THUJOCCL		R											
FRAAX FEUN		R											
QUER MACR		R											
QUER ALBA		R											
PICE PINGEN		R											
ACE PLANT		R											
GLED TRIA		R											
PA PRAT					D								
PHA ARUN					0								
TARA OFFI					0								
CICHINTM					0								
LOTUCORN					A								
DAU CARO					0								
ACHEMILL					R								
PLANMASA					0								
TRIFREPE					0								
TRIFPRAT					0								

STAND CHARACTERISTICS	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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 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			COVER <input type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <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			
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%

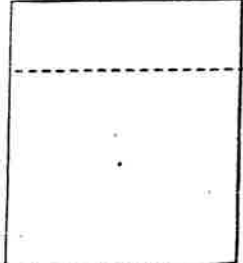
SIZE CLASS ANALYSIS

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50cm
	DECAYED	< 10cm	10-24cm	25-50cm

COMMUNITY MATURITY
 PIONEER YOUNG MID-AGE MATURE OLD-GROWTH

SOIL ASSESSMENT

	1	2	3	4
TEXTURE				
DEPTH TO MOTTLES	g =	g =	g =	g =
DEPTH TO GLEY	G =	G =	G =	G =
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				
MOISTURE REGIME				



SOIL PROFILE



PLANT SPECIES LIST
SITE: 407 TW3
POLYGON: SASI
DATE: Oct 25, 2016
SURVEYOR(S): SLD

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			
CER DENE				OA									

POLYGON
SITE:
SURVEYOR(S):
UTMZ:
POLYGON:
DATE:
UTME:
UTMN:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input checked="" 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"/> 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 checked="" 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			COVER	COMM. TYPE	OTHER
<input checked="" 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			

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	< 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 Transitway West
	POLYGON: MDS2
	DATE: June 27/2016
	SURVEYOR(S): NMF/SLD

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				
PHRAAUST				A										
SAL SP		R												
TYPH SP				A										

STAND CHARACTERISTICS	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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 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		
<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		

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	PHRAAUST > TYPH 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%

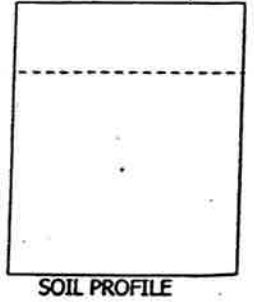
SIZE CLASS ANALYSIS

TREES	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm	10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	< 10cm	10-24cm	25-50cm
	DECAYED	< 10cm	10-24cm	25-50cm

COMMUNITY MATURITY
 PIONEER YOUNG MID-AGE MATURE OLD-GROWTH

SOIL ASSESSMENT

	1	2	3	4
TEXTURE				
DEPTH TO MOTTLES	g =	g =	g =	g =
DEPTH TO GLEY	G =	G =	G =	G =
DEPTH OF ORGANICS				
DEPTH TO BEDROCK				
MOISTURE REGIME				



SOIL PROFILE

- trees are planted (landscaping around hydro road/entrance)



PLANT SPECIES LIST	SITE: HWY 407 TRANSIT LANE WEST
	POLYGON: CUM 1-1a
	DATE: June 27, 2016
	SURVEYOR(S): SLD

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	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

ditch lines

SPECIES CODE	LAYER				COLL.	SPECIES CODE	LAYER				COLL.
	1	2	3	4			1	2	3	4	
PHRA AUST			O			LUL PERE				R	
DAU CARO			O			MEL OFFI				O	
LOT CORNI			O			ASC SYRI				O	
PIC INTY			O			QUER MACRO					
TRI PRAT			O			PICCA PUNG R					
CIR VIUG			O+A			PIC ABIES R					
RUM CRIS			O			LYTH SALI				O	
TRI REPE			O			VIC CRAC				O+A	
TAR OFFI			O			SIM LATI				R	
SOL CANA			O+A			LON TATA				R	
ARC LAPP			O								
PLE PRAT			A			DIB FILL				O+A	
WIN VIRG			O								
CORON VARIA			O			CIRS ARVE				O+A	
POA PRAT			A			RHU TVPH				O	
PICCA GLAU	O					BRO INER				O	
ERIG PHIL			O	O		HYPE PERE				O	
MELI ALBA			O	R		HESP MATR				O	
TRI ARVE			O								
DIG SANG			O								
GINGBILO	O										
ERIG ANNU				R							
ARC MINU				R							
SALIX ALBA	O										
SIMAI NOAN				R							
ACE SACC	O	R									
PRUN VIRG			O								

occurs mostly along road slopes

freedom in ditches

along hydro road

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"/> 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 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 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 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			
2 CANOPY	3	1	QUER MACRO > PIC PUNG
3 SUB-CANOPY	3	1	SAL ALBA = ACE SACC
4 UNDERSTORY	4	1	PRUN VIRG
5 GROUND LAYER	5	5	SOL CANA 5 POA PRAT

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	Diameter			
		< 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:

<input checked="" type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
---	--------------------------------	----------------------------------	---------------------------------	-------------------------------------



PLANT SPECIES LIST	SITE: 407 TW 3
	POLYGON: MAM2/MAS2a
	DATE: OCT 24, 2016
	SURVEYOR(S): SJD

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		
TYPHLATE					D							
SALISP					O							
RUMEGRIS					O							
ARCTLAPP					O							
SOLICANA					O							
PHALARUN					O							
SOLADULC					R							
TYPHANGU					O							
BIDEFRON					R							

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"/> 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 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"/> 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	4/5	1	SALISP
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	TYPHLATE >> TYPHANGU

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	< 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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
----------------------------------	--------------------------------	----------------------------------	---------------------------------	-------------------------------------

- open water present
 - dense typha north & south of open water



PLANT SPECIES LIST

SITE: 407 TW3
 POLYGON: C111a
 DATE: OCT 25, 2016
 SURVEYOR(S): S.D.

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		
ALUPEET				O								
RHAMCATH	D		A	O								
SOLICANA				D								
CIRS ABE				O-A								
POA PRAT				O								
EUBUCCI				O-A								
ERIGANNUM				O								
HYPEPERF				O								
CIRSULG				R								
DAUCACED				SA								
PHLEPRAT				O								
ARCTIAPP				O								
RUMCRIS				R								
DIPS FULL				R								
ACHIMILLE				O								
LOTUCORN				O								
TRIF PRAT				O								
VICICRAC				O								
PLANMAYO				O								
AMBRARTE				O								
TARROFFI				O								
BROMINER				O-A								
FRAG SP.				R								
MENTARVS				R								
LINAVULG				R								

POLYGON

SITE: _____ POLYGON: _____
 SURVEYOR(S): _____ DATE: _____
 UTMZ: _____ UTME: _____ 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"/> 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"/> 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
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 type="checkbox"/> OPEN <input checked="" type="checkbox"/> SHRUB <input type="checkbox"/> TREE	<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	4	RHA CATH
3 SUB-CANOPY			
4 UNDERSTORY	3	4	RHA CATH
5 GROUND LAYER	6	2	SOLICANA >> BROMINER > RUB OCC

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		
DEADFALL/LOGS	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: 407TW3
	POLYGON: CUT16
	DATE: JUNE 27, 2016
	SURVEYOR(S): SLD

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		
ULMUAMER	R											
TILIAMER			R									
CRATMONO		R	O									
CRATPUNC		R										
MALUPUM		R										
ROSDMLET			R									
LOTUCORN				O								
RHAMCATH			O									
VITIRIPA				R								
ACERNEGU		R	R									
ASCLMRI			R									
CYNAROSS				O								
LONITOTA			O									
SOLICANA				O								
POAPRAT				O								

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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"/> 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 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 checked="" 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"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUGH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	ULMUAMER
2 CANOPY			
3 SUB-CANOPY			CRATSP = ACERNEGU
4 UNDERSTORY			RHAMCATH
5 GROUND LAYER			CYNAROSS & SOLICANA = POAPRAT

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	SIZE CLASS			
		< 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:

<input checked="" type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST

SITE: 407 TW3

POLYGON: CUT1/CW1

DATE: JULY 20, 2016

SURVEYOR(S): SLO/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	
LONITATA			A			PHRAPIST				R	
ACENEGU	O	O	O			LYTHSALIC				O	
SALIX SP.	A					CRAT SP.			R		Pic
CRAT MONO		O-A				ROBI PSEUD			R		
DIPS FULL				O		TYPH ANGU			R		
SOLICANA				O							
VICICRAC				O							
LONIMACK			R								
GLECHHEDE				R							
DAUCCARU				O							
RHAMNATH		O	O								
VITRIPA			O	O							
RHUSTYPH			D								
POA PRAT				A							
TARA OFF				O							
ULMUMAGR	R	O	O								
RIBESAMGR				O							
EUPH COROL				R							
MELIALUSA				O							
CLEVRIG				R							
DACT GLOM				O							
MELIOFFI				R							
PHAL ABUN				O							
CIRS ARVE				O							
LINAVULG				R							
SALIXIG				O							
CICHNTY				R							

POLYGON

SITE:

POLYGON:

SURVEYOR(S):

DATE:

UTMZ:

UTME:

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"/> 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"/> 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 checked="" 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 checked="" type="checkbox"/> SHRUB <input checked="" 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	ULMUMAGR
2 CANOPY	3	3	SALIX SP.
3 SUB-CANOPY	3	4	CRAT MONO > ACE NEGU
4 UNDERSTORY	4	3	RHUSTYPH > LONITATA
5 GROUND LAYER	5	5	POA PRAT

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	A	< 10cm	O	10-24cm	R	25-50cm	-	> 50cm
	STANDING SNAGS	R	< 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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST

SITE: 407 TIBZ

POLYGON: MAM2-2a

DATE: JULY 26, 2016

SURVEYOR(S): S.O./KMF

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			
JUNCUDUL					R								
SALIX SP.	O												
VERBAST					O								
PHARUN					A								
PHRAUST					A								
LYTH.SAL					O								
SYMNO-AN					O								
SALICULC					R								
POLY SP.					R								
CONV ARVE					R								
PLANMAJO					O								
CHEN ALBU					R								

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"/> 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 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 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 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	3	1	SALIX SP.
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4	5	TYPH ANGU > PHARUN = 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:

TREES	R	< 10cm	R	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 TW3

POLYGON: CUMI-1/CUTI ✓

DATE: JUL 26, 2016

SURVEYOR(S): SLO/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	
DAUCARO				O		LACBIEN				R	
LOTUCORIN				O		SMINO-AN				O	
MELIALBA				R		ROSIMULTI				O	
PHALARIN				O		TRIFRAT				O	
POPITREM	O					SIMILIATE				R	
ELYM RGP				O		PHIE PRAT				R	
DIPS FULL				O-A		VIBU OPUL				D	
REOMINER				O		ACERSACC	R	O			
SOUCANA				O-A		LONITATA				R	
VICICRAC				O-A		ULMAMGR				R	
LYTHR SAUCA				R		PHYSOPUL				R	
CIRS ARVE				O		SCIMICRO				R	
SAPU OFA				R							
ULMURUMI				R							
ACERNEGU				O O							
SALI ERIO				O							
SALIX SP				O							
POPALBA				O O	Samp						
PIRUGRAND	O	O	O								
TANA VILG				R							
MEDILUPULI				R							
RUBIOCCI				R							
ARCTLAPP				O							
RHANCATH				A							
PLAMAJOR				O							
ASCSVRI				R							
RUMECRIS				R							

emergent

POLYGON

SITE:

POLYGON:

SURVEYOR(S):

DATE:

UTMZ:

UTME:

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"/> 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 checked="" type="checkbox"/> BRYOPHYTE <input checked="" 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 checked="" 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			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 checked="" 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	POPITREM
2 CANOPY			
3 SUB-CANOPY	3	2	ACERNEGU = POPALBA
4 UNDERSTORY	4	2	RHANCATH > ACERNEGU
5 GROUND LAYER	5	5	DIPS FULL = SOUCANA = VICICRAC

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	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 TW3

POLYGON: MAM2a

DATE: AUG 31, 2010

SURVEYOR(S): SLD/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		
PHRAAUST			D									
SIMPNOAN				O								
DIPS FLU				O								
VEBHAST				R								
TANAVUG				R								
UUMANGER		R										
RUMECRIS				R								
BEHINGER				O								
POAPRAT				O								
GIRSAVE				O								
MELIALSA				R								
VICRAC				R								
TYPH ANGU				O								
SALIX SP.		R		O								
RHYNATH				R								
VIKORU				R								

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 checked="" 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 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 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 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	UUMANGER
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	5	PHRAAUST >> TYPH ANGU
5 GROUND LAYER	5	5	BEHINGER = DIPS FLU

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	R	< 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: HWY407 TW3
	POLYGON: MAM2b
	DATE: JUNE 27, 2016
	SURVEYOR(S): SLD

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		
PHALARUN				A								
PHRAAUST				A								
SALIXRUB			O									
SALXRUB		R										
SCHOTARE				R								
SAUERAG	R											
CROTMONO			R									
CORONARI				A								
VICCRAC				O								
LYTHSALI				R								
DIPSFUSY				R								
CIRARVE				R								
SOLCANA				O								
SCIRMICR				R								
ECHICRUS				R								

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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 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 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	3	1	SALIFRAG
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	PHRAAUST > PHALARUN

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	SIZE CLASS			
		< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	R		R		
DEADFALL/LOGS					
	FIRM				
	DECAYED				

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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small patch of shrubs at north of site.



PLANT SPECIES LIST	SITE: 407 TU3
	POLYGON: G1m1-1b
	DATE: AUG 31, 2016
	SURVEYOR(S): SLO/NMF

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	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		
DAUCARU				O								
MELALBA				O								
EUPA SP.				R								
LOT COEN				O								
PHIARUN				O								
CICINTV				R								
DIPSFULL				O								
CIRARUC				A								
TANAVULG				O								
POA PRAT				OA								
SALALBA		R										
RHUTYAH			O									
JUGMGR			R									
SOLCANA				O								
LITHSALI				R								
VICCRAC				O								
LONTATA			R									
ARENEGU			R									
CORNSTOL				O								
ACERUBR				R								
ULMAMEL				R								
VIGSBHAST				R								

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"/> 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"/> 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 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"/> 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 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	3	1	SALALBA
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5	5	CIRARUC > POA PRAT

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	FIRM	✓	✓	✓
	DECAYED	✓	✓	✓

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input checked="" type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: CUMI-1C
	DATE: JUNE 27, 2016
	SURVEYOR(S): SLD

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	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	
TILAMER			O			MELIALBA				O	
QUERALBA			O			VICICRAC				O	
PLANLANC				O		ELAEANGU			O		
LOLIPERE				O							
MELIOFFI				O							
ASCLSYRI				R							
PHRAUST				A							
DUCCARO				R							
LOTUCORN				O							
CICHINTY				R							
CIRSVULG				R							
RUMECRIS				O							
TARAOFFI				O							
SOLICANA				A							
ARCTLAPP				O							
PHLEPRAT				O							
JUNIVIRG			R	R							
CORONARI				A							
POAPRAT				O							
PICEABIE			R								
TRIFREPE				O							
DIGISANG				R							
ERIGANNU				R							
ARCTMINU				R							
SOLIALBA				R							
PRUNVIRG				O							
PHALARUN				R							

-small thicket / wooded inclusion
adj. to powerlines

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"/> 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 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 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 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	4	2	TILAMER > SOLIALBA
5 GROUND LAYER	5	5	SOLICANA >> ARCTLAPP

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	SIZE CLASS				
		< 10cm	10-24cm	25-50cm	> 50cm	
	R					
	STANDING SNAGS					
	DEADFALL/LOGS					
	FIRM					
	DECAYED					

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input checked="" type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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* old wet area w stunted growth, gravelly

* included hedgerow of nine bark / grey dogwood
w several bur oak established

* trees have been planted

* around pond. -> PHAAUEN dominant edge of

* small inclusions of MAM just west of watercourse (patches of TVPHSP, or PHAAUST)



PLANT SPECIES LIST	SITE: 407 TLV3
	POLYGON: Cum 1-d
	DATE: AUG 31, 2016
	SURVEYOR(S): SLO/MMF

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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	
CHEALBU				O		VICICRAC				R	
AMB ARTE				O		ASC SIRI				R	
BIDEFRON				A		VGBB HAST				R	
TVPH SP.				R		TVPH ANGL				O-A	
PHIALARUN				A		PHAAUST				R	
ECHICRUS				R		RHAKATH			R-O		
LYTH SALI				R		MELALBA				O	
PANICAP1				O		RHUSTVAH				R	
SONARVE				R		ACE SACC				R	
POLY SP.				A		VIB ORUL				R-O	
ARTE BIEN				O		PREL VIRG				R	
PLANMAIO				O		COR STOL				R-O	
SIMPLATE				R		POA PRAT				O	
POPULDT			R			AGR STOL				O	
SALIDASC			R			LOMITATA				R	
GUSRMACK			R			LINAVULG				R	
BIRONINGE				D		LUMMANSK				R	
SOLICANA				O-A		DAUCCARU				R	
PHYSORUL				O		SIMALBAN				R	
CIRSAVE				O		LOTUCORN				O	
CORSTOL				O		HUPEPGRE				R	
AGROGIGA				R		HEL ALTU				O	
DIBFULL				O-A		ARTILAPP				O	
AGE RUBR				R		RUMFORIS				O	
CORO VARI				R		SAMBANA				R	
CORN RACE				R		ASC SIRI				R	
SPIR ALBA				R		ROSA SP.				R	

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"/> 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 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 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 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			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	2	CORN STOL = PHV ORUL
5 GROUND LAYER	5	5	BRO INER > SOL CANA

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					
	O	< 10cm	R	10-24cm	25-50cm	> 50cm
		< 10cm		10-24cm	25-50cm	> 50cm
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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407TW3
	POLYGON: MAM2/MAS2b
	DATE: AUG 31/2016
	SURVEYOR(S): SLD/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		
TYPHANGU				D								
PHARAU				O								
LYTH SALI				O								
SOLALTI				O								
VITRIPA				R								
CIRS ARVE				R								
SOL DULC				R								
SHYNOAN				O								
PHALARUN				A								
CEAT NYND		O	O									
PAINVIRG		O										
LONI TATA			O									
VIBUOPUL			R									
ULNAMER	R											
IMPACAP				R								
EUTHGRAM				R								
SCHOTABE				R								
Shm Pond → PHARAU along margin of water												

- disturbance caused by ATV use and def-reading

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"/> 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 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 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 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"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	ULNAMER
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	3	2	CEAT NYND = LONI TATA
5 GROUND LAYER	4	5	TYPHANGU > PHARAU

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	0 < 10cm	R 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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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- culturally influenced.
- a lot of invasive species.
- camping, barbecues, coolers, tents
- dumped general waste, etc.



PLANT SPECIES LIST	SITE: 407 TN3
	POLYGON: CUW1a
	DATE: AUG 31, 2016
	SURVEYOR(S): SLD/NMF

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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	
CRAT PUNC			O	R		DAUCCARU				O	
RHAMNATH			O	O		OXALSTRI				R	
ROBIPSEU		O	O	O		ACERRUBR	O			O	
CRAT MAND			O	R		TILLAMGE			R		
AMELLAEV	R					ACER SARA	R				
ULMUMER	O	R	R			BIDEFRON				R	
LONI TATTA			R	R		GLECHEDE				A	
PRUNMIRG			R			CYNAROSS				O	
VIBU OAIL			O	R		*TYPALATE				R to O	
FRAX AMER	R	O	O	O		RIBES SP.			R		
GEUM GAMA				R		SOLICANA				O	
RATUPAPA	R					URT DIO				R	
ARCTMINU				O		CIRCLITE				O	
HESPIATR				O		ANUSTROB	R				
ROSA MILIT			R			CRESVILLG				R	
ACERNEGU	O	O	R	O		FRAXPELN	O				
PYRUS SP.			R			*CORNSTOL				O	
PARTUSSE				O		*MSS2 includes intermittent areas along watercourse includes TYPALATE, CORNSTOL, PHALARUN					
FRIG ANNLI				R							
SOLI FLEX				R							
SOLADILC				O							
GEUM ALLE				O							
ACEGLIAU	O	R									
SOLI CAES				O							
RUBUSIDA				O	O						
VITIRIPA	R	O	O	O							
ALLPETI				A							

* PHALARUN

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"/> 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 checked="" 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 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	2	3	ACERRUBR > PICEA GLAU
3 SUB-CANOPY	3	3	ACERNEGU = ROBIPSEU
4 UNDERSTORY	4	3	ROBIPSEU > RHAMCATH
5 GROUND LAYER	6	5	ALLPETI = GLECHEDE

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:

DEADFALL/LOGS	TREES	A	< 10cm	A	10-24cm	R	25-50cm	-	> 50cm
		STANDING SNAGS	O	< 10cm	R	10-24cm	-	25-50cm	-
	FIRM	A	< 10cm	O	10-24cm	-	25-50cm	-	> 50cm
	DECAYED	-	< 10cm	-	10-24cm	-	25-50cm	-	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input checked="" type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: Cum-1-le
	DATE: 11th 27/2016
	SURVEYOR(S): SLD

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	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	
WTNSALI				O		PLA MAW				O	
AMBRARTE				A		HYP PSE				R-O	
AMBRTRIF				R		RHU TYPH			O		
DALICARO				O		PHRAUST				O	
DHAARUN				O							
VICCRAC				O							
VITRIPA			R	R							
CIRARVE				A							
SOLCANA				A							
PLA MAW				O							
CRAT MOND				O							
LOTUCORU				O							
DIPSFULL				A							
TRIFPRAT				R							
VERBURTI				O							
HESP MATR				R-O							
RANACRI				R							
TRIRGRE				R							
ASC SVRI				O							
PARINSER				R							
ACE NEGU				R							
CICINTV				O							
PIRC LAPP				O							
TARA OFF				O							
ACH MILL				R							

cliffes along road

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"/> 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 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 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 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			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	2	CRAT MOND = RHY TYPH
5 GROUND LAYER	5	5	SOLCANA ZAMBARTIE

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
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm	

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407TW3
	POLYGON: BBS1
	DATE: JUNE 27 2016
	SURVEYOR(S): SLO/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		
SALIERIO			O									
SALIXIG			O									
SALISP			R									

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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 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 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	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 checked="" 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	4.5	3	SALIERIO = SALIXIG
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	< 10cm	10-24cm	> 50cm
	DECAYED	< 10cm	10-24cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input checked="" type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST

SITE: 407TUB

POLYGON: Cum14

DATE: JUNE 27, 2016

SURVEYOR(S): SD

POLYGON

SITE:

POLYGON:

SURVEYOR(S):

DATE:

UTMZ:

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		
TARASFI				O								
SOLICANA				A								
INTASALI				O								
AMERARTE				O								
ACHIMILL				R								
POA PRAT				A								
BEOMINGE				A								
LINAVILUG				A								
SIMPNOAN				O								
ERIG ANNU				R								
INVE PERP				R								
CICINTY				O								
ASCLSVRI				O								
SIMP LATT				O								
CIRS ARVE				A								
CIRS VULG				R								
ARCTIAPP.				R								
VICICRAC				A								
MEI ALUSA				O								
HCS MATR				R								
VEGETHIAP				R								
GENTBIEN				R								
RUMECRIS				O								
PRINVIKG				R								
SAL ALUSA				O								

Small clumps of shrubs scattered throughout

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"/> 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"/> 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 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 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 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		
2	CANOPY		
3	SUB-CANOPY		
4	UNDERSTORY	4	1 SAL ALBA = PRU VIRG
5	GROUND LAYER	5	5 SOL CANA > POA PRAT = CIRS ARVE

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	SIZE CLASS			
		< 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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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- Lots of garbage.
 - well defined walking/driving paths throughout
 - tents in several areas → looks recently inhabited.



PLANT SPECIES LIST

SITE: 407 TW3

POLYGON: CUT1/auw1b

DATE: AUG 31, 2016

SURVEYOR(S): SLO/NMF

POLYGON

SITE:

SURVEYOR(S):

UTMZ:

POLYGON:

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			
RHAMNATH			A										
CRAT RINC				R									
CRAT MONO			A										
LOMI TATA			R										
LUMWAMER	R												
SOLICANA				O									
POA PRAT				OP									
VITIRIPA			OP	R-O									
MALUPIMI			R										
ACERNEGLI	R												
CYAROSS.				R									
TILIAMER.	R	R											
LOTUCORN				O									
ROSA MULT			R										
ASCISYRI				R									

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"/> 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"/> 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 checked="" 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 checked="" type="checkbox"/> BEDROCK			<input type="checkbox"/> OPEN <input checked="" 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	3	1	LUMWAMER
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	5	RHAMNATH >> CRATMONO
5 GROUND LAYER	5	4	POA PRAT >> SOLICANA

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	A	< 10cm	O	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: 409 TW3
	POLYGON: CUW1b
	DATE: AUG 31 / 2016
	SURVEYOR(S): S.D./MMF

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		
ULMAMER	O	A	R									
FESTRUBR				O								
LONITATA			O									
PICEPUNG	R											
HAKINSEER				O								
VIOLA CONS				R								
LYSINIUMM				R								
RHAMCATH			A	A								
VIBUORIL			R	R								
RIBUIDEA			O									
ROSA MULT			O									
TILAMER	R	O	R									
ACERNEGU			R	R								
FRAX PENN				O								
ACESASA	O	R										
HACKVIRG				R								
RIBEMER			O									
BROMINER				O								
AGROGIGA				R								
VITRIPA		O	A	O								
PHARUN				R ₆								
PINSTRO	R	R										

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:
		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"/> 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 type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input checked="" 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 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	1	ULM AMER
2 CANOPY	3	2	ULM AMER > ACESASA
3 SUB-CANOPY	3	4	ULM AMER = TIL AMER
4 UNDERSTORY	2	4	RHA CATH = VIT RIPA
5 GROUND LAYER	5	2	RHA CATH

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	
	FIRM	DECAYED	FIRM	DECAYED	FIRM	DECAYED
	< 10cm	< 10cm	10-24cm	10-24cm	25-50cm	> 50cm
	< 10cm	< 10cm	10-24cm	10-24cm	25-50cm	> 50cm
	< 10cm	< 10cm	10-24cm	10-24cm	25-50cm	> 50cm
	< 10cm	< 10cm	10-24cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST

SITE: 407 TW3
 POLYGON: MAM2-2b
 DATE: JUNE 27, 2016
 SURVEYOR(S): SLO

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				
PHA ARUN				D										
DIPSALLI				R										
SALIDISC			R											
SOLICANA				R										
LYTH SALI				R										
CIP SARVE				O										
CRAT. MONO			R											
ECHI CRUSG				R										
VICICRAC				G										

POLYGON

SITE:
 SURVEYOR(S):
 UTMZ:
 POLYGON:
 DATE:
 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"/> 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 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 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 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	4	1	CRAT MONO = SAL DISC
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	4/5	5	PHA ARUN

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
	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: 407TW3
	POLYGON: cum1-g
	DATE: JUNE 17, 2016
	SURVEYOR(S): SLD

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				A		LONITATA			O		
SOLICANA				A							
TRIFREPT				O							
POA PRAT				A							
DAUCARO				O							
ACHIMILL				R							
VICICRAE				A							
PHRAAUST				O							
RHUSTVPH				O							
PHALARIN				R							
PRUNING				R							
BROMINER				O							
LOTUCORN				O							
MELIALUBA				R							
TRIFREPT				O							
TRIFZEPE				O							
ARCTLAPP				O							
CIRS VILG				R							
HYPERF				R							
BANUACRIS				R							
ERIG ANNUL				O							
PLANIMASO				O							
DACTGLM				O							
ACERNEGU				R							
PARTINSE				O							
RHAMNATH				O							
ACERBAN				O							

dam in ditches.
roadslopes

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:
		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"/> 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"/> 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 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	3	1	ACERBAN > ACERNEGU
4 UNDERSTORY			
5 GROUND LAYER	5	5	SOLICANA > CIRARVE = POA PRAT

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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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#5

PLANT SPECIES LIST	SITE: 407TW3
	POLYGON: MAM2C
	DATE: JUNE 17, 2016
	SURVEYOR(S): SLO

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		
PHALARUN				O								
SALICAMA				O								
SALIFRAG	R		R									
SALIALISA			O									
CORN STOL				R								
VICTRAC				R								
LYTH SALI				O								
DIUSFULL				O								
CIRS ARVE				NA								
CIRS VILIG				R								
POA PRAT				O								
BROMINGR				NA								
DACT GLOM				R								
PHRAAUST				A								
ELEANGU			R									
EQUIAKVE				O								
IMPACAPE				O								
RHAMCATH			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 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 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 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 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	4	1	SALIFRAG
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	2	SALIX > RHAMCATH
5 GROUND LAYER	4/5	5	PHRAAUST > PHALARUN

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	R	< 10cm	R	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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST

SITE: 407 TW3

POLYGON: CUTIC

DATE: JUNE 17, 2016

SURVEYOR(S): SLO

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		
RHAPCATH			DA									
LOW DATA			OO									
MYNAROSS				O								
ACERNEGU			DAO									
GRAT PUNC			DA									
VITIRIPA			OR									
PATETINSGR			R									
POA PRAT				O								
SOUICANA				O								
BROMINKE				R								

POLYGON

SITE:

SURVEYOR(S):

UTMZ:

POLYGON:

DATE:

UTME:

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"/> 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"/> 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 <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 checked="" 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	3	1	ACERNEGU
4 UNDERSTORY	4	3	RHAPCATH > GRAT PUNC = ACERNEGU
5 GROUND LAYER	5	4	RHAPCATH >> SOUICANA

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	K	10-24cm	25-50cm	> 50cm
STANDING SNAGS	0		10-24cm	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	0	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 TWS
	POLYGON: CUTID
	DATE: JULY 25, 2016
	SURVEYOR(S): SID

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		
CYNAROSS			D	A								
RHAMNATH		D										
PARTINSE		A	O									
VITIRIPA		A	O	O								
SOLICANA				O								
TARA OFFI				O								
VICICRAC				O								
ARCTIAPP				O								
ALLI PETI				A								
PHALARUN				R								
RIBES AMER				R								
CIRC ARVE				O								
IGNI TATA		O	A									
SALIX SP			O									
THE ARVE				O								
JUGLOR	R											
DAUCCARU				O								
ACER NEGU		R										
CRATPUNC		O										
ERIGANNU				R								
ULMARIER	O											
CRATPUNC				O								

CHECKING EVERYTHING

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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 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
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 checked="" 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	1	JUG NIGR >> ULMARIER
2 CANOPY			
3 SUB-CANOPY	3	3	RHAMNATH > VITIRIPA = PARTINSE
4 UNDERSTORY	5	3	CYN ROSS
5 GROUND LAYER	6	1	CYN ROSS = ALLI PETI

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	
	FIRM	DECAYED	FIRM	DECAYED
< 10cm	O	R	R	R
10-24cm				
25-50cm				
> 50cm				

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: CUT1e
	DATE: OCT 25, 2016
	SURVEYOR(S): SW

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		
ACERNEG1	O	O		O								
RHAMCATH		D	A	O								
LOMITATA			O									
SOLICANA				D								
ARCTLAPP				O								
CIRCARVE				O	A							
PARTINER				O	A							
ALUIGST				O								
DALICARCO				O								
ACHIMILLE				O								
LOTUCORN				O								
SALIX SP?	O		O									
DIPS FULL				O	A							
TRIFPEAT				O								
BUGZ MACE		R										
TRAEOFF1				O								
VITIRIPA		R	O	O								
FRAX PENN		R										

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:
		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"/> 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"/> 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
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 type="checkbox"/> OPEN <input checked="" 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	1	SALIX SP = ACERNEG1
3 SUB-CANOPY	3	4	RHAMCATH
4 UNDERSTORY	4	3	RHAMCATH > LOMITATA
5 GROUND LAYER	5	4	SOLICANA > CIRCARVE

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	R	10-24cm	25-50cm	> 50cm
STANDING SNAGS	< 10cm		10-24cm	25-50cm	> 50cm
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:

<input checked="" type="checkbox"/> PIONEER	<input checked="" type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407TW3
	POLYGON: CUS12
	DATE: JUNE 27, 2016
	SURVEYOR(S): SLD

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	
SOLICANA				A		TAROFFE				O	
ACERSASA		R				POPULRAN	R	R			
CIRSARVE				O							
PHALARIN				O							
PHARAST				O							
POAPRAT				D							
PICEGALL	O	O									
PICEPING	O	O									
DINISTROS	R										
FRAXAMBR	R										
ULMUMAR		R									
JUGNAGR	R	R									
LONI TATA				O							
CYNAROSS				O							
ROSMILT				O							
CENTBIEN				O							
DAUCARO				O							
LOTKORN				O							
VEGETHAP				R							
LINAVING				R							
VITRIPA		R	R	O							
PARTINSE		R	O	O							
RHACATH											
PINUSLV		R									
THUCCI		R	R								
BETUPAPI	O	O									
POPULRAN	O	O									

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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"/> 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 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 checked="" 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"/> PRATIE <input type="checkbox"/> THICKET <input checked="" 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"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	POPULRAN
2 CANOPY	3	2	PICEGALL > PICEPING = BETUPAPI
3 SUB-CANOPY			
4 UNDERSTORY	4	2	LONI TATA > RHACATH
5 GROUND LAYER	5	5	POAPRAT > SOLICANA

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		
		O	R	N	O	R	N	O	R	N	O	R	N
STANDING SNAGS	FIRM	< 10cm			10-24cm			25-50cm			> 50cm		
		< 10cm			10-24cm			25-50cm			> 50cm		
DEADFALL/LOGS	DECAYED	< 10cm			10-24cm			25-50cm			> 50cm		
		< 10cm			10-24cm			25-50cm			> 50cm		

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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Notes of plants mostly in ditches



PLANT SPECIES LIST	SITE: TW3
	POLYGON: CUTIF
	DATE: OCT 25, 2016
	SURVEYOR(S): SLD

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		
RHANCATH		D	A	O	A							
CRAT SP.		A		O								
MALUPUM		O										
FRAX RSWR					R							
PRYUS SP.		O										
PICEGLAU		R										
ACERSASA		R										
SOLICANA				D								
CIRC ARVE				O								
DIPS FULL				A								
LOTUCORN				O								
LINAULUG				R								
RIMECKIS				R								
FRAX SP.				O								
PLANMIA LO				O								
DAUCCARD				O								
BROMINGR				O-A								
DOA PRAT				O								

Emergent

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:
		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"/> 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"/> 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			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 type="checkbox"/> OPEN <input checked="" 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	PICEGLAU = ACERSASA
2 CANOPY			
3 SUB-CANOPY	3	4	RHANCATH > CRAT SP.
4 UNDERSTORY	4	4	RHANCATH
5 GROUND LAYER	5	3	SOLICANA > DIPS FULL

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	R	< 10cm	R	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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407TW3
	POLYGON: CUP 3
	DATE: JUNE 27, 2016
	SURVEYOR(S): SLD

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		
THUOCCI		R	R									
PINISTRO	O	O	R									
PICEGLAU	A	A	O									
SOLICANA				O								
CYNAROSS				R								
POA PRAT				O								
POPIGRAND	R											
LONITATA			O									
RHAMCATH			O	O								
ACERNEGU	R	R										
PICEPING	O	O	R									
BRUMINER				O								
QUEBR MACK				O								
VICICRAC				O								
PINISILV	R	R										

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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 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 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 checked="" 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 checked="" 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	2	5	PICEGLAU >> PINISTROIS
3 SUB-CANOPY	3	3	PICEGLAU
4 UNDERSTORY	4	2	QUEBR MACK = PICEPING
5 GROUND LAYER	6	2	SOLICANA = RHAMCATH

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		
		A	O	R	A	O	R	A	O	R	A	O	R
STANDING SNAGS	FIRM	O			O								
	DECAYED												
DEADFALL/LOGS	FIRM	A			R			R					
	DECAYED												

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input checked="" type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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+90% bare ground under canopy



PLANT SPECIES LIST	SITE: 007TW3
	POLYGON: Cumi-1b
	DATE: July 25, 2016
	SURVEYOR(S): 20

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	
SOLICANA				A		UNAVULG				O	
PHALARIN				O							
PLANMANO				O							
TARSA OFFI				O							
SALIALBA				O							
ACERNEGUL			R								
POA PRAT				DA							
BROMUS				O							
CIRSARVE				DA							
CIRSULG				R							
LOTURON				O							
MELIALBA				O							
VICICRAC				O							
CORO VARI				R							
ACER SASA			R								
CRANTM				O							
THL ARVE				O							
HYR PEGF				R							
PHRAALST				O							
ARCTIAPP.				R							
SYMP NOAU				O							
HESPMATR				R							
AMBRAETE				O							
DAUCIARO				O							
LOMI TATA				O							
RHAPICATH				O R							
RHUSTNPH				O							

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:
		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"/> 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"/> 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 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	ACER SASA = ACER NEGUL
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY			
5 GROUND LAYER	5	5	SOLICANA > POA PRAT > CIRSARVE

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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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= VIC CRAC



PLANT SPECIES LIST

SITE: TIW3 407

POLYGON: Cumy-19

DATE: July 25, 2010

SURVEYOR(S): SLO

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		
SOLICANA				D								
POA PRAT				A								
PHALARIS				O								
LINUM LG				O								
SYMPLOCA				O								
ACER NEG		R	O									
ACHIL MIL				R								
PLANTAGO				O								
HYPERIC				R								
SALIC ALBA			O									
ERIG ANN				R								
LOTUS CORN				O								
ELAEANG			A									
FLAELIMBE			O									
RHAMNATH			R	R								
POPULTR		R										
VICICRAC				A								
RUMEX CRIS				O								
URSARVE				A								
DAUCCARO				O								
OSYRIBIEN				R								
AMBROSIA				R								
CIRSULG				R								

POLYGON

SITE:

POLYGON:

SURVEYOR(S):

DATE:

UTMZ:

UTME:

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"/> 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"/> 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 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	3	1	ACE NEGU = POPTRAM
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	1	ELAEANG > ACE NEGU
5 GROUND LAYER	5	5	SOLICANA > URSARVE = POA PRAT

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		
DEADFALL/LOGS	FIRM	DECAYED		

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER
 YOUNG
 MID-AGE
 MATURE
 OLD-GROWTH

Drainage # 9
From an east side
of lumber river.

PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: FOM7
	DATE: MAY 18, 2016
	SURVEYOR(S): SLD/MMF

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		
ACE SASA	D	O										
RHA CATH		A	D	O								
SOL FLEX				R								
THU OCC1	O	A	O									
PHA ARUN				R								
THA OFF				O								
CIR VULG				O								
ALL PETI				O								
PRU VIRG			R									
CAR PENS				R								
PIN STROB	R											
VIT RIPA		O	R									
FAG GRAN	R											
PRU SERO	R											
OST VIRG		R										
SOL GIGAN				R								
QUE MACR	R											
unknam tree	O				PC							
POP BALS	R											
ARC LAPP				R								
ALL TRIG				R								
VIB OPIL			R									
EUONOBOV				R								



POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:
		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"/> 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"/> 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 <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 checked="" 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	1	5	ACE SASA > THU OCC1
3 SUB-CANOPY	2	4	THU OCC1 > RHA CATH
4 UNDERSTORY	4	2	RHA CATH
5 GROUND LAYER	7	1	RHA CATH

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	A	< 10cm	O	10-24cm	R	25-50cm	> 50cm
STANDING SNAGS	O	< 10cm	O	10-24cm	/	25-50cm	> 50cm
DEADFALL/LOGS	FIRM	O	< 10cm	O	10-24cm	/	25-50cm
	DECAYED	/	< 10cm	/	10-24cm	/	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input checked="" type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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90% bare ground.

#9

LOTS OF DISTURBANCE

West of wetland complex



PLANT SPECIES LIST

SITE: 407TW3

POLYGON: FOM3-2

DATE: AUG 15/2016

SURVEYOR(S): NMF/SLD

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		D	O									
RHACATH			O									
TSUCAWA	O											
OSTVIRG		O										
PRUVIRG				R								
FRAAMER	R											
TILAMER			O	R								
VIT RIPA				R								
ALL PETI				R								
PAET INSEK				R								
CARY OVATA	R											
CYN ROSS				R								

POLYGON

SITE:

POLYGON:

SURVEYOR(S):

DATE:

UTMZ:

UTME:

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"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input checked="" 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"/> 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 checked="" 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 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	2	4	TSUCAWA >> FRAAMER
3 SUB-CANOPY	3	5	ACESASA >> OSTVIRG
4 UNDERSTORY	3	4	ACESASA > TILAMER
5 GROUND LAYER	6	3	ACESASA >> OSTVIRG

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	A	10-24cm	A	25-50cm	R	> 50cm		
STANDING SNAGS	R	< 10cm	R	10-24cm	<	25-50cm	<	> 50cm	
DEADFALL/LOGS	FIRM	O	< 10cm	R	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

19

PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: Fom6-1
	DATE: AUG 15, 2016
	SURVEYOR(S): SLD/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		
ACE SASA	D		O	D								
TSU CANA	O											
OBT VIRG		O		O								
CAREX COCO	R			O								
RHM CATH			O	O								
CAREX PENN				O								
CAREX SP.				R								
FRAG VIRG				R								
GELM CANA				R								
FRAX PENN			O	O								
ROSA MULT			R									
CIR ARVEN				R								
CAREX ROSE				R								
SYLL PUNI				O								
SUL FLEX				O								
PRU VIRG			R									
CIR LUTE				O								
SILG NIGR				R								
ELON ABOV				R								



POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input checked="" 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 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 checked="" 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 checked="" 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	2	5	ACE SASA >> TSU CANA
3 SUB-CANOPY	3	4	OBT VIRG
4 UNDERSTORY	3	4	ACE SASA >> RHM CATH
5 GROUND LAYER	5	4	ACE SASA

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	A	10-24cm	A	25-50cm	R	> 50cm
STANDING SNAGS	O	< 10cm	R	10-24cm	\	25-50cm	\	> 50cm
DEADFALL/LOGS	FIRM	O	< 10cm	O	10-24cm	R	25-50cm	\
	DECAYED	\	< 10cm	\	10-24cm	\	25-50cm	\

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input checked="" type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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Forest south of Lake



PLANT SPECIES LIST	SITE: 407 JWB
	POLYGON: F0D 4
	DATE: AUG 24 2016
	SURVEYOR(S): SLO/NINE

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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	
ROB PSEU	A		O			ACE SA-NIGR				R	
ACE NEGU		O	B	O		PHRY LEPTO				R	
RHA CATH				OR		IRIS SP.				R	
SOL CANA				O		ELE PEPE				R	
VIOLA SP.				R		RHI BAD.				R	
POA PRAT				A							
SOL CAES				O							
ALL PETI				O							
HESP MATR				O							
GEUM LAGI				R							
EUPA RUGG				O							
GER ROSE				O							
SOL GIGA				R							
VEAS URTI				O							
LONI TATA				O							
VIT RIPA		R	O	O							
PAR INSR				O							
LYN ROSS.				R							
GAL MOLL				R							
CIES VULG				R							
AMP BRAC				O							
LOL PERE				R							
PHA HELI				O							
BRO INER				O							
ROSA MULT				R							

Very large tree > 100cm dbh

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"/> 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	COMM. TYPE	OTHER
<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 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	1	1	ACE SA-NIGR
2 CANOPY	3	4	ROB PSEU
3 SUB-CANOPY	3	4	ACE NEGU >> VIT RIPA
4 UNDERSTORY	3	2	ROB PSEU
5 GROUND LAYER	5	4	ROB GEE > POA PRAT

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	FIRM	DECAYED	< 10cm	10-24cm	25-50cm	> 50cm
	A	A	R	R	R						
	R	R									
	R										

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input checked="" type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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North side of highway



PLANT SPECIES LIST	SITE: 407 TU3
	POLYGON: F006-5a
	DATE: AUG 15, 2016
	SURVEYOR(S): SLO, NMF

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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		
ACE SASA	D	A	O									
ROB PSEU	O		O									
PRU VIRG			A									
CIRC LUTE				O								
ACE NEGU	R		R									
CORN ALT			O									
FRAX AMER	R											
GEUM CANA				O								
THILL OCC 1		O										
LONI TATA			R									
ROS MULT			R									
VIT RIPA				R								
POP BALS	R											

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"/> 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
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 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	3	5	ACE SASA >> ROB PSEU
3 SUB-CANOPY	3	4	ACE SASA
4 UNDERSTORY	4	3	PRU VIRG
5 GROUND LAYER	5	4	GEUM CANA = CIRC LUTE

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	A	< 10cm	A	10-24cm	R	25-50cm	-	> 50cm
STANDING SNAGS	FIRM	R	< 10cm	R	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 TW3
	POLYGON: F0D6-5b
	DATE: July 26/16
	SURVEYOR(S): SLO/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	
AXA STRIC				R		RUBIOCC1			R		
BIDFRON				O		POD PELT				R	
SOLICANA				R		IMPACAPEN				R	
FRAX PENN	R			R		GGM CANA				O	
VITIRIPA		R		O		POB PSEU				R	
RUBUIDEA				O		CRATMOL			R		
ACERNEGU				RR		MAL RUMI			R		
RHAM CATH				OO		CRATMONO			R		
ACERSASA	D	R	O	D	pic & end	LONI TATA				O	
PRINVIRO			O			CARY CORD	R			O	
VIBU CAIL				O		CYN ROSS				R	
CIRC LUTE				O		DIPS FULL				R	
TILI AMER	R	O	R			IMPGLAN				R	
BETUL SP				O		RIBURUB				R	
CAREDEW				R		SOLCAES				R	
CARP CARC		R				SOLIFLEX				R	
PRUN SERG	R					TRIGRAN				R	
THUJCCI	R	O				CARROSE				R	
RHUS RAD				O		DRY CART				R	
HILLIPETI				R		FRAGVIRG				O	
ULMUAMEL	R					QUEZ ALBA R					
CAREX PENS				O							
FRAX NIGR	R	R									
ISUGCANA	R										
PINUSTROUS	O										
EPICILT				R							
OSTRVIRG	O			R							

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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"/> 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 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
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 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	3	5	ACERSASA
3 SUB-CANOPY	3	4	TILI AMER > OSTRVIRG
4 UNDERSTORY	4	3	ACERSASA > RHACATH
5 GROUND LAYER	5	5	ACERSASA

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	SIZE CLASS							
		< 10cm	A	10-24cm	O	25-50cm	R	> 50cm	
STANDING SNAGS	O	< 10cm	R	10-24cm	\	25-50cm	\	> 50cm	
DEADFALL/LOGS	FIRM	R	< 10cm	R	10-24cm	R	25-50cm	\	> 50cm
	DECAYED	R	< 10cm	R	10-24cm	R	25-50cm	\	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input checked="" type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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#9

PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: F0D 7-3
	DATE: AUG 24, 2016
	SURVEYOR(S): SLO/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			
SALIX ALBA	O	G											
ACE NEGU		D	O										
SOL ALTI				O									
AMP BRAC				O									
GLE HEGE				O*									
VIT RIPA			G	G									
VIB OPUL			R	R									
MAT STRU				A									
ONO SENS				R									
PHI ARUN				G									
VIOLA SP.				R									
DAC GLAM				G									
LYSN LUMM				A									
SOL CAES				R									
PAR INSGR				O									
SOL GIAN				G									
OXA STRI				R									
GEN ALLF				R									
HERA. UANA				OA									



POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:
		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"/> 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 <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 checked="" 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	2	4	SALIX ALBA = ACE NEGU
3 SUB-CANOPY	3	5	ACE NEGU
4 UNDERSTORY	4	1	ACE NEGU
5 GROUND LAYER	5	3	MAT STRU > LYSN LUMM

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	A	< 10cm	A	10-24cm	O	25-50cm	/	> 50cm	
STANDING SNAGS	O	< 10cm	/	10-24cm	/	25-50cm	/	> 50cm	
DEADFALL/LOGS	FIRM	O	< 10cm	R	10-24cm	R	25-50cm	/	> 50cm
	DECAYED	/	< 10cm	/	10-24cm	/	25-50cm	/	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input checked="" type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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#9

ANSI



PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: BLO1
	DATE: AUG 15, 2010
	SURVEYOR(S): SLO/NMF

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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	
SOL CANA			oA			FRAG VIRG				R	
DAU CARO			oA			ACE RUBR	R				
CIC INTY			O			POP TRSM	O	R			
ACH MILL			R			MAL PUMI		O			
CIR ARIG			O			ULM AMGR	O				
FRA AMGR	O		R			CIR VULG				R	
MEL ALBA			O			TUS FARF				O	
VIG NIGR	R	R	O			VIT RIPT				R	
PRU VIRG			O			EUT GRAM				R	
RHUS TYPH			O			GIN VIRG				R	
AGRI GRYP			R			RIM CRIS				R	
HYPPARF			R			SYMP NDAN				O	
PHL PRAT			R			ELA UNBE				R	
POA PRAT			O								
ACE SASIA			R								
DACT GLOM			O								
LONI TATA			O								
ERI PHIL			R								
SYMP. SP.			R								
ACE NEGUN			O								
COR STOL			R								
RHA CATH			O								
DAN SPIC			O								
TRI PDC			O								
TAR OFFI			R								
CRA MONO			R								

emergent
emergent

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 checked="" 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 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 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 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 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	3	1	POP TRSM = FRA AMGR
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	2	RHA CATH = LONI TATA = PRU VIRG
5 GROUND LAYER	6	3	SOL CANA > DAU CARO

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	SIZE CLASS				
		< 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:

<input type="checkbox"/> PIONEER	<input checked="" type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST

SITE: 407TW3

POLYGON: CUS16

DATE: AUG 15, 2016

SURVEYOR(S): SLO/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	
IMPACAPE				A		AGRI GRYP				R	AC
POA PRAT				A		ACERSASA					R
CIRCLUTE				O		LGNI TATA					R
BIDIFRON				O		VITIRIPA			O	R	
SOLICAMA				O		PRUNVIRG				R	R
CORN STOL				O		ERIG ANNU					R
ACERNEGU		D				CRAT SP.					R
PARTINER				R		CAREPENN					R
SANCAIRVE				O		RIBUDISA				R	
ECHIN CRUS				R		CAREPEDU					R
ALLIPETI				R		AGRO STOL					R
FRANPENN				R		ANEM CANA					R
EQUI PRAT				R		ACHIMILL					R
HESP MATR				O		GSTR VIRG					O
LAMIUM PURP				R							
RHACATHI			A	R							
EUTHGRAM											
CRAT PINE		R	O		AC						
ELAE UMBEL		R	O								
POPUBALS				O							
POPITREM	O		O								
FRAX AMER	O	R	O	R							
JUGLMGR	R	R	O	R							
DACT GLOM				O							
FRAG VIRG				O							
ROSIMULT				O							
PHLEPRAT				R							

POLYGON

SITE:

POLYGON:

SURVEYOR(S):

DATE:

UTMZ:

UTME:

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"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input checked="" 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 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 checked="" 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"/> 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	1	FRAX AMER = POPITREM > JUGLMGR
3 SUB-CANOPY	3	1	ACERNEGU
4 UNDERSTORY	4	2	RHACATH > CRAT PINE
5 GROUND LAYER	5	5	IMPACAPE = POA PRAT

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	SIZE CLASS			
		< 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: 40741R

POLYGON: CUT19

DATE: AUG 15, 2016

SURVEYOR(S): SLO/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		
POA PRAT				O								
ALLI PET				O								
VITIRIPA			O	O								
JUGLIGR			R									
SOLICANA				O								
PARTINSGR			O	O								
ACERSASA				O								
RHAMATH			D	O								
ROSAMULT				R								
RHU RAP				O								
FRAX AMER			R	O								
HESPMATR				R								
CYNAROSS				O								
CARY MED			R	O								
CRAT MAVO												
AINSGRO			R									
QUER MACR			R									
CAREX PENN				O								
VITIRIPA			O	R								
CIRC LITE				O								
GELM CANA				O								
ROBIPSEU			R									
RUBUIDEA			R									
CRAT PUNC			R									
POD BELT				R								

POLYGON

SITE:

POLYGON:

SURVEYOR(S):

DATE:

UTMZ:

UTME:

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"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input checked="" 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"/> GRAMINGID <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 checked="" 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 type="checkbox"/> OPEN <input checked="" 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	JUGLIGR = PRUNUS20
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	3/4	5	RHAMATH
5 GROUND LAYER	5	4	POA PRAT > SOLICANA

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	R	< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS					
DEADFALL/LOGS	FIRM				
	DECAYED				

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input checked="" type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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emergent

emergent - O

O-emergent

emergent



PLANT SPECIES LIST	SITE: 407TW3
	POLYGON: CUTh and i
	DATE: AUG 24 2016
	SURVEYOR(S): NMF/SLO

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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	
LIQUAMBE			R			POBIPSEU		R			
LYTH SALI				O		PINUSYL		O			
THUJOC1			O	R		SALIX EXIG			R		
FRAX AMER			R								
PINUSTROB			R								
CORN STOL			A								
SOLICANA				A							
RHAMNATH				O							
POPALBA			R								
XINIVIEG			R								
ACERNEGUN			D	O							
ELAEUMBE				O							
VIT RIPA			R	O							
PIA ARAN				R							
SCIR MICRO				R							
EUTH GRAM											
JUN TENU				R							
ASC SURI				O							
BRUMINOR				R							
RIBUACCI				R							
PIA PRAT				O							
AGP STOL				R							
SALIX ERIG				R							
POPALBA				R							
ELEANGU				O							

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"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input checked="" 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
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 checked="" 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	3 3	ACERNEGUN > THUJOC1
4	UNDERSTORY	4 4	CORN STOL > ELEANGU = ELAEUMBE
5	GROUND LAYER	5 5	SOLICANA >>> PIA PRAT

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	
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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST

SITE: W02T03

POLYGON: CW10

DATE: AUG 15, 2016

SURVEYOR(S): SLO/NMF

POLYGON

SITE:

POLYGON:

SURVEYOR(S):

DATE:

UTMZ:

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	
TSUGANA											
ACERSASA		O		A							
OSTRVRG				O							
RHAMCATH			D	O							
FRAX AMER		O%		O							
PART INER				O							
CYNAROSS				O							
VIOLA SP				R							
GEUM ALLEP				R							
SOLICANA				O							
CAREX PENN				A							
CIRC LITE				R							
PRUNSEPO	R										
TILIAMER		O									
CAREX ROSEA				O							
ACERNIGR		R									
ALLIPETI				O							
LEO CARD				R							
FRAG VIRG				R							
CRAT MONO			O								
CRAT PUNC			O								
PRUNVIRG				R							
QUER HALL		R		R							
WILHAMER		O									
JUGNIGR		O	O								

all very low and

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"/> LACUSTRINE <input type="checkbox"/> RIVERINE <input type="checkbox"/> BOTTOMLAND <input checked="" 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 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 type="checkbox"/> OPEN <input type="checkbox"/> SHRUB <input checked="" 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	4	FRAX AMER >> ACERSASA
3 SUB-CANOPY	3	4	TILIAMER >> ACERNIGR
4 UNDERSTORY	4	3	RHAMCATH
5 GROUND LAYER	6	4	ACERSASA = CAREX PENN

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	A	10-24cm	O	25-50cm	R	> 50cm
STANDING SNAGS	O		R				
DEADFALL/LOGS	FIRM	O		O			
	DECAYED						

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

PIONEER
 YOUNG
 MID-AGE
 MATURE
 OLD-GROWTH

PLANT SPECIES LIST	SITE: 407tw3
	POLYGON: CUwid
	DATE: AUG 24, 2010
	SURVEYOR(S): SLD/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	
THUJOC1	O	A	R	O		EQUILARVE				O	A
ROBIPSEU	A		O			RUBODOR					R
RHAMCATH			A			ELYMKEYE					R
LOMITATA			R			EUTHIGRAM					R
ACERNEGU			G	G		SALISRID				R	
JUGLWGR			R	R		VICICRAC					R
FRAXAMER		R				FRAGVIRG					R
CORNSTOL			O			ACEGLAU	R	R			
POAPRAT				O	A	POTERECT					R
CIRSARVE				O		ACEKSAFH			R	R	
VITIBIPA			R	O							
SALICANA				O							
RUMECRS				R							
PRUNVIRG			R								
RIBUCCI				R							
CORNSTOL			A		PIC						
RHALARUN				R							
VIFERHAST				R							
CICHINTY				O							
BREMINGER				R							
POPDELTA	R										
POPTRGM		R	R								
ELALIMBE			R								
MAIUPIMI			R								
DALCCARU				R							
POPUBALS	R	R	R	R							
SALIXEXIG			R								

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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"/> 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	COMM. TYPE	OTHER
<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 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	3	3	ROBIPSEU >> THUJOC1
3 SUB-CANOPY	3	4	THUJOC1 > FRAXAMER
4 UNDERSTORY	4	4	RHAMCATH = CORNSTOL
5 GROUND LAYER	5	3	POAPRAT = EQUILARVE

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	
	FIRM	DECAYED	FIRM	DECAYED	FIRM	DECAYED
< 10cm	A		O		O	
10-24cm	A		O		R	
25-50cm	O					
> 50cm						

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407TW3
	POLYGON: CUW1e
	DATE: AUG 24, 2010
	SURVEYOR(S): NMF/SLD

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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	
SALIX FRAG	O					GEUM ALE				O+	
ACER NEGU		A	A	O		POPULUSM	R	O			
RHAMNATH			O+	O		POPUBALS	O		R		
SOLICANA				A							
GEUM CANA				O		POAPALU				O	
CIRC LUTE				O		BROMINER				O	
HESP MATR				O		POAPRAT				O	
ANEMCANA				R		DAUCARG				R	
PART INFER				O+	A	SALIALBA	O				
VITIRIPA		R	O	O		SOLGIGA				R	
RIBUODOR				R		LYSINUMU				O	
GLEC HEDF				A		THUJOCJ		R	R		
SOLA DOLC				R							
TILIAMER	R	R									
PHALPHEU				O							
IMPACAPE				R							
VIO LACONS				R							
SONCARVE				R							
JUOLNIGR		R	R								
LOMLTATA				O							
IMPACAPE				R							
SOLICAES											
RIBSANDR											
ACESASA	R	R									
BIDFRON				R							
ALITPFI				O							
RHUSRADI				R							

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"/> 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 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 checked="" 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 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	2	2	SALIX SP.
3 SUB-CANOPY	3	3	ACER NEGU
4 UNDERSTORY	3	4	ACER NEGU
5 GROUND LAYER	5	5	GLECHADE > LYSINUMU > SOLI CANA

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	A	10-24cm	O	25-50cm	> 50cm
STANDING SNAGS	R		R		25-50cm	> 50cm
DEADFALL/LOGS	FIRM	O	R		25-50cm	> 50cm
	DECAYED	< 10cm	10-24cm		25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input checked="" type="checkbox"/> PIONEER	<input checked="" type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: CUWIF
	DATE: JUNE 27, 2016
	SURVEYOR(S): SLD

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		
ROBIPSEU	D	O	O	R								
RHAMCATH			A	O								
THIJOCCEI		R	O	R								
LONI TATA			O									
POPUBALS	R											
UUGUNGR	R	R										
VITIRIPA		R	O	O								
ACERINAGU		R	O	R								
CIRCAVE				O*								
POAPRAT				O								
SOLCANIA				O								
CORNSTOL				O*								
POPDELTA	R											
ELAFUMBE			O									
HCE SASSA	R											
PRINURG			R	O								
RUMECRIS				R								
DAUCCARO				R								
FRAXAGR	R	R										
POPITREM	R											
GRIG ANNU				R								

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"/> 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"/> 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 <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			COVER	COMM. TYPE	OTHER
			<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	2	4	ROBIPSEU
3 SUB-CANOPY	3	3	ROBIPSEU >> ACERINAGU = THIJOCCEI
4 UNDERSTORY	4	2	RHAMCATH > CORNSTOL
5 GROUND LAYER	0	3	CIRCAVE > SOLCANIA

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	A	< 10cm	A	10-24cm	O	25-50cm	-	> 50cm
STANDING SNAGS	O	< 10cm	R	10-24cm	R	25-50cm	-	> 50cm
DEADFALL/LOGS	FIRM	O	< 10cm	-	-	10-24cm	-	> 50cm
	DECAYED	-	< 10cm	-	-	10-24cm	-	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input checked="" type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: CUM-13
	DATE: AUG 24, 2016
	SURVEYOR(S):

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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	
SOLICANA				A		PRUNVIRG			R		
NICKLINN				O		TUSSFARF				O	
ELYAREFE				O		PHYARUN				O	
POA PRAT				D		LYTHSAU				O	
PIRCARVE				O		BIDIFROM				R	
PLANTAB				O		LOTICORN				O	
VITIRIRA			O	O		RUDHIRT				R	
BROMINGR				A		VEGBHST				R	
ELAEUMBE				O		ELTHGRAM				R	
WIGINIGR				R		RUNECRIS				R	
RHACATH				O	R	TARACFI				R	
IONI TATA				O		TRIFPRAT					
PHIALAUST						SONCARVE				R	
SOLINEME						PRUNVIRG				R	
RHUSINPH				O		AGROSTOL				R	
ACHIMILL				O		ERIGANNU				R	
HYPERPERF						CAREXSTIPA				R	
CYNAROSS						SCIRP MICRO				R	
CRAT MONO					R	PECLSVRI				R	
VEGBHAD					R	VEGBURTI				R	
DAUCARO					O	SALIX FRIO				R	
PHLEPRAT					R	SYMPNOAN				R	
POSA MULT					O	MELIALBA				R	
LITNOFFI					R	PIC				R	
MENARVE					R	JUNCTENU				R	
RHUSRADI					O	POJALBA				R	
CORNSTOL					R	ROBIPSAU				R	
						PLANLANC				R	

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"/> 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"/> 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 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			
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	2	IONI TATA > RHACATH
5 GROUND LAYER	5	5	POA PRAT > SOLICANA = BROMINGR

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	R < 10cm				R 10-24cm				R 25-50cm				R > 50cm			
STANDING SNAGS	FIRM																
DEADFALL/LOGS	DECAYED																

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407TUB
	POLYGON: MUM-11K
	DATE: AUG 24, 2010
	SURVEYOR(S): SLD/MMF

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				A							
VIT RIPA			O	O							
LITH SALL				R							
EUP MACU				O							
ACER NEGU			R								
VERB URTI				O							
APOC CANN			R								
CYNAROSS.				R							
BROMINSE				O							
PHALARIN				O							
CLEVIRG				O							
RUDHIRT				R							
THL ARVE				R							
PARTINSE				R							
CAREX SP.				A	SAMP						
SOLIALTI				R							
CIRS ARVE				R							
INULNELE				R							
GLIARUGO				R							
POAPRAT				A							

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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 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 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	5	SOLCANA >> CAREX 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	SIZE CLASS			
		< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS	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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: SWD4-12
	DATE: AUG 15, 2016
	SURVEYOR(S): SLD/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	
JUGLGR	O	O	R			LYTH SALIC				R	
VERBURT				A		DIPSILL				R	
LED CARD				O		LEERGRVZ				R	
IMPACPE				O		CARPSEU				O	
GEOM CANA				O	PC	TEUC CANA				O	
PARTINSE		R	O	A							
CAREX LACU				O							
SALIX ALBA	O										
ACERX FREE		R		R							
TILI AMER		R									
CIRC LUTE				O							
ALLIPETI				O							
HYDR AMER				O							
LYSTCILT				R							
ACER RUBR				R							
CAREX TENERA				O							
FRAX PENN		R	O								
SOLI GIGA				R							
ACER NEGU		O									
POA PRAT				O							
VITTRIPA				O	O						
SOLICANA				O							
ERIG PHIL				R							
DART GLON?				R							
POA MULT				R							
VIBUOPIL				R							
LOWI TATA				R							

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input checked="" 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"/> 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 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 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			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 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	3	2	JUGLGR > SALIALBA
3 SUB-CANOPY	3	3	JUGLGR = ACERNEGU
4 UNDERSTORY	4	2	FRAX PENN = PARTINSE
5 GROUND LAYER	5	5	PARTINSE = VERBURT

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	SIZE CLASS				
		< 10cm	10-24cm	25-50cm	> 50cm	
STANDING SNAGS	R	< 10cm	10-24cm	25-50cm	> 50cm	
DEADFALL/LOGS	FIRM	R	< 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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407 T103
	POLYGON: SWD 4-1b
	DATE: AUG 24, 2010
	SURVEYOR(S): NMF/SLD

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	
SALIX SP.	O					RIBESMER				R	
YUGA NIGR	O	R	R			GEUM LACI				O	
ACER NEGU		O	O	O		THIJS OCCI	R	O			
RHAMNATH			O	O		ACER SASA		R	R		
VITRIPA		O	O	O	A	CIRC LUTE				O	
TILIAMER	R	R				IMP APALL				R	
VERB URTI				A		MAUTHIA SP.				R	PIC
IMPACAP				A		GEU MALLE				R	
AMPH BRAC				R		ALLI PETI				O	
SOLICANA				O		SOLADOLC				R	
MATSTRU				A		GERA ROBE				R	
BIDEFRON				R		TUSSFAE				R	
PRUNVULG				R		ONKSENS				R	
LONITATA				R		SOLIFLEX				R	
PARTINSE	R					GEUM LACI				R	
CORN RACE				R		OYALSRI				R	
SOLICAES				R		GALI SP.				R	SAMP
GERA FONT				R		LYSIMUMMM				R	
GLECHADE				A		PHALARIN				R	
ECHILORD				R		BIDEFRON				R	
DACT GLAN				R		EQUIDRAT				R	
CHEEX SP.				R		LYTR SALIC				O	
POAPALL				R		TYPH SP				R	
SOLIGIGA				R		PARAG AUST				R	
FRAX PENN		O	O	O		ECHINCRUS				R	
PLANIMASAR				R		POLYGLINIUM SP.				R	
VIOLA SO.				O		PLE FONT				R	
HESPMOTR				R		SYMP LANC				R	

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

POLYGON DESCRIPTION:

SYSTEM	SUBSTRATE	TOPO. FEATURE	HISTORY	PLANT FORM	COMMUNITY
<input type="checkbox"/> TERRESTRIAL <input type="checkbox"/> WETLAND <input checked="" 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/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 checked="" 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 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			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 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	2	SALIX SP. > YUGA NIGR
3 SUB-CANOPY	3	2	ACER NEGU
4 UNDERSTORY	3	3	ACER NEGU > FRAX PENN
5 GROUND LAYER	5	5	MATSTRU > IMPACAP = VERB URTI

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
DECAYED	< 10cm	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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* Seepages identified leads to water course.
 * MATSTRU dominant in northern portion of polygon

PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: SWD 4-1C
	DATE: MAY 18 2010
	SURVEYOR(S): NMF/SLD

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			
OUER RUBR	O		O										
SOLICANA				OA									
TILIA AMER	O												
DAUC CARO				O									
BRUM INSEM				OA									
LOTUCORN				O									
SALIX FRAG	D	O											
ASCL SYRI				O									
PHALARIS				D									
VITIS LPA		O	O										
RHAM CATH			O										
ACER NEGU			O										
SOLIFLIX				R									
CIRS VULG				O									

EDGE TO WEST OF FOREST
 SWAMP DAM BY SALIX

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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 DISTURBED	<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 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			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 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	3	3	SALIX FRAG >> OUER RUBR = TILIA AMER
3 SUB-CANOPY	3	2	SALIX FRAG > ACER NEGU
4 UNDERSTORY	4	1	RHAMCATH
5 GROUND LAYER	5	4	SOLICANA = BRUMINEZ

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	FIRM				
	DECAYED				

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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PLANT SPECIES LIST	SITE: 407 TW 2
	POLYGON: CUM1-1L
	DATE: JULY 25, 2016
	SURVEYOR(S): SLD

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	
SALIX ALBA		O				ARCTIAPP				O	
SOLICANA					D	THUDOCOL	R				
VICICRAE					O	POPULTRAM	R				
PHRA AUST					O	LOM TATA					
MELI OFFI					C	PINUNIGR	R				
LOTUCORN					C	RUMECRIS				O	
CIRS ARVE					C	CRAT PUNC				O	
POA PRAT					A	ROBIPSEU	R				
ERIGANNIA					R	CIGNINTY				O	
CORNSTOL					O	RANACRIS				R	
RHAMCATH					O-A	MELIALBA				O	
PRUNVIRG					O	TRIFPRAT				O	
TARA OFFI					O	PLANMAM				O	
VITI RIPA					R	PICEPING	R				
ACERNEGUN					O R R	ACHIMILL				R	
ASC SYRI					R	AMBICARTE				O	
DAUCCARU					O	LITHSTU				O	
SYMP ADAN					R	CORNVAEI				R	
SALIX FRAG					O-A						
RHUS TVH					O						
ERIGPHIL					O						
HESP MATR					O						
HYPE PERE					O						
ELEANGU					A						
ELEUMBE					A						
LIAMULS					O						
THLEARVE					R						

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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 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 checked="" type="checkbox"/> MEADOW <input type="checkbox"/> PRAIRIE <input type="checkbox"/> THICKET <input type="checkbox"/> SAVANNAH <input type="checkbox"/> WOODLAND <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"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	SALIX ALBA = SAL FRAG
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	2	RHAMCATH = ELEUMBE = ELEANGU
5 GROUND LAYER	5	5	SOLICANA > POA PRAT

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:

DEADFALL/LOGS	TREES			
	< 10cm	10-24cm	25-50cm	> 50cm
FIRM	R	R		
DECAYED				

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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- Small, isolated thickets patches dominated by RHAMCATH, ELEANGU and ELEUMBE



PLANT SPECIES LIST	SITE: 407 TW3
	POLYGON: MAS2-1a
	DATE: JULY 26, 2016
	SURVEYOR(S): SLD/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			
TYPH SP					O								
TYPHANGU					D								

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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 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 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 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"/> 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	TYPHANGU > TYPH 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
	DECAYED	< 10cm	10-24cm	25-50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = BARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
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- northern 1/3 dominated by phrag australis



PLANT SPECIES LIST	SITE: 407 TU3
	POLYGON: MAS2-15
	DATE: JULY 26, 2016
	SURVEYOR(S): SLID/NAAF

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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	
TYPH ANGU				D							
ARCT MINUA				R							
LYTHSALI				A							
PHRAG AUST				D							
RHAMCATH			R								
SONCARVE				R							
IMPACAPE				O							
DIPSACFU				O							
FRAX PENN			R								
VERBAST				R							
SUMPNOAN				R							
BIDENS FRON				R							
POAPALU				O							
MELIALBA				R							
PHALARUN				O							
GENTBIEN				R							
RUMECRIS				O PIC							
SAUFRAG	R	R									
GLYSTR				O							
MENTARVE				R							
COROVARI				R							
VERBAST				R							
TUSEFARE				O							
SAMBANA				R							
POLYPENS											

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 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 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 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"/> 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"/> HEDGEROW

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1 EMERGENT	3	1	SAUFRAG
2 CANOPY			
3 SUB-CANOPY			
4 UNDERSTORY	4	2	RHAMCATH = FRAX PENN
5 GROUND LAYER	4	5	TYPH ANGU = PHRAG AUST > LYTHSALI

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	R			
		< 10cm	10-24cm	25-50cm	> 50cm
STANDING SNAGS		< 10cm	10-24cm	25-50cm	> 50cm
	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:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
----------------------------------	--------------------------------	----------------------------------	---------------------------------	-------------------------------------



PLANT SPECIES LIST	SITE: 40+7W5
	POLYGON: MAM2d
	DATE: JULY 27, 2016
	SURVEYOR(S): SLP

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		
TYPH SP			R									
TYPH ANGU			O	O								
PHALARIS				D								
SOLICANA				OH								
CAENSTAL			O									
PRUNING			O									
SALIDISC			R									
POA PRAT				O								
LYTH SALI				O								
IMPERAPE				R								
PHRAUST				R								
LOMITATA			O									
RHIZOATH			O	R								

POLYGON	SITE:	POLYGON:
	SURVEYOR(S):	DATE:
	UTMZ:	UTME:

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"/> 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 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 <input type="checkbox"/> OPEN WATER <input type="checkbox"/> SHALLOW WAT. <input checked="" type="checkbox"/> SURFICIAL DEP. <input type="checkbox"/> BEDROCK			COVER	COMM. TYPE	OTHER
			<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	HS	5	PHALARIS >> TYPH ANGU

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	10-24cm	25-50cm	> 50cm

ABUNDANCE CODES: A = ABUNDANT O = OCCASIONAL R = RARE N = NONE

COMMUNITY MATURITY:

<input type="checkbox"/> PIONEER	<input type="checkbox"/> YOUNG	<input type="checkbox"/> MID-AGE	<input type="checkbox"/> MATURE	<input type="checkbox"/> OLD-GROWTH
----------------------------------	--------------------------------	----------------------------------	---------------------------------	-------------------------------------

**APPENDIX C.
PHOTOGRAPHIC RECORD**

PHOTO APPENDIX
Highway 407 Transitway from
Hurontario Street to Highway 400
Segment A



View looking west at CUM1-1a with an active agricultural field immediately to the south.



View looking south at CUM1-1a.



View looking north at CUT1a.



View looking north east at MAM/MAS2a.



View looking south at MAM/MAS2a with CUT1a to the west.

PHOTO APPENDIX
Highway 407 Transitway from
Hurontario Street to Highway 400
Segment B



View looking north towards CUM1-1/CUT1. The community also extends south of the photo taken.



View looking north east towards MAM2-2a.



View looking north towards CUT1/CUW1a.



View looking north at CUM1-1b.



View looking north at MAM2b, with a small inclusion of shrubs at the north end.



View looking north at CUM1-1c.

PHOTO APPENDIX
Highway 407 Transitway from
Huronario Street to Highway 400
Segment C



View looking east at CUM1-1d.



View looking south at CUT1/CUW1b.



View looking south at MAM/MASb.



View looking east towards CUT1/CUW1b.



View looking south at CUW1a.



View looking south under the canopy of CUW1b.

PHOTO APPENDIX
Highway 407 Transitway from
Hurontario Street to Highway 400
Segment D



View looking north at CUT1b.



View looking at CUM1-1g.



View looking under canopy of CUT1c.



View looking north at CUT1c with an agricultural field in the foreground.

PHOTO APPENDIX

Highway 407 Transitway from Huronario Street to Highway 400 Segment E



View looking north west at CUT1d.



View looking north at CUS1a.



View looking south at CUT1e.



View looking east at CUM1-1h with CUP3 immediately to the south.



View looking south east at CUP3.



View looking south under the canopy of CUP3.

PROJECT #TA8558
November 2016

PHOTO APPENDIX
Highway 407 Transitway from
Hurontario Street to Highway 400
Segment F Hwy 50



View looking west at CUM1-1h.



View looking north at CUM1-1h, adjacent to Highway 427.

PHOTO APPENDIX
Highway 407 Transitway from
Hurontario Street to Highway 400
Segment G



View looking west under the canopy of CUW1c.



View looking north west at SWD4-1a.



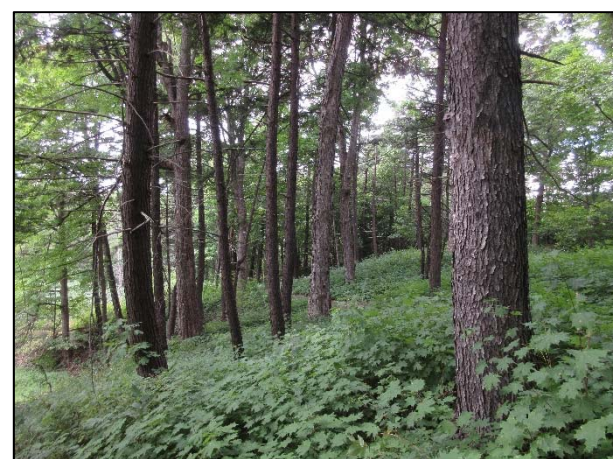
View looking south west with MAS2-1b in the foreground with FOM3-7 in the background.



View looking south at FOD5-6.



View looking north west under the canopy of FOD6-5.



View looking north at FOM6-1.

PHOTO APPENDIX
Highway 407 Transitway from
Hurontario Street to Highway 400
Segment G Continued



View looking north at CUT1f.



View looking south under the canopy of FOM3-2.



View looking north at CUW1e.



View looking north west at BLO1.



View looking north at CUM1-1j with Highway 407 ETR in the background.

PHOTO APPENDIX
Highway 407 Transitway from
Hurontario Street to Highway 400
Segment H



View looking west at stormwater pond and surrounding CUM1-11.



View looking east along hydro corridor at CUM1-11.



View looking south towards railroad tracks at CUM1-11.



View looking south west at CUM1-11.

**APPENDIX D.
VASCULAR PLANT LISTS**

TABLE D1.
VASCULAR PLANT LIST FOR WETLAND, SWAMP AND AQUATIC COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	York - Varga	MAM2/MAS2a	MAM2/MAS2b	MAM2-2a	MAM2-2b	MAM2a	MAM2b	MAM2c	MAM2d	MAS2	MAS2-1a	MAS2-1b	SWD4-1a	SWD4-1b	SWD4-1c	SASI
EQUISETACEAE	HORSETAIL FAMILY																					
<i>Equisetum arvense</i>	field horsetail	G5	S5		L5	X	X															
<i>Equisetum pratense</i>	meadow horsetail	G5	S5		L3	R7	R8													X		
DRYOPTERIDACEAE	WOOD FERN FAMILY																					
<i>Dryopteris carthusiana</i>	spinulose wood fern	G5	S5		L5	X	X															
<i>Matteuccia struthiopteris</i> var. <i>pennsylvanica</i>	ostrich fern	G5	S5		L5	X	X														X	
<i>Onoclea sensibilis</i>	sensitive fern	G5	S5		L5	X	X													X		
GINKGOACEAE	GINKGO FAMILY																					
* <i>Ginkgo biloba</i>	maiden-hair tree																					
PINACEAE	PINE FAMILY																					
* <i>Picea abies</i>	Norway spruce	G?	SE3		L+	X	X															
<i>Picea glauca</i>	white spruce	G5	S5		L3	R3	X															
* <i>Picea pungens</i>	Colorado spruce	G5	SE1		L+																	
* <i>Pinus nigra</i>	Austrian pine	G?	SE2		L+																	
<i>Pinus strobus</i>	eastern white pine	G5	S5		L4	X	X															
* <i>Pinus sylvestris</i>	scotch pine	G?	SE5		L+	X	X															
<i>Tsuga canadensis</i>	eastern hemlock	G5	S5		L4	X	X															
CUPRESSACEAE	CEDAR FAMILY																					
<i>Juniperus virginiana</i>	eastern red cedar	G5	S5		L5		X															
<i>Thuja occidentalis</i>	eastern white cedar	G5	S5		L4	X	X													X		

**TABLE D1.
VASCULAR PLANT LIST FOR WETLAND, SWAMP AND AQUATIC COMMUNITIES**

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	York - Varga	MAM2/MAS2a	MAM2/MAS2b	MAM2-2a	MAM2-2b	MAM2a	MAM2b	MAM2c	MAM2d	MAS2	MAS2-1a	MAS2-1b	SWD4-1a	SWD4-1b	SWD4-1c	SASI
<i>Quercus macrocarpa</i>	bur oak	G5	S5		L4	X	X															
<i>Quercus rubra</i>	red oak	G5	S5		L4	X	X														X	
BETULACEAE	BIRCH FAMILY																					
<i>Betula papyrifera</i>	white birch	G5	S5		L4	X	X															
<i>Carpinus caroliniana</i> ssp. <i>virginiana</i>	blue beech	G5T	S5		L4	X	X															
<i>Ostrya virginiana</i>	ironwood	G5	S5		L5	X																
CHENOPODIACEAE	GOOSEFOOT FAMILY																					
* <i>Chenopodium album</i> var. <i>album</i>	lamb's quarters	G5T5	SE5		L+					X												
CARYOPHYLLACEAE	PINK FAMILY																					
* <i>Cerastium fontanum</i>	larger mouse-ear chickweed	G?	SE5		L+	X	X													X		
* <i>Saponaria officinalis</i>	bouncing-bet	G?	SE5		L+	X	X															
POLYGONACEAE	SMARTWEED FAMILY																					
<i>Persicaria pensylvanicum</i>	Pennsylvania smartweed	G5	S5		L4	R3	R3										X					
<i>Polygonum sp.</i>	smartweed								X											X		
* <i>Rumex crispus</i>	curly-leaf dock	G?	SE5		L+	X	X	X	X			X					X					
GUTTIFERAE	ST. JOHN'S-WORT FAMILY																					
* <i>Hypericum perforatum</i>	common St. John's-wort	G?	SE5		L+	X	X															
TILIACEAE	LINDEN FAMILY																					
<i>Tilia americana</i>	basswood	G5	S5		L5	X	X												X	X	X	

TABLE D1.
VASCULAR PLANT LIST FOR WETLAND, SWAMP AND AQUATIC COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	York - Varga	MAM2/MAS2a	MAM2/MAS2b	MAM2-2a	MAM2-2b	MAM2a	MAM2b	MAM2c	MAM2d	MAS2	MAS2-1a	MAS2-1b	SWD4-1a	SWD4-1b	SWD4-1c	SASI
	clover																					
* <i>Robinia pseudo-acacia</i>	black locust	G5	SE5		L+	X																
* <i>Trifolium arvense</i>	rabbit-foot clover	G?	SE4		L+	X																
* <i>Trifolium pratense</i>	red clover	G?	SE5		L+	X																
* <i>Trifolium repens</i>	white clover	G?	SE5		L+	X																
* <i>Vicia cracca</i>	tufted vetch	G?	SE5		L+	X				X	X	X										
ELAEAGNACEAE	OLEASTER FAMILY																					
* <i>Elaeagnus angustifolia</i>	Russian olive	G?	SE3		L+	X																
* <i>Elaeagnus umbellata</i>	Autumn olive	G?	SE3		L+																	
LYTHRACEAE	LOOSESTRIFE FAMILY																					
* <i>Lythrum salicaria</i>	purple loosestrife	G5	SE5		L+	X		X	X			X		X		X		X	X			
ONAGRACEAE	EVENING-PRIMROSE FAMILY																					
<i>Circaea lutetiana</i> ssp. <i>canadensis</i>	yellowish enchanter's nightshade	G5T5	S5		L5	X													X	X		
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	ciliate willow-herb	G5T?	S5		L5	X																
<i>Oenothera biennis</i>	common evening-primrose	G5	S5		L5	U											X					
CORNACEAE	DOGWOOD FAMILY																					
<i>Cornus alternifolia</i>	alternate-leaved dogwood	G5	S5		L5	X																
<i>Cornus racemosa</i>	red paniced dogwood	G5?	S5		L4	X														X		

**TABLE D1.
VASCULAR PLANT LIST FOR WETLAND, SWAMP AND AQUATIC COMMUNITIES**

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	York - Varga	MAM2/MAS2a	MAM2/MAS2b	MAM2-2a	MAM2-2b	MAM2a	MAM2b	MAM2c	MAM2d	MAS2	MAS2-1a	MAS2-1b	SWD4-1a	SWD4-1b	SWD4-1c	SASI
<i>Lactuca serriola</i>	prickly lettuce	G?	SE5		L+																	
<i>Rudbeckia hirta</i>	black-eyed Susan	G5	S5		L4	X																
<i>Solidago caesia</i>	blue-stem goldenrod	G5	S5		L5	X														X		
<i>Solidago canadensis</i>	canada goldenrod	G5	S5		L5	X		X	X		X		X		X				X	X	X	
<i>Solidago canadensis</i> var. <i>scabra</i>	tall goldenrod		S5		L5	X			X													
<i>Solidago flexicaulis</i>	zig-zag goldenrod	G5	S5		L5	X														X	X	
<i>Solidago gigantea</i>	giant goldenrod	G5	S5		L5	X													X	X		
<i>Solidago nemoralis</i> var. <i>nemoralis</i>	gray goldenrod	G5T?	S5		L5																	
<i>Solidago</i> sp.	goldenrod																					
* <i>Sonchus arvensis</i> ssp. <i>arvensis</i>	field sow-thistle	G?T?	SE5		L+	X											X					
<i>Symphotrichum novae-angliae</i>	New England aster	G5	S5		L5	X			X	X		X					X					
* <i>Tanacetum vulgare</i>	common tansy	G?	SE5		L+	X						X										
* <i>Taraxacum officinale</i>	common dandelion	G5	SE5		L+	X																
* <i>Tussilago farfara</i>	coltsfoot	G?	SE5		L+	X											X			X		
JUNCACEAE	RUSH FAMILY																					
<i>Juncus dudleyi</i>	Dudley's rush	G5	S5		L5					X												
<i>Juncus</i> sp.	rush																					
<i>Juncus tenuis</i>	path rush	G5	S5		L5	X																
CYPERACEAE	SEDGE FAMILY																					
<i>Carex deweyana</i>	Dewey's sedge	G5	S5		L4	X																
<i>Carex lacustris</i>	lake-bank sedge	G5	S5		L4	X													X			

TABLE D1.
VASCULAR PLANT LIST FOR WETLAND, SWAMP AND AQUATIC COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	York - Varga	MAM2/MAS2a	MAM2/MAS2b	MAM2-2a	MAM2-2b	MAM2a	MAM2b	MAM2c	MAM2d	MAS2	MAS2-1a	MAS2-1b	SWD4-1a	SWD4-1b	SWD4-1c	SAS1
<i>Panicum capillare</i>	witch grass	G5	S5		L5	X																
<i>Phalaris arundinacea</i>	reed canary grass	G5	S5		L+?	X		X	X	X	X		X		X		X			X	X	
* <i>Phleum pratense</i>	timothy	G?	SE5		L+	X																
<i>Phragmites australis</i>	common reed	G5	S5		L+?	X			X	X		X		X	X	X	X			X		
<i>Poa palustris</i>	fowl meadow grass	G5	S5		L5	X		X	X	X							X			X		
<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky bluegrass	G5T	S5		L+	X					X	X			X				X			
TYPHACEAE	CATTAIL FAMILY																					
<i>Typha angustifolia</i>	narrow-leaved cattail	G5	S5		L+	X		X	X	X		X			X		X					
<i>Typha latifolia</i>	broad-leaved cattail	G5	S5		L+	X		X	X	X		X			X		X					
<i>Typha</i> sp.	cattail								X	X					X	X			X		X	
LILIACEAE	LILY FAMILY																		X			
<i>Allium tricoccum</i>	wild leek	G5	S5		L3	X																
* <i>Asparagus officinalis</i>	garden asparagus	G5?	SE5		L+	X																
<i>Trillium grandiflorum</i>	white trillium	G5	S5		L3	X																
IRIDACEAE	IRIS FAMILY																					
<i>Iris</i> sp.																						

*Introduced / X = Present / Refer to **Appendix E** for species rank definitions.

**TABLE D2.
VASCULAR PLANT LIST FOR FOREST COMMUNITIES AND ANSI**

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	BLO1	FOD4	FOD6-5a	FOD6-5b	FOD7-3	FOM3-2	FOM6-1	FOM7
<i>Anemone canadensis</i>	Canada anemone	G5	S5		L5	X								
<i>Clematis virginiana</i>	virgin's-bower	G5	S5		L5	X								
* <i>Ranunculus acris</i>	tall buttercup	G5	SE5		L+	X								
BERBERIDACEAE	BARBERRY FAMILY													
<i>Podophyllum peltatum</i>	may-apple	G5	S5		L4	X			X					
ULMACEAE	ELM FAMILY													
<i>Ulmus americana</i>	white elm	G5?	S5		L5	X	X		X					
* <i>Ulmus pumila</i>	Siberian elm	G?	SE3		L+	X								
URTICACEAE	NETTLE FAMILY													
<i>Pilea fontana</i>	spring clearweed	G5	S4		L3	R3								
* <i>Urtica dioica</i> ssp. <i>dioica</i>	European stinging nettle	G5T?	SE2		L+	XSR								
JUGLANDACEAE	WALNUT FAMILY													
<i>Carya cordiformis</i>	bitternut hickory	G5	S5		L4	X			X			X		
<i>Carya ovata</i> var. <i>ovata</i>	shagbark hickory	G5	S5		L3	X					X			
<i>Juglans nigra</i>	black walnut	G5	S4		L5	X	X						X	
FAGACEAE	BEECH FAMILY													
<i>Fagus grandifolia</i>	American beech	G5	S5		L4	X								X
<i>Quercus alba</i>	white oak	G5	S5		L2	X			X					
<i>Quercus macrocarpa</i>	bur oak	G5	S5		L4	X								X
<i>Quercus rubra</i>	red oak	G5	S5		L4	X								
BETULACEAE	BIRCH FAMILY													
<i>Betula papyrifera</i>	white birch	G5	S5		L4	X								
<i>Carpinus caroliniana</i> ssp. <i>virginiana</i>	blue beech	G5T	S5		L4	X			X					
<i>Ostrya virginiana</i>	ironwood	G5	S5		L5	X			X		X	X	X	X

**TABLE D2.
VASCULAR PLANT LIST FOR FOREST COMMUNITIES AND ANSI**

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	BLO1	FOD4	FOD6-5a	FOD6-5b	FOD7-3	FOM3-2	FOM6-1	FOM7
CHENOPODIACEAE	GOOSEFOOT FAMILY													
* <i>Chenopodium album</i> var. <i>album</i>	lamb's quarters	G5T5	SE5		L+									
CARYOPHYLLACEAE	PINK FAMILY													
* <i>Cerastium fontanum</i>	larger mouse-ear chickweed	G?	SE5		L+	X								
* <i>Saponaria officinalis</i>	bouncing-bet	G?	SE5		L+	X								
POLYGONACEAE	SMARTWEED FAMILY													
<i>Persicaria pensylvanicum</i>	Pennsylvania smartweed	G5	S5		L4	R3								
<i>Polygonum</i> sp.	smartweed													
* <i>Rumex crispus</i>	curly-leaf dock	G?	SE5		L+	X	X							
GUTTIFERAE	ST. JOHN'S-WORT FAMILY													
* <i>Hypericum perforatum</i>	common St. John's-wort	G?	SE5		L+	X	X							
TILIACEAE	LINDEN FAMILY													
<i>Tilia americana</i>	basswood	G5	S5		L5	X			X		X			
VIOLACEAE	VIOLET FAMILY													
<i>Viola sororia</i>	common blue violet	G5	S5		L5	X		X		X				
CUCURBITACEAE	GOURD FAMILY													
<i>Echinocystis lobata</i>	prickly cucumber	G5	S5		L5	X								
SALICACEAE	WILLOW FAMILY													
* <i>Populus alba</i>	silver poplar	G5	SE5		L+	X								
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	balsam poplar	G5T?	S5		L5	X		X						X
<i>Populus deltoides</i> ssp. <i>deltoides</i>	eastern cottonwood	G5T?	SU		L5									
<i>Populus grandidentata</i>	large-tooth aspen	G5	S5		L4	X								
<i>Populus tremuloides</i>	trembling aspen	G5	S5		L5	X	X							

TABLE D2.
VASCULAR PLANT LIST FOR FOREST COMMUNITIES AND ANSI

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	BLO1	FOD4	FOD6-5a	FOD6-5b	FOD7-3	FOM3-2	FOM6-1	FOM7
<i>Cornus sericea</i> ssp. <i>sericea</i>	red-osier dogwood	G5	S5		L5	X	X							
CELASTRACEAE	STAFF-TREE FAMILY													
<i>Euonymus obovata</i>	running strawberry-bush	G5	S5		L3	X							X	
EUPHORBIACEAE	SPURGE FAMILY													
<i>Euphorbia corollata</i>	flowering spurge	G5	S4											
RHAMNACEAE	BUCKTHORN FAMILY													
* <i>Rhamnus cathartica</i>	common buckthorn	G?	SE5		L+	X	X	X		X		X	X	X
VITACEAE	GRAPE FAMILY													
<i>Parthenocissus vitacea</i>	inserted Virginia-creeper	G5	S5		L5	X		X			X	X		
<i>Vitis riparia</i>	riverbank grape	G5	S5		L5	X	X	X	X	X	X			X
ACERACEAE	MAPLE FAMILY													
<i>Acer negundo</i>	manitoba maple	G5	S5		L+?	X	X	X	X		X			
<i>Acer nigrum</i>	black maple	G5Q	S4?		L4	X		X						
* <i>Acer platanoides</i>	norway maple	G?	SE5		L+	X								
<i>Acer rubrum</i>	red maple	G5	S5		L4	X	X							
<i>Acer saccharinum</i>	silver maple	G5	S5		L4	X								
<i>Acer saccharum</i> var. <i>saccharum</i>	sugar maple	G5T?	S5		L5	X	X		X	X		X	X	X
<i>Acer X freemanii</i>	freeman's maple				LH	XSR								
ANACARDIACEAE	SUMAC FAMILY													
<i>Rhus hirta</i>	staghorn sumac	G5	S5		L5	X	X							
<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	poison-ivy	G5T	S5		L4	X		X		X				
OXALIDACEAE	WOOD SORREL FAMILY													
<i>Oxalis stricta</i>	upright yellow wood-sorrel	G5	S5		L+?	X				X	X			

**TABLE D2.
VASCULAR PLANT LIST FOR FOREST COMMUNITIES AND ANSI**

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	BLO1	FOD4	FOD6-5a	FOD6-5b	FOD7-3	FOM3-2	FOM6-1	FOM7
* <i>Lonicera tatarica</i>	tartarian honeysuckle	G?	SE5		L+	X	X	X	X	X				
<i>Sambucus nigra</i> ssp. <i>canadensis</i>	common elderberry	G5	S5		L5	X								
* <i>Viburnum opulus</i>	guelder rose	G5	SE4		L+	X				X	X			X
DIPSACACEAE	TEASEL FAMILY													
* <i>Dipsacus fullonum</i> ssp. <i>sylvestris</i>	wild teasel	G?T?	SE5		L+	X				X				
ASTERACEAE	ASTER FAMILY													
* <i>Achillea millefolium</i> var. <i>millefolium</i>	common yarrow	G5T?	SE?		L+	X	X							
<i>Ageratina altissima</i> var. <i>altissima</i>	white snakeroot	G5	S5		L5	X		X						
<i>Ambrosia artemisiifolia</i>	common ragweed	G5	S5		L5	X								
<i>Ambrosia trifida</i>	giant ragweed	G5	S5		L5	X								
* <i>Arctium lappa</i>	great burdock	G?	SE5		L+	X								X
* <i>Arctium minus</i>	common burdock	G?T?	SE5		L+	X								
* <i>Artemisia biennis</i>	biennial wormwood	G5	SE5		L+	X								
<i>Symphyotrichum lanceolatum</i>	tall white aster	G5T?	S5		L5	X								
<i>Symphyotrichum lateriflorum</i>	calico aster	G5T5	S5											
<i>Symphyotrichum puniceum</i>	purple-stemmed aster	G5T?	S5		L5								X	
<i>Aster</i> sp.	aster						X							
<i>Bidens frondosa</i>	devil's beggar-ticks	G5	S5		L5	X				X				
* <i>Cichorium intybus</i>	chicory	G?	SE5		L+	X	X							
* <i>Cirsium arvense</i>	Canada thistle	G?	SE5		L+	X	X						X	
* <i>Cirsium vulgare</i>	bull thistle	G5	SE5		L+	X	X	X						
<i>Erigeron annuus</i>	daisy fleabane	G5	S5		L5	X								
<i>Erigeron philadelphicus</i> var. <i>philadelphicus</i>	Philadelphia fleabane	G5T?	S5		L5	X	X							

**TABLE D2.
VASCULAR PLANT LIST FOR FOREST COMMUNITIES AND ANSI**

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	BLO1	FOD4	FOD6-5a	FOD6-5b	FOD7-3	FOM3-2	FOM6-1	FOM7
<i>Eupatorium maculatum</i> var. <i>maculatum</i>	spotted joe-pye-weed	G5T5	S5		L5	X								
<i>Euthamia graminifolia</i>	flat-topped bushy goldenrod	G5	S5			X	X							
<i>Helenium autumnale</i>	common sneezeweed	G5	S5											
* <i>Inula helenium</i>	elecampane	G?	SE5		L+	X								
<i>Lactuca serriola</i>	prickly lettuce	G?	SE5		L+									
<i>Rudbeckia hirta</i>	black-eyed Susan	G5	S5		L4	X								
<i>Solidago caesia</i>	blue-stem goldenrod	G5	S5		L5	X		X		X	X			
<i>Solidago canadensis</i>	canada goldenrod	G5	S5		L5	X	X	X		X				
<i>Solidago canadensis</i> var. <i>scabra</i>	tall goldenrod		S5		L5	X					X			
<i>Solidago flexicaulis</i>	zig-zag goldenrod	G5	S5		L5	X				X			X	X
<i>Solidago gigantea</i>	giant goldenrod	G5	S5		L5	X		X			X			X
<i>Solidago nemoralis</i> var. <i>nemoralis</i>	gray goldenrod	G5T?	S5		L5									
<i>Solidago sp.</i>	goldenrod													
* <i>Sonchus arvensis</i> ssp. <i>arvensis</i>	field sow-thistle	G?T?	SE5		L+	X								
<i>Symphotrichum novae-angliae</i>	New England aster	G5	S5		L5	X	X							
* <i>Tanacetum vulgare</i>	common tansy	G?	SE5		L+	X								
* <i>Taraxacum officinale</i>	common dandelion	G5	SE5		L+	X	X							X
* <i>Tussilago farfara</i>	coltsfoot	G?	SE5		L+	X	X							
JUNCACEAE	RUSH FAMILY													
<i>Juncus dudleyi</i>	Dudley's rush	G5	S5		L5									
<i>Juncus sp.</i>	rush													
<i>Juncus tenuis</i>	path rush	G5	S5		L5	X								
CYPERACEAE	SEDGE FAMILY													
<i>Carex deweyana</i>	Dewey's sedge	G5	S5		L4	X				X				

**TABLE D2.
VASCULAR PLANT LIST FOR FOREST COMMUNITIES AND ANSI**

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	BLO1	FOD4	FOD6-5a	FOD6-5b	FOD7-3	FOM3-2	FOM6-1	FOM7
<i>Carex lacustris</i>	lake-bank sedge	G5	S5		L4	X								
<i>Carex pedunculata</i>	long-stalked sedge	G5	S5		L4	X								
<i>Carex pennsylvanica</i>	Pennsylvania sedge	G5	S5		L4	X				X			X	
<i>Carex pseudo-cyperus</i>	cypress-like sedge	G5	S5		L4	X								
<i>Carex rosea</i>	stellate sedge	G5	S5		L5	X				X			X	
<i>Carex sp.</i>	sedge												X	
<i>Carex stipata</i>	awl-fruited sedge	G5	S5		L5	X								
<i>Carex tenera</i>	straw sedge	G5T	S5		L4	X								
<i>Scirpus microcarpus</i>	small-fruited bulrush	G5	S5		L4	X								
POACEAE	GRASS FAMILY													
* <i>Agrostis gigantea</i>	red-top	G4G5	SE5		L+	X								
* <i>Agrostis stolonifera</i>	redtop	G5	S5		L+?	X								
* <i>Bromus inermis</i> ssp. <i>inermis</i>	awnless brome	G4G5T?	SE5		L+	X		X						
* <i>Dactylis glomerata</i>	orchard grass	G?	SE5		L+	X	X				X			
<i>Danthonia spicata</i>	poverty oat grass	G5	S5		L4	X	X							
* <i>Digitaria sanguinalis</i>	large crabgrass	G5	SE5		L+	X								
* <i>Echinochloa crusgalli</i>	common barnyard grass	G?	SE5		L+	X								
* <i>Elymus repens</i>	quack grass	G?	SE5		L+	X								
<i>Glyceria striata</i>	fowl meadow grass	G5	S5		L5	X								
<i>Leersia oryzoides</i>	rice cut grass	G5	S5		L5	X								
* <i>Lolium perenne</i>	English rye grass	G?	SE4		L+	X		X						
<i>Panicum capillare</i>	witch grass	G5	S5		L5	X								
<i>Phalaris arundinacea</i>	reed canary grass	G5	S5		L+?	X		X			X			X
* <i>Phleum pratense</i>	timothy	G?	SE5		L+	X	X							

**TABLE D2.
VASCULAR PLANT LIST FOR FOREST COMMUNITIES AND ANSI**

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	BLO1	FOD4	FOD6-5a	FOD6-5b	FOD7-3	FOM3-2	FOM6-1	FOM7
<i>Phragmites australis</i>	common reed	G5	S5		L+?	X								
<i>Poa palustris</i>	fowl meadow grass	G5	S5		L5	X								
<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky bluegrass	G5T	S5		L+	X	X	X						
TYPHACEAE	CATTAIL FAMILY													
<i>Typha angustifolia</i>	narrow-leaved cattail	G5	S5		L+	X								
<i>Typha</i> sp.	cattail													
LILIACEAE	LILY FAMILY													
<i>Allium tricoccum</i>	wild leek	G5	S5		L3	X								X
* <i>Asparagus officinalis</i>	garden asparagus	G5?	SE5		L+	X								
<i>Trillium grandiflorum</i>	white trillium	G5	S5		L3	X				X				
IRIDACEAE	IRIS FAMILY													
<i>Iris</i> sp.								1						

*Introduced / X = Present / Refer to **Appendix E** for species rank definitions.

TABLE D3.
VASCULAR PLANT LIST FOR CULTURAL MEADOW, CULTURAL SAVANNAH, AND BEACH/BAR COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUM1-1k	CUP3	CUS1a	CUS1b	BBS1
* <i>Hypericum perforatum</i>	common St. John's-wort	G?	SE5		L+	X	X			X	X	X	X	X	X	X					
TILIACEAE	LINDEN FAMILY																				
<i>Tilia americana</i>	basswood	G5	S5		L5	X			X												
VIOLACEAE	VIOLET FAMILY																				
<i>Viola sororia</i>	common blue violet	G5	S5		L5	X															
CUCURBITACEAE	GOURD FAMILY																				
<i>Echinocystis lobata</i>	prickly cucumber	G5	S5		L5	X															
SALICACEAE	WILLOW FAMILY																				
* <i>Populus alba</i>	silver poplar	G5	SE5		L+	X										X					
<i>Populus balsamifera</i> ssp. <i>balsamifera</i>	balsam poplar	G5T?	S5		L5	X										X				X	
<i>Populus deltoides</i> ssp. <i>deltoides</i>	eastern cottonwood	G5T?	SU		L5					X											
<i>Populus grandidentata</i>	large-tooth aspen	G5	S5		L4	X												X	X		
<i>Populus tremuloides</i>	trembling aspen	G5	S5		L5	X									X	X			X	X	
* <i>Salix alba</i>	white willow	G5	SE4		L+	X	X	X	X			X		X	X						
<i>Salix discolor</i>	pussy willow	G5	S5		L4	X				X						X					
<i>Salix eriocephala</i>	Missouri willow	G5	S5		L5	X										X					X
<i>Salix exigua</i>	sandbar willow	G5	S5		L5	R5															X
* <i>Salix fragilis</i>	crack willow	G?	SE5		L+	X															
<i>Salix</i> sp.	willow		?													X					X

TABLE D3.
VASCULAR PLANT LIST FOR CULTURAL MEADOW, CULTURAL SAVANNAH, AND BEACH/BAR COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUM1-1k	CUP3	CUS1a	CUS1b	BBS1	
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	ciliate willow-herb	G5T?	S5		L5	X																
<i>Oenothera biennis</i>	common evening-primrose	G5	S5		L5	U						X			X					X		
CORNACEAE	DOGWOOD FAMILY																					
<i>Cornus alternifolia</i>	alternate-leaved dogwood	G5	S5		L5	X																
<i>Cornus racemosa</i>	red paniced dogwood	G5?	S5		L4	X																
<i>Cornus sericea</i> ssp. <i>sericea</i>	red-osier dogwood	G5	S5		L5	X		X		X						X					X	
CELASTRACEAE	STAFF-TREE FAMILY																					
<i>Euonymus obovata</i>	running strawberry-bush	G5	S5		L3	X																
EUPHORBIACEAE	SPURGE FAMILY																					
<i>Euphorbia corollata</i>	flowering spurge	G5	S4																			
RHAMNACEAE	BUCKTHORN FAMILY																					
* <i>Rhamnus cathartica</i>	common buckthorn	G?	SE5		L+	X				X			X	X	X	X		X	X	X		
VITACEAE	GRAPE FAMILY																					
<i>Parthenocissus vitacea</i>	inserted Virginia-creeper	G5	S5		L5	X					X		X				X			X	X	
<i>Vitis riparia</i>	riverbank grape	G5	S5		L5	X				X	X					X	X			X	X	
ACERACEAE	MAPLE FAMILY																					
<i>Acer negundo</i>	manitoba maple	G5	S5		L+?	X		X			X		X	X	X		X	X			X	

TABLE D3.
VASCULAR PLANT LIST FOR CULTURAL MEADOW, CULTURAL SAVANNAH, AND BEACH/BAR COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUM1-1k	CUP3	CUS1a	CUS1b	BBS1	
<i>Solidago nemoralis</i> var. <i>nemoralis</i>	gray goldenrod	G5T?	S5		L5											X						
<i>Solidago</i> sp.	goldenrod																					
* <i>Sonchus arvensis</i> ssp. <i>arvensis</i>	field sow-thistle	G?T?	SE5		L+	X				X						X					X	
<i>Symphyotrichum novae-angliae</i>	New England aster	G5	S5		L5	X	X			X		X		X	X	X						
* <i>Tanacetum vulgare</i>	common tansy	G?	SE5		L+	X		X														
* <i>Taraxacum officinale</i>	common dandelion	G5	SE5		L+	X	X		X		X	X	X	X		X			X			
* <i>Tussilago farfara</i>	coltsfoot	G?	SE5		L+	X										X						
JUNCACEAE	RUSH FAMILY																					
<i>Juncus dudleyi</i>	Dudley's rush	G5	S5		L5																	
<i>Juncus</i> sp.	rush																					
<i>Juncus tenuis</i>	path rush	G5	S5		L5	X										X						
CYPERACEAE	SEDGE FAMILY																					
<i>Carex deweyana</i>	Dewey's sedge	G5	S5		L4	X																
<i>Carex lacustris</i>	lake-bank sedge	G5	S5		L4	X																
<i>Carex pedunculata</i>	long-stalked sedge	G5	S5		L4	X															X	
<i>Carex pensylvanica</i>	Pennsylvania sedge	G5	S5		L4	X															X	
<i>Carex pseudo-cyperus</i>	cypress-like sedge	G5	S5		L4	X																
<i>Carex rosea</i>	stellate sedge	G5	S5		L5	X																
<i>Carex</i> sp.	sedge																X					
<i>Carex stipata</i>	awl-fruited sedge	G5	S5		L5	X										X						

TABLE D3.
VASCULAR PLANT LIST FOR CULTURAL MEADOW, CULTURAL SAVANNAH, AND BEACH/BAR COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	CUM1-1a	CUM1-1b	CUM1-1c	CUM1-1d	CUM1-1e	CUM1-1f	CUM1-1g	CUM1-1h	CUM1-1i	CUM1-1j	CUM1-1k	CUP3	CUS1a	CUS1b	BBS1	
TYPHACEAE	CATTAIL FAMILY																					
<i>Typha angustifolia</i>	narrow-leaved cattail	G5	S5		L+	X				X												
<i>Typha sp.</i>	cattail									X												
LILIACEAE	LILY FAMILY																					
<i>Allium tricoccum</i>	wild leek	G5	S5		L3	X																
* <i>Asparagus officinalis</i>	garden asparagus	G5?	SE5		L+	X										X						
<i>Trillium grandiflorum</i>	white trillium	G5	S5		L3	X																
IRIDACEAE	IRIS FAMILY																					
<i>Iris sp.</i>																						

*Introduced / X = Present / Refer to **Appendix E** for species rank definitions.

TABLE D4.
VASCULAR PLANT LIST FOR CULTURAL THICKET, CULTURAL WOODLAND AND MANICURED COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	CUM1-1/CUT1	CUT1/CUW1	CUT1a	CUT1b	CUT1c	CUT1d	CUT1e	CUT1f	CUT1g	CUT1h and i	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Manicured
EQUISETACEAE	HORSETAIL FAMILY																							
<i>Equisetum arvense</i>	field horsetail	G5	S5		L5	X														X				
<i>Equisetum pratense</i>	meadow horsetail	G5	S5		L3	R7																		
DRYOPTERIDACEAE	WOOD FERN FAMILY																							
<i>Dryopteris carthusiana</i>	spinulose wood fern	G5	S5		L5	X																		
<i>Matteuccia struthiopteris</i> var. <i>pennsylvanica</i>	ostrich fern	G5	S5		L5	X																		
<i>Onoclea sensibilis</i>	sensitive fern	G5	S5		L5	X																		
GINKGOACEAE	GINKGO FAMILY																							
* <i>Ginkgo biloba</i>	maiden-hair tree																							
PINACEAE	PINE FAMILY																							
* <i>Picea abies</i>	Norway spruce	G?	SE3		L+	X																		
<i>Picea glauca</i>	white spruce	G5	S5		L3	R3								X			X			X				
* <i>Picea pungens</i>	Colorado spruce	G5	SE1		L+													X						X
* <i>Pinus nigra</i>	Austrian pine	G?	SE2		L+																			
<i>Pinus strobus</i>	eastern white pine	G5	S5		L4	X									X	X	X							
* <i>Pinus sylvestris</i>	scotch pine	G?	SE5		L+	X									X									
<i>Tsuga canadensis</i>	eastern hemlock	G5	S5		L4	X													X					
CUPRESSACEAE	CEDAR FAMILY																							
<i>Juniperus virginiana</i>	eastern red cedar	G5	S5		L5										X									
<i>Thuja occidentalis</i>	eastern white cedar	G5	S5		L4	X									X					X	X	X		X

TABLE D4.
VASCULAR PLANT LIST FOR CULTURAL THICKET, CULTURAL WOODLAND AND MANICURED COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	CUM1-1/CUT1	CUT1/CUW1	CUT1a	CUT1b	CUT1c	CUT1d	CUT1e	CUT1f	CUT1g	CUT1h and i	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Manicured
* <i>Potentilla recta</i>	rough-fruited cinquefoil	G?	SE5		L+	X														X				
<i>Prunus serotina</i>	black cherry	G5	S5		L5	X									X				X					
<i>Prunus virginiana</i> var. <i>virginiana</i>	choke cherry	G5T?	S5		L5	X											X		X	X		X		
<i>Pryus</i> sp.	pear tree																X							
* <i>Rosa multiflora</i>	multiflora rose	G?	SE4		L+	X	X		X						X		X	X						
<i>Rosa</i> sp.	rose																							
* <i>Rubus idaeus</i> ssp. <i>idaeus</i>	red raspberry	G5T5	SE1												X		X	X						
<i>Rubus occidentalis</i>	thimble-berry	G5	S5		L5	X	X		X							X				X				
<i>Rubus odoratus</i>	purple flowering raspberry	G5	S5		L5	X														X	X			
<i>Rubus pubescens</i>	dwarf raspberry	G5	S5		L4	X																		
<i>Spiraea alba</i>	narrow-leaved meadow-sweet	G5	S5		L3	X																		
FABACEAE	PEA FAMILY																							
<i>Amphicarpaea bracteata</i>	hog peanut	G5	S5		L5	X																		
* <i>Coronilla varia</i>	variable crown-vetch	G?	SE5		L+	X																		
<i>Gleditsia triacanthos</i>	honey locust	G5	S2		L+	X																		X
* <i>Lotus corniculatus</i>	bird's-foot trefoil	G?	SE5		L+	X	X		X	X			X	X										X
* <i>Medicago lupulina</i>	black medick	G?	SE5		L+	X	X																	
* <i>Melilotus alba</i>	white sweet-clover	G?	SE5		L+	X	X	X																
* <i>Melilotus officinalis</i>	yellow sweet-clover	G?	SE5		L+	X		X																
* <i>Robinia pseudo-acacia</i>	black locust	G5	SE5		L+	X		X							X	X	X			X		X		

TABLE D4.
VASCULAR PLANT LIST FOR CULTURAL THICKET, CULTURAL WOODLAND AND MANICURED COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	CUMI-1/CUT1	CUT1/CUW1	CUT1a	CUT1b	CUT1c	CUT1d	CUT1e	CUT1f	CUT1g	CUT1h and i	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Manicured
* <i>Trifolium arvense</i>	rabbit-foot clover	G?	SE4		L+	X																		
* <i>Trifolium pratense</i>	red clover	G?	SE5		L+	X	X		X				X											X
* <i>Trifolium repens</i>	white clover	G?	SE5		L+	X																		X
* <i>Vicia cracca</i>	tufted vetch	G?	SE5		L+	X	X	X	X			X								X				
ELAEAGNACEAE	OLEASTER FAMILY																							
* <i>Elaeagnus angustifolia</i>	Russian olive	G?	SE3		L+	X										X								
* <i>Elaeagnus umbellata</i>	Autumn olive	G?	SE3		L+											X				X		X		
LYTHRACEAE	LOOSESTRIFE FAMILY																							
* <i>Lythrum salicaria</i>	purple loosestrife	G5	SE5		L+	X	X	X								X								
ONAGRACEAE	EVENING-PRIMROSE FAMILY																							
<i>Circaea lutetiana</i> ssp. <i>canadensis</i>	yellowish enchanter's nightshade	G5T5	S5		L5	X									X		X		X		X			
<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	ciliate willow-herb	G5T?	S5		L5	X																		
<i>Oenothera biennis</i>	common evening-primrose	G5	S5		L5	U																		
CORNACEAE	DOGWOOD FAMILY																							
<i>Cornus alternifolia</i>	alternate-leaved dogwood	G5	S5		L5	X																		
<i>Cornus racemosa</i>	red paniced dogwood	G5?	S5		L4	X																		
<i>Cornus sericea</i> ssp. <i>sericea</i>	red-osier dogwood	G5	S5		L5	X										X	X			X		X		

TABLE D4.
VASCULAR PLANT LIST FOR CULTURAL THICKET, CULTURAL WOODLAND AND MANICURED COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	CUM1-1/CUT1	CUT1/CUW1	CUT1a	CUT1b	CUT1c	CUT1d	CUT1e	CUT1f	CUT1g	CUT1h and i	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Manicured
CELASTRACEAE	STAFF-TREE FAMILY																							
<i>Euonymus obovata</i>	running strawberry-bush	G5	S5		L3	X																		
EUPHORBIACEAE	SPURGE FAMILY																							
<i>Euphorbia corollata</i>	flowering spurge	G5	S4					X																
RHAMNACEAE	BUCKTHORN FAMILY																							
* <i>Rhamnus cathartica</i>	common buckthorn	G?	SE5		L+	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
VITACEAE	GRAPE FAMILY																							
<i>Parthenocissus vitacea</i>	inserted Virginia-creeper	G5	S5		L5	X					X	X	X		X		X	X	X		X			
<i>Vitis riparia</i>	riverbank grape	G5	S5		L5	X		X		X	X	X	X		X	X	X	X		X	X	X	X	
ACERACEAE	MAPLE FAMILY																							
<i>Acer negundo</i>	manitoba maple	G5	S5		L+?	X	X	X		X	X	X	X		X	X	X		X	X	X			
<i>Acer nigrum</i>	black maple	G5Q	S4?		L4	X												X						
* <i>Acer platanoides</i>	norway maple	G?	SE5		L+	X																		X
<i>Acer rubrum</i>	red maple	G5	S5		L4	X											X							
<i>Acer saccharinum</i>	silver maple	G5	S5		L4	X																		
<i>Acer saccharum</i> var. <i>saccharum</i>	sugar maple	G5T?	S5		L5	X	X							X	X		X		X	X		X		
<i>Acer X freemanii</i>	freeman's maple				LH	XS R																		
ANACARDIACEAE	SUMAC FAMILY																							
<i>Rhus hirta</i>	staghorn sumac	G5	S5		L5	X		X																
<i>Toxicodendron radicans</i> ssp.	poison-ivy	G5T	S5		L4	X									X						X			

TABLE D4.
VASCULAR PLANT LIST FOR CULTURAL THICKET, CULTURAL WOODLAND AND MANICURED COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MNR	TRCA	Peel - Varga	CUM1-1/CUT1	CUT1/CUW1	CUT1a	CUT1b	CUT1c	CUT1d	CUT1e	CUT1f	CUT1g	CUT1h and i	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Manicured
* <i>Achillea millefolium</i> var. <i>millefolium</i>	common yarrow	G5T?	SE?		L+	X			X				X											X
<i>Ageratina altissima</i> var. <i>altissima</i>	white snakeroot	G5	S5		L5	X																		
<i>Ambrosia artemisiifolia</i>	common ragweed	G5	S5		L5	X			X															
<i>Ambrosia trifida</i>	giant ragweed	G5	S5		L5	X																		
* <i>Arctium lappa</i>	great burdock	G?	SE5		L+	X	X		X			X	X											
* <i>Arctium minus</i>	common burdock	G?T?	SE5		L+	X											X							
* <i>Artemisia biennis</i>	biennial wormwood	G5	SE5		L+	X																		
<i>Symphyotrichum lanceolatum</i>	tall white aster	G5T?	S5		L5	X																		
<i>Symphyotrichum lateriflorum</i>	calico aster	G5T5	S5				X																	
<i>Symphyotrichum puniceum</i>	purple-stemmed aster	G5T?	S5		L5																			
<i>Aster</i> sp.	aster																							
<i>Bidens frondosa</i>	devil's beggar-ticks	G5	S5		L5	X											X				X			
* <i>Cichorium intybus</i>	chicory	G?	SE5		L+	X		X												X				X
* <i>Cirsium arvense</i>	Canada thistle	G?	SE5		L+	X	X	X	X			X	X	X					X		X			
* <i>Cirsium vulgare</i>	bull thistle	G5	SE5		L+	X			X								X							
<i>Erigeron annuus</i>	daisy fleabane	G5	S5		L5	X			X			X					X					X		
<i>Erigeron philadelphicus</i> var. <i>philadelphicus</i>	Philadelphia fleabane	G5T?	S5		L5	X																		
<i>Eupatorium maculatum</i> var. <i>maculatum</i>	spotted joe-pye-weed	G5T5	S5		L5	X																		
<i>Euthamia graminifolia</i>	flat-topped bushy goldenrod	G5	S5			X										X				X				

TABLE D4.
VASCULAR PLANT LIST FOR CULTURAL THICKET, CULTURAL WOODLAND AND MANICURED COMMUNITIES

Scientific Name	Common Name	GRank	SRank	MINR	TRCA	Peel - Varga	CUM1-1/CUT1	CUT1/CUW1	CUT1a	CUT1b	CUT1c	CUT1d	CUT1e	CUT1f	CUT1g	CUT1h and i	CUW1a	CUW1b	CUW1c	CUW1d	CUW1e	CUW1f	CUW1g	Manicured
* <i>Lolium perenne</i>	English rye grass	G?	SE4		L+	X																		
<i>Panicum capillare</i>	witch grass	G5	S5		L5	X																		
<i>Phalaris arundinacea</i>	reed canary grass	G5	S5		L+ ?	X	X	X				X				X	X	X		X	X			X
* <i>Phleum pratense</i>	timothy	G?	SE5		L+	X	X		X															
<i>Phragmites australis</i>	common reed	G5	S5		L+ ?	X		X																
<i>Poa palustris</i>	fowl meadow grass	G5	S5		L5	X																		
<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky bluegrass	G5T	S5		L+	X		X	X	X				X	X	X				X	X	X		X
TYPHACEAE	CATTAIL FAMILY																							
<i>Typha angustifolia</i>	narrow-leaved cattail	G5	S5		L4	X		X									X							
<i>Typha latifolia</i>	broad-leaved cattail	G5	S5		L+	X																		
<i>Typha</i> sp.	cattail																							
LILIACEAE	LILY FAMILY																							
<i>Allium tricoccum</i>	wild leek	G5	S5		L3	X																		
* <i>Asparagus officinalis</i>	garden asparagus	G5?	SE5		L+	X																		
<i>Trillium grandiflorum</i>	white trillium	G5	S5		L3	X																		
IRIDACEAE	IRIS FAMILY																							
<i>Iris</i> sp.																								

*Introduced / X = Present / Refer to **Appendix E** for species rank definitions.

APPENDIX E.
ACRONYMS AND DEFINITIONS USED IN SPECIES
LISTS

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.
CORRESPONDENCE WITH MNRF, TRCA and CVC

See Appendix A in the Environmental Project Report

APPENDIX G.
TRCA DATA SUMMARY OF FAUNA PREVIOUSLY
RECORDED IN/NEAR THE STUDY AREA

APPENDIX G.
TRCA DATA SUMMARY OF FAUNA PREVIOUSLY RECORDED IN/NEAR THE STUDY AREA

Scientific Name	Common Name	TRCA Rank
<i>Falco sparverius</i>	American kestrel	L4
<i>Setophaga ruticilla</i>	American redstart	L3
<i>Anaxyrus americanus</i>	American toad	L4
<i>Scolopax minor</i>	American woodcock	L3
<i>Riparia riparia</i>	bank swallow	L3
<i>Hirundo rustica</i>	barn swallow	L4
<i>Castor canadensis</i>	beaver	L4
<i>Ceryle alcyon</i>	belted kingfisher	L4
<i>Coccyzus erythrophthalmus</i>	black-billed cuckoo	L3
<i>Poliophtila caerulea</i>	blue-grey gnatcatcher	L4
<i>Dolichonyx oryzivorus</i>	bobolink	L2
<i>Chaetura pelagica</i>	chimney swift	L4
<i>Petrochelidon pyrrhonota</i>	cliff swallow	L5
<i>Chelydra serpentina serpentina</i>	common snapping turtle	L2
<i>Geothlypis trichas</i>	common yellowthroat	L4
<i>Accipiter cooperii</i>	Cooper's hawk	L4
<i>Storeria dekayi</i>	Dekay's brownsnake	L4
<i>Tamias striatus</i>	eastern chipmunk	L4
<i>Sylvilagus floridanus</i>	eastern cottontail	L4
<i>Thamnophis sirtalis sirtalis</i>	eastern gartersnake	L4
<i>Tyrannus tyrannus</i>	eastern kingbird	L4
<i>Sturnella magna</i>	eastern meadowlark	L3
<i>Sayornis phoebe</i>	eastern phoebe	L5
<i>Plethodon cinereus</i>	eastern red-backed salamander	L3
<i>Otus asio</i>	eastern screech-owl	L4
<i>Contopus virens</i>	eastern wood-pewee	L4
<i>Spizella pusilla</i>	field sparrow	L4
<i>Myiarchus crinitus</i>	great crested flycatcher	L4
<i>Lithobates clamitans</i>	green frog	L4
<i>Dumetella carolinensis</i>	grey catbird	L4
<i>Picoides villosus</i>	hairy woodpecker	L4
<i>Setophaga citrina</i>	hooded warbler	L2
<i>Eremophila alpestris</i>	horned lark	L3
<i>Passerina cyanea</i>	indigo bunting	L4
<i>Empidonax minimus</i>	least flycatcher	L3
<i>Mustela vison</i>	mink	L4
<i>Geothlypis philadelphia</i>	mourning warbler	L3
<i>Ondatra zibethicus</i>	muskrat	L4
<i>Colaptes auratus</i>	northern flicker	L4
<i>Mimus polyglottos</i>	northern mockingbird	L5
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	L4
<i>Icterus spurius</i>	orchard oriole	L5
<i>Vireo olivaceus</i>	red-eyed vireo	L4
<i>Pheucticus ludovicianus</i>	rose-breasted grosbeak	L4

APPENDIX G.
TRCA DATA SUMMARY OF FAUNA PREVIOUSLY RECORDED IN/NEAR THE STUDY AREA

Scientific Name	Common Name	TRCA Rank
<i>Passerculus sandwichensis</i>	savannah sparrow	L4
<i>Actitis macularia</i>	spotted sandpiper	L4
<i>Melospiza georgiana</i>	swamp sparrow	L4
<i>Tachycineta bicolor</i>	tree swallow	L4
<i>Pseudacris triseriata</i>	western chorus frog	L2
<i>Sitta carolinensis</i>	white-breasted nuthatch	L4
<i>Odocoileus virginianus</i>	white-tailed deer	L4
<i>Meleagris gallopavo</i>	wild turkey	L3
<i>Empidonax traillii</i>	willow flycatcher	L4
<i>Aix sponsa</i>	wood duck	L4
<i>Lithobates sylvatica</i>	wood frog	L2
<i>Hylocichla mustelina</i>	wood thrush	L3
<i>Marmota monax</i>	woodchuck	L5

**APPENDIX H.
BREEDING BIRD ATLAS DATA**

APPENDIX H.
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 H.
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 H.
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 H.
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 H.
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 H.
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 H.
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 ATLAS DATA - SQUARE: 17PJ04 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ04	Canada Goose	NE	CONF	1	Roy Smith	3	5.77	1.5	1
12	17PJ04	Wood Duck	D	PROB	1	Alfred Raab				
12	17PJ04	Mallard	FY	CONF	1	3 atlassers	3	5.77	0.1731	1
12	17PJ04	Hooded Merganser	P	PROB	1	Dian Bogie				
12	17PJ04	Ring-necked Pheasant	H	POSS	1	Glenn Coady	1	1.92	0.0192	1
12	17PJ04	Ruffed Grouse	T	PROB	1	Alfred Raab				
12	17PJ04	Wild Turkey	H	POSS	1	Glenn Coady				
12	17PJ04	Great Blue Heron	H	POSS	1	Dian Bogie				
12	17PJ04	Green Heron	A	PROB	1					
12	17PJ04	Turkey Vulture	H	POSS	1	Glenn Coady	1	1.92	0.0192	1
12	17PJ04	Northern Harrier	H	POSS	1	Glenn Coady	2	3.85	0.0385	1
12	17PJ04	Sharp-shinned Hawk	T	PROB	1	Alfred Raab				
12	17PJ04	Cooper's Hawk	FY	CONF	1	Glenn Coady				
12	17PJ04	Red-tailed Hawk	NY	CONF	1	Alfred Raab	7	13.46	0.1346	1
12	17PJ04	American Kestrel	FY	CONF	1	Glenn Coady	1	1.92	0.0192	1
12	17PJ04	Sora	S	POSS	1	Glenn Coady				

**APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ04 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ04	Killdeer	NE	CONF	1		8	15.38	0.1538	1
12	17PJ04	Rock Pigeon	NY	CONF	1	Glenn Coady	15	28.85	1.3077	1
12	17PJ04	Spotted Sandpiper	FY	CONF	1	2 atlassers	1	1.92	0.0192	1
12	17PJ04	Common Snipe	S	POSS	1					
12	17PJ04	American Woodcock	D	PROB	1	Alfred Raab				
12	17PJ04	Mourning Dove	NE	CONF	1	2 atlassers	34	65.38	1.4231	1
12	17PJ04	Yellow-billed Cuckoo	FY	CONF	1					
12	17PJ04	Black-billed Cuckoo	CF	CONF	1	Glenn Coady				
12	17PJ04	Eastern Screech-Owl	FY	CONF	1	Glenn Coady				
12	17PJ04	Great Horned Owl	NY	CONF	1					
12	17PJ04	Long-eared Owl	FY	CONF	1	Alfred Raab				
12	17PJ04	Common Nighthawk	S	POSS	1	2 atlassers				
12	17PJ04	Chimney Swift	T	PROB	1	Alfred Raab	1	1.92	0.0385	1

**APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ04 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ04	Ruby-throated Hummingbird	H	POSS	1	2 atlassers				
12	17PJ04	Belted Kingfisher	CF	CONF	1	2 atlassers	1	1.92	0.0192	1
12	17PJ04	Yellow-bellied Sapsucker	P	PROB	1	Dian Bogie				
12	17PJ04	Downy Woodpecker	CF	CONF	1	Alfred Raab	6	11.54	0.1346	1
12	17PJ04	Hairy Woodpecker	NY	CONF	1	Glenn Coady	1	1.92	0.0192	1
12	17PJ04	Northern Flicker	NY	CONF	1	Alfred Raab	7	13.46	0.1346	1
12	17PJ04	Pileated Woodpecker	AE	CONF	1	Roy Smith				
12	17PJ04	Eastern Wood-Pewee	CF	CONF	1	Glenn Coady	1	1.92	0.0192	1
12	17PJ04	Alder Flycatcher	P	PROB	1	Dian Bogie				
12	17PJ04	Willow Flycatcher	CF	CONF	1	Alfred Raab				
12	17PJ04	Least Flycatcher	T	PROB	1	Alfred Raab				
12	17PJ04	Eastern Phoebe	CF	CONF	1	Glenn Coady	2	3.85	0.0385	1
12	17PJ04	Great Crested Flycatcher	CF	CONF	1	Glenn Coady	1	1.92	0.0192	1

**APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ04 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ04	Eastern Kingbird	NY	CONF	1	2 atlassers	6	11.54	0.1346	1
12	17PJ04	Blue-headed Vireo	S	POSS	1	Glenn Coady				
12	17PJ04	Warbling Vireo	FY	CONF	1	Glenn Coady	1	1.92	0.0192	1
12	17PJ04	Red-eyed Vireo	CF	CONF	1	Alfred Raab	4	7.69	0.0769	1
12	17PJ04	Blue Jay	NY	CONF	1	Alfred Raab	13	25	0.4231	1
12	17PJ04	American Crow	FY	CONF	1	Dian Bogie	21	40.38	0.6346	1
12	17PJ04	Horned Lark	NY	CONF	1	Roy Smith				
12	17PJ04	Purple Martin	H	POSS	1	Glenn Coady				
12	17PJ04	Tree Swallow	NY	CONF	1	Dian Bogie	6	11.54	0.2308	1
12	17PJ04	Northern Rough-winged Swallow	NB	CONF	1	2 atlassers				
12	17PJ04	Bank Swallow	AE	CONF	1	Alfred Raab				
12	17PJ04	Cliff Swallow	AE	CONF	1	Alfred Raab	1	1.92	0.0192	1
12	17PJ04	Barn Swallow	AE	CONF	1	Glenn Coady	8	15.38	0.2115	1
12	17PJ04	Black-capped Chickadee	CF	CONF	1	Alfred Raab	12	23.08	0.3462	1

**APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ04 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ04	Red-breasted Nuthatch	AE	CONF	1	Glenn Coady	1	1.92	0.0192	1
12	17PJ04	White-breasted Nuthatch	CF	CONF	1	Glenn Coady	2	3.85	0.0385	1
12	17PJ04	Brown Creeper	T	PROB	1					
12	17PJ04	House Wren	AE	CONF	1	2 atlassers	3	5.77	0.0577	1
12	17PJ04	Winter Wren	S	POSS	1	Glenn Coady				
12	17PJ04	Sedge Wren	A	PROB	1					
12	17PJ04	Golden-crowned Kinglet	H	POSS	1	Glenn Coady				
12	17PJ04	Blue-gray Gnatcatcher	NY	CONF	1		1	1.92	0.0192	1
12	17PJ04	Veery	CF	CONF	1	Glenn Coady	1	1.92	0.0192	1
12	17PJ04	Wood Thrush	CF	CONF	1	2 atlassers	1	1.92	0.0192	1
12	17PJ04	American Robin	NY	CONF	1	Alfred Raab	43	82.69	1.5962	1
12	17PJ04	Gray Catbird	CF	CONF	1	Glenn Coady	2	3.85	0.0385	1
12	17PJ04	Northern Mockingbird	NY	CONF	1	3 atlassers	1	1.92	0.0192	1
12	17PJ04	Brown Thrasher	CF	CONF	1	Glenn Coady	3	5.77	0.0577	1
12	17PJ04	European Starling	CF	CONF	1	Winnie Poon	42	80.77	4.6538	1

**APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ04 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ04	Cedar Waxwing	CF	CONF	1	Alfred Raab	12	23.08	0.5769	1
12	17PJ04	Nashville Warbler	S	POSS	1	Glenn Coady				
12	17PJ04	Yellow Warbler	NY	CONF	1		2	3.85	0.0769	1
12	17PJ04	Chestnut-sided Warbler	S	POSS	1	Glenn Coady				
12	17PJ04	Pine Warbler	T	PROB	1	Glenn Coady				
12	17PJ04	American Redstart	CF	CONF	1	Glenn Coady	1	1.92	0.0192	1
12	17PJ04	Ovenbird	T	PROB	1	Alfred Raab				
12	17PJ04	Mourning Warbler	CF	CONF	1	Glenn Coady				
12	17PJ04	Common Yellowthroat	CF	CONF	1	Glenn Coady				
12	17PJ04	Hooded Warbler	S	POSS	1	Alfred Raab				
12	17PJ04	Eastern Towhee	CF	CONF	1	Glenn Coady				
12	17PJ04	Chipping Sparrow	FY	CONF	1	Glenn Coady	5	9.62	0.0962	1
12	17PJ04	Clay-colored Sparrow	FY	CONF	1					
12	17PJ04	Field Sparrow	NY	CONF	1	Alfred Raab				
12	17PJ04	Vesper Sparrow	T	PROB	1	Alfred Raab				

APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ04 REGION:12

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ04	Savannah Sparrow	NY	CONF	1	Alfred Raab	10	19.23	0.3846	1
12	17PJ04	Grasshopper Sparrow	S	POSS	1	Dian Bogie				
12	17PJ04	Song Sparrow	CF	CONF	1	2 atlassers	26	50	0.7692	1
12	17PJ04	Swamp Sparrow	T	PROB	1	Alfred Raab				
12	17PJ04	White-throated Sparrow	P	PROB	1	Dian Bogie				
12	17PJ04	Scarlet Tanager	S	POSS	1	Alfred Raab				
12	17PJ04	Northern Cardinal	NY	CONF	1		14	26.92	0.4038	1
12	17PJ04	Rose-breasted Grosbeak	CF	CONF	1	2 atlassers	2	3.85	0.0385	1
12	17PJ04	Indigo Bunting	CF	CONF	1	Glenn Coady	2	3.85	0.0385	1
12	17PJ04	Bobolink	CF	CONF	1	Alfred Raab	1	1.92	0.0192	1
12	17PJ04	Red-winged Blackbird	NE	CONF	1		29	55.77	1.7308	1
12	17PJ04	Eastern Meadowlark	CF	CONF	1	2 atlassers	3	5.77	0.0769	1
12	17PJ04	Common Grackle	NY	CONF	1	Roy Smith	38	73.08	1.4231	1
12	17PJ04	Brown-headed Cowbird	FY	CONF	1	2 atlassers	13	25	0.4231	1
12	17PJ04	Orchard Oriole	CF	CONF	1	Alfred Raab				
12	17PJ04	Baltimore Oriole	AE	CONF	1	2 atlassers	10	19.23	0.2308	1
12	17PJ04	Purple Finch	S	POSS	1	Glenn Coady				

APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ04 REGION:12

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ04	House Finch	FY	CONF	1	3 atlassers	15	28.85	0.4615	1
12	17PJ04	American Goldfinch	NY	CONF	1	Alfred Raab	16	30.77	0.5192	1
12	17PJ04	House Sparrow	NY	CONF	1		29	55.77	2.0577	1

**APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ14 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ14	Canada Goose	NE	CONF	1	Winnie Poon	2	3.92	0.137	1
12	17PJ14	Wood Duck	FY	CONF	1	3 atlassers				
12	17PJ14	American Black Duck	FY	CONF	1	Glenn Coady				
12	17PJ14	Mallard	FY	CONF	1	2 atlassers				
12	17PJ14	Hooded Merganser	H	POSS	1	Glenn Coady				
12	17PJ14	Ring-necked Pheasant	FY	CONF	1	Sandra Eadie	1	1.96	0.02	1
12	17PJ14	Green Heron	FY	CONF	1					
12	17PJ14	Turkey Vulture	H	POSS	1	2 atlassers				
12	17PJ14	Northern Harrier	H	POSS	1	Glenn Coady				
12	17PJ14	Sharp-shinned Hawk	H	POSS	1	2 atlassers	1	1.96	0.02	1
12	17PJ14	Cooper's Hawk	D	PROB	1	Glenn Coady				
12	17PJ14	Red-tailed Hawk	NY	CONF	1	Glenn Coady	9	17.7	0.196	1
12	17PJ14	American Kestrel	FY	CONF	1	2 atlassers	2	3.92	0.039	1
12	17PJ14	Virginia Rail	S	POSS	1					
12	17PJ14	Sora	H	POSS	1	Glenn Coady				
12	17PJ14	Killdeer	NE	CONF	1	Roy Smith	6	11.8	0.177	1

APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ14 REGION:12

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ14	Rock Pigeon	NY	CONF	1	Fergus I Nicoll	23	45.1	1.922	1
12	17PJ14	Spotted Sandpiper	FY	CONF	1	2 atlassers	1	1.96	0.02	1
12	17PJ14	American Woodcock	S	POSS	1	Glenn Coady				
12	17PJ14	Ring-billed Gull	FY	CONF	1	Jean Iron	21	41.2	1.588	1
12	17PJ14	Mourning Dove	AE	CONF	1		32	62.8	1.471	1
12	17PJ14	Yellow-billed Cuckoo	S	POSS	1	Glenn Coady				
12	17PJ14	Black-billed Cuckoo	T	PROB	1					
12	17PJ14	Eastern Screech-Owl	FY	CONF	1					
12	17PJ14	Great Horned Owl	AE	CONF	1	Glenn Coady				
12	17PJ14	Common Nighthawk	T	PROB	1	Glenn Coady				
12	17PJ14	Chimney Swift	T	PROB	1	Sandra Eadie				
12	17PJ14	Ruby-throated Hummingbird	H	POSS	1	2 atlassers				
12	17PJ14	Belted Kingfisher	CF	CONF	1	Sandra Eadie				

**APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ14 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ14	Yellow-bellied Sapsucker	H	POSS	1	Glenn Coady				
12	17PJ14	Downy Woodpecker	FY	CONF	1	Sandra Eadie	11	21.6	0.255	1
12	17PJ14	Hairy Woodpecker	FY	CONF	1	Glenn Coady	1	1.96	0.02	1
12	17PJ14	Northern Flicker	FY	CONF	1	2 atlassers	11	21.6	0.235	1
12	17PJ14	Pileated Woodpecker	H	POSS	1	Glenn Coady				
12	17PJ14	Eastern Wood-Pewee	AE	CONF	1	Sandra Eadie				
12	17PJ14	Alder Flycatcher	S	POSS	1	Glenn Coady				
12	17PJ14	Willow Flycatcher	CF	CONF	1	Sandra Eadie	1	1.96	0.02	1
12	17PJ14	Least Flycatcher	S	POSS	1	3 atlassers	1	1.96	0.02	1
12	17PJ14	Eastern Phoebe	FS	CONF	1	Jean Iron				
12	17PJ14	Great Crested Flycatcher	CF	CONF	1	Glenn Coady	4	7.84	0.078	1
12	17PJ14	Eastern Kingbird	NY	CONF	1	2 atlassers	5	9.8	0.118	1
12	17PJ14	Warbling Vireo	CF	CONF	1	Glenn Coady	6	11.8	0.118	1

**APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ14 REGION:12**

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ14	Red-eyed Vireo	CF	CONF	1	Glenn Coady	2	3.92	0.039	1
12	17PJ14	Blue Jay	FY	CONF	1	Glenn Coady	9	17.7	0.255	1
12	17PJ14	American Crow	CF	CONF	1	Sandra Eadie	12	23.5	0.314	1
12	17PJ14	Horned Lark	H	POSS	1	Glenn Coady				
12	17PJ14	Purple Martin	H	POSS	1	Glenn Coady				
12	17PJ14	Tree Swallow	AE	CONF	1	Sandra Eadie	2	3.92	0.059	1
12	17PJ14	Northern Rough-winged Swallow	AE	CONF	1	Sandra Eadie	1	1.96	0.02	1
12	17PJ14	Bank Swallow	FS	CONF	1	Sandra Eadie				
12	17PJ14	Cliff Swallow	NY	CONF	1	Sandra Eadie				
12	17PJ14	Barn Swallow	NY	CONF	1	Sandra Eadie	3	5.88	0.059	1
12	17PJ14	Black-capped Chickadee	CF	CONF	1	Sandra Eadie	15	29.4	0.392	1
12	17PJ14	Red-breasted Nuthatch	CF	CONF	1	Sandra Eadie	7	13.7	0.157	1
12	17PJ14	White-breasted Nuthatch	FY	CONF	1	3 atlassers	4	7.84	0.078	1
12	17PJ14	Carolina Wren	S	POSS	1	Glenn Coady				

APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ14 REGION:12

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ14	House Wren	CF	CONF	1	2 atlassers	5	9.8	0.098	1
12	17PJ14	Blue-gray Gnatcatcher	CF	CONF	1	Sandra Eadie				
12	17PJ14	Veery	H	POSS	1	2 atlassers				
12	17PJ14	Wood Thrush	NY	CONF	1	Glenn Coady	1	1.96	0.02	1
12	17PJ14	American Robin	NE	CONF	1		45	88.2	2.235	1
12	17PJ14	Gray Catbird	CF	CONF	1	2 atlassers	9	17.7	0.196	1
12	17PJ14	Northern Mockingbird	NY	CONF	1	Roy Smith	5	9.8	0.098	1
12	17PJ14	Brown Thrasher	FY	CONF	1	Glenn Coady	1	1.96	0.02	1
12	17PJ14	European Starling	NY	CONF	1	Roy Smith	42	82.4	7.628	1
12	17PJ14	Cedar Waxwing	CF	CONF	1	Sandra Eadie	2	3.92	0.059	1
12	17PJ14	Nashville Warbler	S	POSS	1	Glenn Coady				
12	17PJ14	Yellow Warbler	CF	CONF	1	2 atlassers	3	5.88	0.059	1
12	17PJ14	Pine Warbler	T	PROB	1	Glenn Coady				
12	17PJ14	American Redstart	T	PROB	1	Glenn Coady				
12	17PJ14	Mourning Warbler	CF	CONF	1	Glenn Coady				

APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ14 REGION:12

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ14	Common Yellowthroat	T	PROB	1					
12	17PJ14	Eastern Towhee	S	POSS	1	Glenn Coady				
12	17PJ14	Chipping Sparrow	CF	CONF	1	Sandra Eadie	11	21.6	0.294	1
12	17PJ14	Field Sparrow	S	POSS	1	Glenn Coady	1	1.96	0.02	1
12	17PJ14	Savannah Sparrow	CF	CONF	1	3 atlassers	2	3.92	0.059	1
12	17PJ14	Song Sparrow	CF	CONF	1	2 atlassers	17	33.3	0.412	1
12	17PJ14	Swamp Sparrow	S	POSS	1					
12	17PJ14	White-throated Sparrow	T	PROB	1	Alfred Raab				
12	17PJ14	Northern Cardinal	CF	CONF	1	2 atlassers	26	51	0.706	1
12	17PJ14	Rose-breasted Grosbeak	FY	CONF	1	Jean Iron	1	1.96	0.02	1
12	17PJ14	Indigo Bunting	FY	CONF	1	Glenn Coady	2	3.92	0.039	1
12	17PJ14	Bobolink	CF	CONF	1	Glenn Coady	2	3.92	0.039	1
12	17PJ14	Red-winged Blackbird	CF	CONF	1	2 atlassers	23	45.1	0.765	1
12	17PJ14	Eastern Meadowlark	FY	CONF	1	Glenn Coady	2	3.92	0.039	1
12	17PJ14	Common Grackle	CF	CONF	1	2 atlassers	47	92.2	2.118	1

APPENDIX H.
BREEDING BIRD ATLAS DATA - SQUARE: 17PJ14 REGION:12

Region	Square	Species	Breeding Evidence				Point Counts			
			Max BE	Category	#Sq	Atlasser Name	#PC	%PC	Abun	#Sq
12	17PJ14	Brown-headed Cowbird	FY	CONF	1	2 atlassers	11	21.6	0.314	1
12	17PJ14	Orchard Oriole	T	PROB	1	Roy Smith				
12	17PJ14	Baltimore Oriole	CF	CONF	1	Sandra Eadie	16	31.4	0.373	1
12	17PJ14	House Finch	CF	CONF	1	Sandra Eadie	19	37.3	0.804	1
12	17PJ14	American Goldfinch	CF	CONF	1	Glenn Coady	17	33.3	0.471	1
12	17PJ14	House Sparrow	NY	CONF	1	Sandra Eadie	37	72.6	3.49	1

APPENDIX I.
ENVIRONMENTAL REFERENCE FOR HIGHWAY
DESIGN CHECKLISTS FOR TERRESTRIAL
ECOSYSTEMS



**Section
5**

MINISTRY OF TRANSPORTATION

**APPENDIX 5.A
Checklist for Wildlife
Habitats and Movements**

Environmental Standards and Practices User Guide

Version: December 2006

VERSION HISTORY

VERSION #	DATE	DESCRIPTION OF MAJOR CHANGE

The intent of this checklist is to allow project participants (MTO staff, consultants, Regulatory Agencies and the public) to review project environmental assessment process documentation to ensure that all potential impacts have been identified and adequately addressed. The checklist includes sections on both general project activities and compliance.

The general project activities are actions taken during transportation project design to assess and avoid / mitigate impacts. It is based on the requirements of MTO's *Environmental Reference for Highway Design*.

For compliance, the checklist includes summaries of the applicable Environmental Protection Requirements. The letters and number, for example VEG-2, are the reference to a specific Environmental Protection Requirement in MTO's *Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, and Operation and Maintenance*. Please refer to that document for a complete list and wording of the Environmental Protection Requirements.

To complete the checklist:

1. Review the project activity or compliance requirement.
2. Determine if it applies to the project (yes or no) and complete the "applies" column.
3. If, it applies, then check the document in which the project activity or compliance requirement has been documented.
4. If the project activity or compliance requirement applies but will be addressed / documented in the future, then check the "Future Commitment" column.

Project Activity or Compliance Requirement		Applies (Y/N)	Documented in:					Future Commitment¹
			Planning Documents	Terrestrial Ecosystems Report	TESR²	DCR³	Contract	
PROJECT SCOPE								
	1. Was the Terrestrial Ecosystems (and/or wildlife in particular) Speciality identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	2. Was wildlife identified during the course of the project?	Y	N/A	√	N/A	N/A	N/A	N/A
GENERAL PROJECT ACTIVITIES								
Assessment								
Background Data and Field Investigations	3. Have the following been determined and mapped:	Y		√				
	(a) Wildlife habitat including significant wildlife habitat areas?	Y		√				
	(b) Wildlife species including species of conservation concern?	Y		√				
	(c) Wildlife species and use of the area including migratory, over-wintering and nesting species?	Y		√				
Determination of Significance	4. Has the significance and the sensitivity to disturbance of the following been determined:	Y		√				
	(a) Wildlife and natural corridors?	Y		√				
	(b) Significant wildlife habitat?	Y		√				
Assessment of Impacts	5. Has loss of wildlife habitat been considered?	Y		√				
	6. Has obstructing wildlife movement been considered?	Y		√				

¹ A commitment has been made to address in subsequent stages of the transportation project (e.g., a commitment in the Preliminary Design stage to develop detailed mitigation in the Detail Design stage)

² Transportation Environmental Study Report including amendments

³ Design Construction Report including amendments

Project Activity or Compliance Requirement		Applies (Y/N)	Documented in:					Future Commitment¹
			Planning Documents	Terrestrial Ecosystems Report	TESR²	DCR³	Contract	
	7. Has wildlife mortality and/or interference during transportation project construction and operation been considered?	Y		√				
	8. Have noteworthy species and habitats (including Species at Risk) been considered?	Y		√				
	9. Have the potential permanent and temporary impacts been assessed in terms of:	Y		√				
	(a) Highway design alternatives?	Y		√				
	(b) Alternative methods of construction?	N						
	(c) Highway operation/maintenance?	N						
	13. Is the information collected adequate to enable the identification of resources/issues for the Valued Ecosystem Component criteria under CEAA?	Y		√				
Environmental Protection / Mitigation								
	14. Has a preliminary mitigation strategy been completed?	Y		√				
	15. Has a detailed mitigation strategy been completed?	Y						√

Project Activity or Compliance Requirement		Applies (Y/N)	Documented in:					Future Commitment ¹
			Planning Documents	Terrestrial Ecosystems Report	TESR ²	DCR ³	Contract	
COMPLIANCE								
Environmental Protection Requirements⁴								
WLD-2	16. The destruction of migratory birds, their eggs or their nests is not permitted.	Y		√				
WLD-2	17. Minimize the release of oil, oil wastes or any other substance harmful to migratory birds to any waters or any area frequented by migratory birds.	N						
WLD-3	18. Impacts on lands that provide critical habitat for listed migratory and aquatic species under the federal Species At Risk Act shall be avoided.	Y		√				
WLD-4	19. Avoid habitat for species designated by regulation under the Ontario Endangered Species Act.	Y		√				
WLD-5	20. Avoid, or if avoidance is not possible, minimize encroachment on significant portions of the habitat of threatened and endangered species.	Y		√				
WLD-6	21. Protect other wildlife species identified in the schedules in the Fish and Wildlife Conservation Act.	Y		√				
WLD-7	22. Avoid, or if avoidance is not possible, have no negative impacts on significant wildlife habitat, as defined in the Significant Wildlife Habitat Technical Guide.	Y		√				
WLD-8	23. Maintain the diversity of wildlife habitat in an area and natural connections between them.	Y		√				

⁴ Unless otherwise stated (e.g., by terms such as “shall”, “is not permitted”), the Environmental Protection Requirements (EPRs) are “as feasible” or “unless approved through the Environmental Assessment process”. This is in recognition that transportation facilities cannot avoid all impacts and that some ERPs may not be feasible in every situation.

Project Activity or Compliance Requirement		Applies (Y/N)	Documented in:					Future Commitment ¹
			Planning Documents	Terrestrial Ecosystems Report	TESR ²	DCR ³	Contract	
WLD-9	24. Regard the policies, plans, strategies and programs at the local/regional level dealing with other wildlife species of local or regional significance and, in descending order of priority: 1) avoid; 2) minimize impact; and 3) mitigate/restore.	Y		√				
Environmental Protection Requirements for projects on federal lands and/or with federal involvement. In addition to the requirements outlined above, the following Environmental Protection Requirements apply to projects involving federal land or receiving federal funding:								
WLD-1	25. Migratory Bird Sanctuaries and National Wildlife Areas in Ontario as listed by Environment Canada shall be avoided.	N						
WLD-1	26. Consider the conservation of wildlife on federal public lands that are administered by the Federal Minister of the Environment, and in any protected marine areas.	N						
WLD-3	27. Impacts on federal lands that provide critical habitat for listed wildlife species, and on other lands that provide critical habitat for listed migratory and aquatic species under the federal Species At Risk Act shall be avoided.	N						
Environmental Protection Requirements for projects in Designated Areas:								
Various	28. Have the special considerations for Designated Areas been addressed and the checklist completed for this factor? (see Section 13: Designated Areas of this User Guide).	Y		√				



**Section
3**

MINISTRY OF TRANSPORTATION

**APPENDIX 3.A
Checklist for Wetlands**

Environmental Standards and Practices User Guide

Version: December 2006

VERSION HISTORY

VERSION #	DATE	DESCRIPTION OF MAJOR CHANGE

The intent of this checklist is to allow project participants (MTO staff, consultants, Regulatory Agencies and the public) to review project environmental assessment process documentation to ensure that all potential impacts have been identified and adequately addressed. The checklist includes sections on both general project activities and compliance.

The general project activities are actions taken during transportation project design to assess and avoid / mitigate impacts. It is based on the requirements of MTO's *Environmental Reference for Highway Design*.

For compliance, the checklist includes summaries of the applicable Environmental Protection Requirements. The letters and number, for example VEG-2, are the reference to a specific Environmental Protection Requirement in MTO's *Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, and Operation and Maintenance*. Please refer to that document for a complete list and wording of the Environmental Protection Requirements.

To complete the checklist:

1. Review the project activity or compliance requirement.
2. Determine if it applies to the project (yes or no) and complete the "applies" column.
3. If, it applies, then check the document in which the project activity or compliance requirement has been documented.
4. If the project activity or compliance requirement applies but will be addressed / documented in the future, then check the "Future Commitment" column.

Project Activity or Compliance Requirement		Applies (Y/N)	Documented in:					Future Commitment¹
			Planning Documents	Terrestrial Ecosystems Report	TESR²	DCR³	Contract	
PROJECT SCOPE								
	1. Was the Terrestrial Ecosystems (and/or wetlands in particular) Speciality identified in the Request for Proposals?	Y	N/A	√	N/A	N/A	N/A	N/A
	2. Were wetlands identified during the course of the project?	Y	N/A	√	N/A	N/A	N/A	N/A
GENERAL PROJECT ACTIVITIES								
Assessment								
Background Data and Field Investigations	3. Have wetland resources been determined and mapped?	Y		√				
Determination of Significance	4. For the wetland(s), has the habitat function, significance and sensitivity to disturbance been determined?	Y		√				
Assessment of Impacts	5. Has encroachment upon wetlands been considered?	Y		√				
	6. Has changing the surface water balance of wetlands been considered?	Y		√				
	7. Has changing the groundwater balance of wetlands been considered?	N						
	8. Has discharging impacted water (sediment and other contaminants) directly or indirectly into wetlands been considered?	Y		√				
	9. Have the potential permanent and temporary impacts to wetlands (listed above) been assessed in terms of:							
	(a) Highway design alternatives?	Y		√				
(b) Alternative methods of construction?	N							

¹ A commitment has been made to address in subsequent stages of the transportation project (e.g., a commitment in the Preliminary Design stage to develop detailed mitigation in the Detail Design stage)

² Transportation Environmental Study Report including amendments

³ Design Construction Report including amendments

Project Activity or Compliance Requirement		Applies (Y/N)	Documented in:					Future Commitment¹
			Planning Documents	Terrestrial Ecosystems Report	TESR²	DCR³	Contract	
	(c) Highway operation/maintenance?	Y		√				
	10. Is the information collected adequate to enable the identification of resources/issues for the Valued Ecosystem Component criteria under CEAA?	N						
Environmental Protection / Mitigation								
	11. Has a preliminary mitigation strategy been completed?	Y		√				
	12. Has a detailed mitigation strategy been completed?	N						√
COMPLIANCE								
Environmental Protection Requirements⁴								
WET-2	13. Avoid the loss of wetland features and functions.	Y		√				
Environmental Protection Requirements for projects on federal lands and/or with federal involvement. In addition to the above, the following Environmental Protection Requirements apply to projects involving federal land or receiving federal funding:								
WET-1	14. Achieve no net loss of wetland function for wetlands where loss has reached critical levels, and the wetland is located on federal lands or the transportation initiative requires federal approvals or is receiving federal funding.	N						
Environmental Protection Requirements for projects in Designated Areas:								
Various	15. Have the special considerations for Designated Areas been addressed and the checklist completed for this factor? (see Section 13: Designated Areas of this User Guide).	Y						

⁴ Unless otherwise stated (e.g., by terms such as “shall” and “is not permitted”), the Environmental Protection Requirements (EPRs) are “as feasible” or “unless approved through the Environmental Assessment process”. This is in recognition that transportation facilities cannot avoid all impacts and that some ERPs may not be feasible in every situation.



**Section
4**

MINISTRY OF TRANSPORTATION

**APPENDIX 4.A
Checklist for Woodlands
and Other Vegetated Areas**

Environmental Standards and Practices User Guide

Version: December 2006

VERSION HISTORY

VERSION #	DATE	DESCRIPTION OF MAJOR CHANGE

The intent of this checklist is to allow project participants (MTO staff, consultants, Regulatory Agencies and the public) to review project environmental assessment process documentation to ensure that all potential impacts have been identified and adequately addressed. The checklist includes sections on both general project activities and compliance.

The general project activities are actions taken during transportation project design to assess and avoid / mitigate impacts. It is based on the requirements of MTO's *Environmental Reference for Highway Design*.

For compliance, the checklist includes summaries of the applicable Environmental Protection Requirements. The letters and number, for example VEG-2, are the reference to a specific Environmental Protection Requirement in MTO's *Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, and Operation and Maintenance*. Please refer to that document for a complete list and wording of the Environmental Protection Requirements.

To complete the checklist:

1. Review the project activity or compliance requirement.
2. Determine if it applies to the project (yes or no) and complete the "applies" column.
3. If, it applies, then check the document in which the project activity or compliance requirement has been documented.
4. If the project activity or compliance requirement applies but will be addressed / documented in the future, then check the "Future Commitment" column.

Project Activity or Compliance Requirement		Applies (Y/N)	Documented in:					Future Commitment¹
			Planning Documents	Terrestrial Ecosystems Report	TESR²	DCR³	Contract	
PROJECT SCOPE								
	1. Was the Terrestrial Ecosystems (and/or woodlands in particular) Speciality identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	2. Were woodlands identified during the course of the project?	Y	N/A	√	N/A	N/A	N/A	N/A
GENERAL PROJECT ACTIVITIES								
Assessment								
Background Data and Field Investigations	3. Has the vegetation / forest information including plant species / vegetation communities been determined and mapped?	Y		√				
Determination of Significance	4. For the vegetation communities, has the significance and the sensitivity to disturbance been determined?	Y		√				
Assessment of Impacts	5. Has encroaching into woodlands or other vegetation communities been considered?	Y		√				
	6. Has the impact of road salt/spray been considered?	Y						√
	7. Have the potential permanent and temporary impacts to woodlands and other vegetated areas (listed above) been assessed in terms of:							
	(a) Highway design alternatives?	Y		√				
	(b) Alternative methods of construction?	N						
	(c) Highway operation/maintenance?	Y		√				

¹ A commitment has been made to address in subsequent stages of the transportation project (e.g., a commitment in the Preliminary Design stage to develop detailed mitigation in the Detail Design stage)

² Transportation Environmental Study Report including amendments

³ Design Construction Report including amendments

Project Activity or Compliance Requirement		Applies (Y/N)	Documented in:					Future Commitment ¹
			Planning Documents	Terrestrial Ecosystems Report	TESR ²	DCR ³	Contract	
	8. Is the information collected adequate to enable the identification of resources/issues for the Valued Ecosystem Component criteria under CEAA?	N						
Environmental Protection / Mitigation								
	9. Has a preliminary mitigation strategy been completed?	Y		√				
	10. Has a detailed mitigation strategy been completed?	N						√
COMPLIANCE								
Environmental Protection Requirements⁴								
VEG-2	11. Habitat for designated vegetation species protected under the Ontario Endangered Species Act shall be avoided.	Y		√				√
VEG-3	12. Maintain the diversity of native vegetation in an area and natural connections between them.	Y		√				
VEG-4	13. Avoid significant woodlands and significant valleylands, including woodlands providing habitat for sensitive species.	Y		√				
VEG-5	14. Consider municipal objectives for woodland forestry management.	N						
VEG-6	15. Have regard for policies, plans, strategies and programs at the local/regional level dealing with vegetation resources of local or regional significance as may be identified by a local planning body such as a municipality, conservation authority, or other resource agency. For such resources the descending order of priority will be: 1) avoidance; 2) minimizing impact; and 3) mitigation / restoration.	Y		√				
VEG-7	16. Protect the features and functions of retained vegetation areas.	Y		√				√

⁴ Unless otherwise stated (e.g., by the term “shall” and “is not permitted”), the Environmental Protection Requirements (EPRs) are “as feasible” or “unless approved through the Environmental Assessment process”. This is in recognition that transportation facilities cannot avoid all impacts and that some ERPs may not be feasible in every situation.

Project Activity or Compliance Requirement		Applies (Y/N)	Documented in:				Future Commitment¹
			Planning Documents	Terrestrial Ecosystems Report	TESR²	DCR³	
VEG-8	17. Use ecological restoration principles to restore terrestrial ecological features where the right-of-way crosses or is adjacent to significant wildlife habitats, woodlots, woodlands and /or valley lands.	Y		√			√
Environmental Protection Requirements for projects on federal lands and/or with federal involvement. In addition to the requirements outlined above, the following Environmental Protection Requirements apply to projects involving federal land or receiving federal funding:							
VEG-1	18. Avoid impacts on federal lands that provide critical habitat for listed species under the federal Species at Risk Act.	N					
Environmental Protection Requirements for projects in Designated Areas:							
Various	19. Have the special considerations for Designated Areas been addressed and the checklist completed for this factor? (see Section 13 Designated Areas of this User Guide)	Y					



**Section
14**

MINISTRY OF TRANSPORTATION

**APPENDIX 14.A
Checklist for Designated Areas**

Environmental Standards and Practices User Guide

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VERSION HISTORY

VERSION #	DATE	DESCRIPTION OF MAJOR CHANGE

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1 INTRODUCTION

The intent of this checklist is to allow project participants (MTO staff, consultants, Regulatory Agencies and the public) to review project environmental assessment process documentation to ensure that all potential impacts have been identified and adequately addressed. The checklist includes sections on both general project activities and compliance.

In addition to the other Environmental Protection Requirements (see the checklists in other sections of the User Guide), transportation facilities located in Designated Areas shall, comply with the Environmental Protection Requirements for Designated Areas.

The following checklists include summaries of the applicable Environmental Protection Requirements. The letters and number, for example *ORM-2*, are the reference to a specific Environmental Protection Requirement in MTO's *Environmental Protection Requirements for Transportation Planning and Highway Design, Construction, and Operation and Maintenance*. Please refer to that document for a complete list and wording of the Environmental Protection Requirements.

Checklists for Designated areas have been provided by environmental factor. Each factor-specific checklist includes the compliance requirements for:

- Oak Ridges Moraine
- Niagara Escarpment
- Greenbelt Plan Area
- Others areas

To complete the checklist:

1. Review compliance requirement.
2. Determine, if it applies to the project (yes or no), and complete the "applies" column.
3. If it applies, then check the document(s) in which the project activity or compliance requirement has been documented.
4. If the compliance requirement applies but will be addressed / documented in the future, then check the "Future Commitment" column.

2 CHECKLIST FOR WETLANDS

Compliance Requirement for Wetlands within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment¹
			Planning Documents	Terrestrial Ecosystems Report	TESR²	DCR³	Contract	
OAK RIDGES MORAINÉ: COMPLIANCE								
General								
	1. Was the need to address Oak Ridges Moraine EPRs identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	2. Was the need to address Oak Ridges Moraine EPRs identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environmental Protection Requirements⁴								
ORM-1,2,3	3. Determine wetlands (i.e., Key Natural Heritage Feature).							
ORM-1,2,3	4. Maintain and, where possible, improve or restore the health, diversity, size and connectivity for the feature and the related ecological functions.							

¹ A commitment has been made to address in subsequent stages of the transportation project (e.g., a commitment in the Preliminary Design stage to develop detailed mitigation in the Detail Design stage)

² Transportation Environmental Study Report including amendments

³ Design Construction Report including amendments

⁴ Unless otherwise stated (e.g., by terms such as “shall”, “is not permitted”), the Environmental Protection Requirements (EPRs) are “as feasible” or “unless approved through the Environmental Assessment process”. This is in recognition that transportation facilities cannot avoid all impacts and that some ERPs may not be feasible in every situation.

Compliance Requirement for Wetlands within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment ¹
			Planning Documents	Terrestrial Ecosystems Report	TESR ²	DCR ³	Contract	
NIAGARA ESCARPMENT: COMPLIANCE								
General								
	5. Was the need to address Niagara Escarpment EPRs identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	6. Was the need to address Niagara Escarpment EPRs identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environmental Protection Requirements								
NE-2	7. Determine the location and significance of and assess the impacts to wetlands (i.e., Key Natural Heritage Features).							
NE-14	8. Construction in or across a wetland should be appropriately timed to minimize impacts on wildlife habitat.							
NE-17	9. Wetlands including a set back set by the Niagara Escarpment Commission should be avoided.							
NE-18	10. The set-back should be a natural vegetated buffer.							
NE-19	11. Highways may be located and constructed adjacent to wetlands provided it does not result in any of the following:							
	(a) Loss of water quality.							
	(b) Loss of wetland functions.							
	(c) Conflict with existing site-specific wetland management practices.							
NE-19	(d) Loss of contiguous wetland area.							
	12. Storm water management ponds must be designed and located to avoid streams, wetlands, Areas of Natural and Scientific Interest (Life Science), source areas, Escarpment slopes and significant watercourses.							
NE-22	12. Storm water management ponds must be designed and located to avoid streams, wetlands, Areas of Natural and Scientific Interest (Life Science), source areas, Escarpment slopes and significant watercourses.							
NE-24	13. Natural vegetative buffers should be maintained or established.							

Compliance Requirement for Wetlands within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment ¹
			Planning Documents	Terrestrial Ecosystems Report	TESR ²	DCR ³	Contract	
GREENBELT: COMPLIANCE								
General								
	14. Was the need to address Greenbelt EPRs identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	15. Was the need to address Greenbelt EPRs identified during the course of the project?	Y	N/A	√	N/A	N/A	N/A	N/A
Environmental Protection Requirements								
GB-2	16. Maintain the linkages between ecosystems and provincial parks or public lands.							
GB-2	17. Maintain the network of countryside and open space areas which support the Oak Ridges Moraine and the Niagara Escarpment.							
GB-2	18. Maintain or restore and improve as practical, linkages between ecosystems and provincial parks or public lands.							
GB-2	19. Ensure that the development of transportation infrastructure proceeds in an environmentally sensitive manner.							
GB-5	20. In the Protected Countryside Areas, identify, determine significance, and assess impacts to wetlands.							
GB-5	21. Minimize the amount of the Greenbelt, and in particular the Natural Heritage System, that is traversed and/or occupied.							
GB-5	22. Include illumination in the assessment of impacts.							
GB-5	23. Include road salt in the assessment of impacts.							
GB-5	24. Maintain the network of countryside and open space areas that support the Oak Ridges Moraine and the Niagara Escarpment.							
GB-5	25. Maintain the connections between lakes and the Oak Ridges Moraine and Niagara Escarpment.							
GB-8	26. Protect aquatic species and their habitat.							

Compliance Requirement for Wetlands within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment ¹
			Planning Documents	Terrestrial Ecosystems Report	TESR ²	DCR ³	Contract	
OTHER DESIGNATED AREA: COMPLIANCE								
General								
	27. Was the need to address other EPRs for designated areas identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	28. Was the need to address other EPRs for designated areas identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environmental Protection Requirements								
DA-2	29. Identify and integrate information on designated areas as a key factor.							
DA-3	30. Consider the specific features and functions of designated areas that make them unique.							
DA-4	31. Comply with the relevant policy requirements of the approved management plans.							
DA-5	32. Avoid Designated Areas.							
DA-5	33. Where avoidance was not possible:							
	(a) Minimize the extent of intrusion.							
	(b) Minimize visual impacts.							
	(c) Maintain access to Designated Areas (i.e. trail or roadway access).							
	(d) Provide buffers adjacent Designated Areas.							

3 CHECKLIST FOR WOODLANDS AND OTHER VEGETATED AREAS

Compliance Requirement for Woodlands and Other Vegetated Areas within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment ⁵
			Planning Documents	Terrestrial Ecosystems Report	TESR ⁶	DCR ⁷	Contract	
OAK RIDGES MORAINÉ: COMPLIANCE								
General								
	1. Was the need to assess Oak Ridges Moraine EPRs identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	2. Was the need to assess Oak Ridges Moraine EPRs identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environmental Protection Requirements⁸								
ORM-1,2,3, 12, 19 & 20	3. Determine key Natural Heritage Features (including the following):							
	(a) Significant valleylands.							
	(b) Significant woodlands.							
	(c) Areas of natural and scientific interest (life science).							
	(d) Vegetation Protection Zones.							
ORM-20	4. Minimize the removal of vegetation, grading and soil compaction.							
ORM-1	5. Maintain and, where possible, improve or restore the health, diversity, size and connectivity for the feature and the related ecological functions.							

⁵ A commitment has been made to address in subsequent stages of the transportation project (e.g., a commitment in the Preliminary Design stage to develop detailed mitigation in the Detail Design stage)

⁶ Transportation Environmental Study Report including amendments

⁷ Design Construction Report including amendments

⁸ Unless otherwise stated (e.g., by terms such as “shall”, “is not permitted”), the Environmental Protection Requirements (EPRs) are “as feasible” or “unless approved through the Environmental Assessment process”. This is in recognition that transportation facilities cannot avoid all impacts and that some ERPs may not be feasible in every situation.

Compliance Requirement for Woodlands and Other Vegetated Areas within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment⁵
			Planning Documents	Terrestrial Ecosystems Report	TESR⁶	DCR⁷	Contract	
ORM-1	6. In Natural Core Areas and Countryside Areas: maintain or restore natural self-sustaining vegetation and wildlife habitat.							
ORM-2	7. In Natural Linkage Areas: maintain, and where possible improve or restore natural self-sustaining vegetation over large parts of the area to facilitate movement of plants and animals.							
NIAGARA ESCARPMENT: COMPLIANCE								
General								
	8. Was the need to assess Niagara Escarpment EPRs identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	9. Was the need to assess Niagara Escarpment EPRs identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environmental Protection Requirements								
NE-2,4,27 to 29	10. Determine the location and significance of and assess the impacts to Key Natural Heritage Features:							
	(a) Significant valleylands.							
	(b) Significant woodlands.							
	(c) Significant portions of the habitat of endangered, rare and threatened species.							
NE-2	11. All new and expanded transportation facilities must be located and designed to minimize the impact on the Escarpment environment.							
NE-27	12. Minimize disturbance of wooded areas.							
NE-30	13. New highways are not permitted in identified habitat of endangered (regulated) plant species.							
NE-28	14. Protect retained trees during construction (e.g. with snow fencing, wrapping or other acceptable means).							
NE-29	15. Maintain existing tree cover or other stabilizing vegetation on slopes in excess of 25 per cent (1 in 4 slope).							
NE-30	16. New highways are not permitted in identified habitat of endangered (regulated) plant species.							

Compliance Requirement for Woodlands and Other Vegetated Areas within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment⁵
			Planning Documents	Terrestrial Ecosystems Report	TESR⁶	DCR⁷	Contract	
GREENBELT: COMPLIANCE								
General								
	17. Was the need to assess Greenbelt EPRs identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	18. Was the need to assess Greenbelt EPRs identified during the course of the project?	Y	N/A	√	N/A	N/A	N/A	N/A
Environmental Protection Requirements								
GB-5 to 8	19. In the Protected Countryside Areas, identify, determine significance, and assess impacts key to key natural heritage features including:							
	(a) Significant habitat of endangered species, threatened species and special concern species.							
	(b) Significant valleylands.							
	(c) Significant woodlands.							
	(d) Sand barrens, savannahs and tallgrass prairies.							
	(e) Alvars.							
GB-5	20. Include illumination in the assessment of impacts.							
GB-5	21. Include road salt in the assessment of impacts.							
GB-2	22. Maintain the network of countryside and open space areas that supports the Oak Ridges Moraine and the Niagara Escarpment							
GB-2	23. Maintain the connections between lakes and the Oak Ridges Moraine and Niagara Escarpment.							
GB-2	24. Maintain the linkages between ecosystems and provincial parks or public lands.							
GB-6	25. Within the Natural Heritage System, maintain a minimum vegetation protection zone for significant woodlands of 30 metres wide measured from the outside boundary of the feature.							

Compliance Requirement for Woodlands and Other Vegetated Areas within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment⁵
			Planning Documents	Terrestrial Ecosystems Report	TESR⁶	DCR⁷	Contract	
GB-6	26. Provide a vegetation protection zone within 120 m of a key natural heritage features in the Natural Heritage System of the Protected Countryside.							
OTHER DESIGNATED AREA: COMPLIANCE								
General								
	27. Was the need to assess EPRs for other designated areas identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	28. Was the need to assess EPRs for other designated identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environmental Protection Requirements								
DA-2	29. Identify and integrate information on designated areas as a key factor.							
DA-3	30. Consider the specific features and functions of designated areas that make them unique.							
DA-4	31. Comply with the relevant policy requirements of the approved management plans.							
DA-5	32. Avoid Designated Areas.							
DA-5	33. Where avoidance was not possible:							
	(a) Minimize the extent of intrusion.							
	(b) Minimize visual impacts.							
	(c) Maintain access to Designated Areas (i.e. trail or roadway access).							
	(d) Provide buffers adjacent Designated Areas.							

4 CHECKLIST FOR WILDLIFE HABITAT AND MOVEMENTS

Compliance Requirement for Wildlife Habitat and Movements within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment⁹
			Planning Documents	Terrestrial Ecosystems Report	TESR¹⁰	DCR¹¹	Contract	
OAK RIDGES MORAINÉ: COMPLIANCE								
General								
	1. Was the need to assess Oak Ridges Moraine EPRs identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	2. Was the need to assess Oak Ridges Moraine EPRs identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environmental Protection Requirements¹²								
ORM-1,2,3, 12,	3. Protect significant portions of the habitat of endangered, rare and threatened species.							
ORM-11	4. Facilitate wildlife movement.							
ORM-1	5. Maintain and, where possible, improve or restore the health, diversity, size and connectivity for the feature and the related ecological functions.							
ORM-9	6. In Natural Core Areas:							
	(a) Maintain or restore natural self-sustaining vegetation and wildlife habitat.							
	(b) Design lighting to minimize intrusion into Natural Core Areas.							

⁹ A commitment has been made to address in subsequent stages of the transportation project (e.g., a commitment in the Preliminary Design stage to develop detailed mitigation in the Detail Design stage)

¹⁰ Transportation Environmental Study Report including amendments

¹¹ Design Construction Report including amendments

¹² Unless otherwise stated (e.g., by terms such as “shall”, “is not permitted”), the Environmental Protection Requirements (EPRs) are “as feasible” or “unless approved through the Environmental Assessment process”. This is in recognition that transportation facilities cannot avoid all impacts and that some ERPs may not be feasible in every situation.

Compliance Requirement for Wildlife Habitat and Movements within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment⁹
			Planning Documents	Terrestrial Ecosystems Report	TESR¹⁰	DCR¹¹	Contract	
ORM-2	7. In Natural Linkage Areas:							
	(a) Maintain, and where possible improve or restore natural self-sustaining vegetation over large parts of the area to facilitate movement of plants and animals.							
	(b) Maintain a natural continuous east-west connection and additional connections to river valleys and streams north and south of the Plan Area.							
ORM-9	8. In Countryside Areas: Maintain or restore natural self-sustaining vegetation and wildlife habitat.							
NIAGARA ESCARPMENT: COMPLIANCE								
General								
	9. Was the need to assess Niagara Escarpment EPRs identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	10. Was the need to assess Niagara Escarpment EPRs identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environmental Protection Requirements								
NE-2, 29 & 30	11. Determine the location and significance of and assess the impacts to the following Key Natural Heritage Features:							
	(a) Significant portions of the habitat of endangered, rare and threatened species.							
	(b) Significant valleylands.							
	(c) Significant wildlife habitat.							
NE-30	12. New highways are not permitted in identified habitat of endangered (regulated) animal species.							
NE-31	13. Minimize the impacts upon wildlife habitat, in particular, habitats of endangered (not regulated), rare, special concern, and threatened plant or animal species, as identified by on-site evaluation.							
NE-31	14. Maintain wildlife corridors and linkages with adjacent areas.							

Compliance Requirement for Wildlife Habitat and Movements within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment^e
			Planning Documents	Terrestrial Ecosystems Report	TESR¹⁰	DCR¹¹	Contract	
NE-14	15. Time construction in or across a watercourse or wetland to minimize impacts on fish and wildlife habitat.							
GREENBELT: COMPLIANCE								
General								
	16. Was the need to assess Greenbelt EPRs identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	17. Was the need to assess Greenbelt EPRs during the course of the project?	Y	N/A	√	N/A	N/A	N/A	N/A
Environmental Protection Requirements								
GB-2	18. In the Protected Countryside Areas, identify, determine significance, and assess impacts to Key Natural Heritage Features including:							
	(a) The network of countryside and open space areas that supports the Oak Ridges Moraine and the Niagara Escarpment							
	(b) The connections between lakes and the Oak Ridges Moraine and Niagara Escarpment.							
	(c) The linkages between ecosystems and provincial parks or public lands.							
GB-5 to 8	19. In the Protected Countryside Areas, identify, determine significance, and assess impacts to key natural heritage features including:							
	(a) Significant habitat of endangered species, threatened species and special concern species.							
	(b) Significant valleylands.							
	(c) Significant woodlands.							
	(d) Significant wildlife habitat.							
GB-5	20. Include illumination in the assessment of impacts.							
GB-5	21. Include road salt in the assessment of impacts.							

Compliance Requirement for Wildlife Habitat and Movements within Designated Areas		Applies (Y/N)	Documented in:					Future Commitment^e
			Planning Documents	Terrestrial Ecosystems Report	TESR¹⁰	DCR¹¹	Contract	
OTHER DESIGNATED AREA: COMPLIANCE								
General								
	22. Was need to assess Greenbelt EPRs other designated areas identified in the Request for Proposals?	Y	N/A	N/A	N/A	N/A	N/A	N/A
	23. Was the need to assess Greenbelt EPRs other designated areas identified during the course of the project?	N	N/A	N/A	N/A	N/A	N/A	N/A
Environmental Protection Requirements								
DA-2	24. Identify and integrate information on designated areas as a key factor.							
DA-3	25. Consider the specific features and functions of designated areas that make them unique.							
DA-4	26. Comply with the relevant policy requirements of the approved management plans.							
DA-5	27. Avoid Designated Areas.							
DA-5	28. Where avoidance was not possible:							
	(a) Minimize the extent of intrusion.							
	(b) Minimize visual impacts.							
	(c) Maintain access to Designated Areas (i.e. trail or roadway access).							